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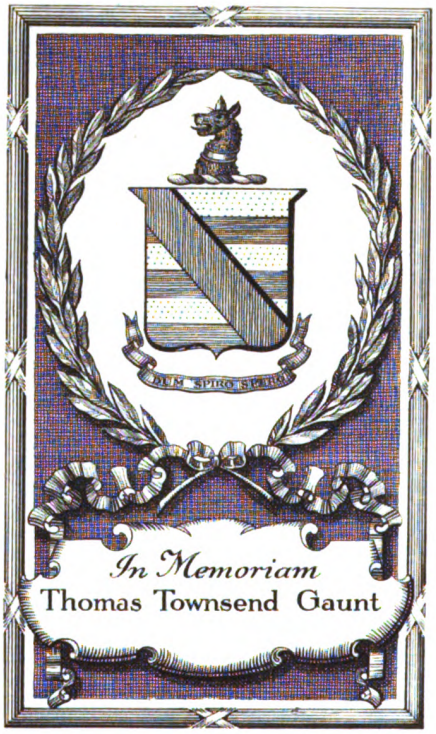

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SAMUEL SQUIRE SPRIGGE, M.A., M.D. CANTAB.
EDITOR.

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Researches
INTO
SENSORY DISTURBANCES FROM CEREBRAL LESIONS.[1]

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INTRODUCTORY REMARKS.

WE must begin by craving the indulgence of our readers for the form in which the following paper is cast. The nature of the sensory changes produced by lesions of the cerebral cortex and other parts of the brain has been the theme of innumerable works by the acutest intellects in medicine of the last 50 years. Our research would have been impossible but for their labours, and yet we can never acknowledge what we owe to them. Many whose views have helped to make our work fruitful are known to us through their publications, and to them we can repay our debt by referring at suitable points to the similarity of our results to those of our predecessors. Others have been our teachers and the masters for whom we have gladly worked. To them our debt can never be repaid, for much of the identity in outlook comes from personal intercourse and cannot be fixed by citation. First amongst this group must always stand the name of Dr. Hughlings Jackson.

Scope of Communication.

This paper is a preliminary communication in which we put forward a general view of the mode of action on the afferent side of the nervous system. Any such generalisation must not only contain much that is common to the views of others, but also many things incompatible with the conceptions even of those with whom we are otherwise in harmony. Where possible we shall always acknowledge our concurrence with those who have preceded us, but in the small space at our disposal we cannot enter into criticism of work with which we are not in agreement. In many cases, although our theoretical conclusions may coincide with those put forward by other workers, our experimental results may differ fundamentally. In the same way similar clinical observations may lead us to other conclusions, but it will be impossible to stop our exposition in order to discuss these differences.

We shall attempt to put forward in this paper a general conception of the mechanism underlying sensation based upon a study of human beings in whom disease, accident, or surgical interference has produced some stationary lesion. Many of these patients have occupied our attention from time to time for many years, and it will be impossible in this preliminary communication to give a complete history of all our cases.

Methods of Investigation.

We lay great stress upon the methods we have used for testing sensibility in this research. As these, however, have only limited interest we shall publish them elsewhere. As far as possible we shall avoid the use of all general terms. We wish to lay peculiar stress on the confusion which arises from the use of all such expressions as "deep sensibility" when reporting the results of a clinical examination. Not infrequently "deep sensibility" is said to be affected from a lesion of the cortex when the observer means to state that the appreciation of posture, of passive movement, or of vibration, was defective. Similarly, "atopognosis" is a combined loss of the faculties of recognising posture and the situation of the spot stimulated, two functions capable of independent investigation. In every case, therefore, we shall describe our observations under headings which imply the simple test used in analysing the loss of sensation.

We shall begin by tracing sensory impulses from the point where they enter the spinal cord and follow them to those centres where they form the basis of that psychical process we call sensation. For this investigation exact knowledge of the site of the lesion is less important than a precise determination of the nature of the sensory changes in selected cases. It is only by the study of the nature and grouping of these affections of sensation that we can obtain any knowledge of the nature of cerebral activity and of the form in which impulses reach the higher centres to underlie the psychical elaboration of sensation.

Nature of Lesions.

It is our pleasant duty to express our sincere thanks to all those who have helped us in this work. To the staff of the National Hospital, Queen-square, we owe innumerable opportunities of observing many valuable cases, and Dr. Head wishes to thank them for their generous hospitality. To Sir Victor Horsley we are particularly grateful for permission to use our observations on his remarkable case of excision of a portion of the cerebral cortex.

In consequence of such help we have been able to investigate a large number of selected cases. This includes patients in whom the clinical symptoms justified us in assuming certain affections of the optic thalamus. A second group consists of patients with limited lesions of the surface of the brain, most of which resulted from successful removal of a cerebral tumour or other cortical disease. In this group the site of the lesion is known with more or less accuracy, and we have included solely stationary cases examined months or years after operation. Finally, we have employed the same methods to investigate many instances of lesions in the neighbourhood of the internal capsule and deeper parts of the brain.

I.—THE GROUPING OF AFFERENT IMPULSES IN THE SPINAL CORD AND BRAIN-STEM.

1. THE SPINAL CORD.

It is a matter of universal belief that man has been evolved from the lower animals; and yet when we deal with sensation and sensory processes we speak as if he were created with peripheral end-organs, each capable of reacting to one of the sensory qualities of human experience. The impulses starting in these end-organs are supposed to pass unaltered to the brain, there to set up that peculiar and unknown change which evolves a specific sensation. Spots were found on the skin sensitive to touch, to pain, to heat or to cold only. With the discovery of these highly developed end-organs the doctrine of specific nerve energy seemed to be proved in the strictest manner.

All other forms of sensory appreciation were supposed to be produced by the physical transformation of these primary sensory elements, in association with an ill-defined faculty called the "muscle-sense." Recognition of the locality of a stimulus and the posture of the limb under examination were attributed to judgment and association.

But alongside the systematic investigation by von Frey and others of the capabilities of these specific areas in the skin, the clinicians were discovering the importance of "muscular sensibility." Sherrington's demonstration of afferent fibres in muscles and tendons placed the existence of the "muscle-sense" beyond a doubt. The use he made of these afferent impulses from deep structures in his theory of the proprioceptive system necessitated a complete exploration of the nature of deep sensibility.

By their experiment directed to this end, Rivers and Head [31*] showed that beneath the skin, independent of all "touch" and "pain spots," lies an afferent system capable of a wide range of functions. Pressure that in ordinary life would be called a touch can be appreciated and localised with considerable accuracy. Increase of pressure, especially on bones and tendons, will cause pain. Moreover, it is from the impulses of this deep afferent system that we gain our knowledge of the posture of the limbs and the power of recognising passive movements.

Complexity of Peripheral Mechanism of Sensation.

Evidently, therefore, the peripheral mechanism of sensation is less simple than was at first supposed. For there are two sets of end-organs that can respond to tactile stimuli and

[1] The substance of this paper formed the Croonian lectures delivered before the Royal College of Physicians of London on June 13th, 15th, 20th, and 27th, 1911. The results will be published in more detail in the forthcoming number of *Brain*.

* These and other reference numbers relate to a bibliography to appear at the end.

two independent mechanisms for the initiation of pain. Further analysis showed that the peripheral apparatus in the skin, by which we become conscious of the nature of external stimuli, is highly complex. No one sensory quality is subserved by a single set of end-organs, but every specific sensation is the result of the combined action of more than one group. This is exactly the result that might have been expected when we bear in mind that the structure of man is the product of a long evolution.

Grouping of Different Impulses in Spinal Cord.

But it is equally obvious, from an evolutionary standpoint, that these diverse impulses could not pass uncombined to the highest physiological level. Within the spinal cord the opportunist grouping of the periphery gives place to an arrangement according to quality (Head and Thompson [11]). All impulses capable of generating pain become grouped together in the same path and can be disturbed simultaneously by an appropriate lesion of the spinal cord. In the same way sensibility to heat or to cold may be lost independently of one another, showing that all the impulses upon which they are based have been sorted out into two functional groups, each of which passes by a separate system in the spinal cord.

The most remarkable condition revealed by an intramedullary lesion is the complete separation of the impulses underlying the appreciation of posture, the discrimination of two points and their correlated faculties from those of other sensory groups. All tactile, painful, and thermal impulses coming from the periphery undergo regrouping after entering the spinal cord, and whether they arise in the skin or in deeper structures become arranged according to functional similarity. Then, after a longer or shorter course, they pass away to the opposite side of the spinal cord.

Impulses concerned with Postural and Spacial Recognition.

This process of filtration leaves all the impulses concerned with postural and spacial recognition to continue their course unaltered in the posterior columns; they are the survivors of peripheral groups dissociated by the passing away of certain components into secondary afferent systems. At any point in the spinal cord these columns transmit not only impulses from the periphery which are on their way, after a longer or shorter passage, to regrouping and transformation, but at the same time they form the path for impulses, arising both in the cutaneous and deep afferent systems, which undergo no regrouping until they reach the nuclei of the medulla oblongata.

Thus a lesion confined to one half of the spinal cord, even at its highest segment, may interfere with the passage of sensory impulses, some of which are travelling in secondary paths, whilst others are still within the primary level of the nervous system. All impulses concerned with painful and thermal sensations from distant parts, disturbed by such a lesion, will be travelling in secondary paths, and will have come from the opposite half of the body, for after regrouping they have passed across the spinal cord. But those impulses underlying the appreciation of posture, the compass-test, size, shape, form, weight, consistence, and vibration will be affected on the same half of the body as the lesion. They still remain in paths of the peripheral level and have undergone no regrouping.

In such a case the parts on the side opposed to the lesion may be insensitive to pain, heat, and cold; but all the postural and spacial aspects of sensation will be perfectly maintained. Yet all power of recognising position, of estimating size, shape, form, and weight, or of discriminating the two compass points will be lost in the limbs which lie on the side of the lesion, although tactile sensibility and localisation of the spot stimulated may be perfectly preserved.

This remarkable arrangement enables us to analyse the nature of the peripheral impulses upon which depends our power of postural and spacial recognition. Obviously, even at the periphery, they must be independent of touch and pressure. The power to distinguish two points applied simultaneously and to recognise size and shape requires as a preliminary the existence of sensations of touch. But the patient may be deprived of all such powers of spacial recognition without any discoverable loss of tactile sensibility. In the same way our power to appreciate the position of a limb, or to estimate the weight of an object, is based upon impulses which, even at the periphery, exist apart from those of touch and pressure called into simultaneous being by the same external stimulus.

This long delay of the postural and spacial elements in reaching secondary paths enables them to give off afferent impulses into the spinal and cerebellar coördinating mechanisms which lie in the same half of the spinal cord. The impulses which pass away in this direction are never destined to enter consciousness directly. They influence coördination, unconscious posture and muscular tone, and although arising from the same afferent end-organs they never become the basis of a sensation.

Finally, the last survivors of these impulses from the periphery become regrouped in the nuclei of the posterior columns and cross to the opposite half of the medulla oblongata in paths of the secondary level. So they pass to the optic thalamus and thence to the cortex to underlie those sensations upon which are based the recognition of posture and spacial discrimination.

Illustrative Case.

The following case is an example of the effects produced by a lesion situated in one-half of the spinal cord just below the point at which the postural and spacial impulses become regrouped in the nuclei of the posterior columns.

CASE 1. *Brown-Séquard paralysis.—On the right*—Weakness of arm and leg. Reflexes exaggerated; ankle clonus and extensor plantar reflex. Loss of painful sensibility over right cheek: touch, heat, and cold unaffected. *On the body and limbs*—Tactile, painful and thermal sensibility were perfect; but in the arm and leg posture, passive movements, and vibration of a tuning-fork could not be appreciated within normal limits, the compass test was defective, and he could not recognise size, shape, form, weight, or consistence of objects by the right hand. Localisation was not affected. *On the left*—Motion perfect. Reflexes normal. Loss of sensation to pain, heat, and cold. All other forms of sensibility, including localisation, perfectly preserved.

This case is an excellent illustration of the principles laid down in this section, and the retention of muscular power in the right hand enabled us to test the faculty of recognising size, shape, form, weight and consistence with an accuracy otherwise impossible.

Three Main Divisions of Afferent Impulses.

In conclusion we believe that at the extreme upper end of the spinal cord, just below the formation of the posterior column nuclei, afferent impulses pass upwards in three main divisions:—

1. The impulses underlying sensations of pain, of heat, and of cold are travelling in secondary paths in the opposite half of the spinal cord from that by which they entered.

2. Those impulses upon which depend postural recognition and spacial discrimination still remain uncrossed in the posterior column. They consist of one group arising in the deep afferent system, upon which depends our recognition of posture, passive movement, weight, consistence, and vibration. A second group arises in the end-organs of the skin, and these impulses underlie the discrimination of two points applied simultaneously, and the allied appreciation of size, shape, and form.

3. Contact sensibility evoked by touch and by pressure may remain entirely undisturbed. Apparently it depends upon impulses which run in a bilateral path, and it is therefore unaffected by a purely unilateral lesion (Rothmann [32], Petrén [23], Head and Thompson [11]). This tactile group formed by the union of tactile impulses within the cord carries with it the impulses which underlie the power of recognising with accuracy the situation of the stimulated spot, and localisation therefore remains unaffected.

2. THE BRAIN-STEM.

The larger number of afferent impulses traverse the spinal cord, grouped, according to their sensory qualities, in paths that can be isolated by disease. This enables us to analyse the nature of the groups formed, either by specific selection at the first synaptic junction, or by gradual filtration away into secondary tracts, of impulses arising originally in the same peripheral system. But in their further passage through the brain-stem to the optic thalamus the impulses run in paths which are anatomically more closely associated. This makes any analysis of the grouping of afferent impulses in this region unusually difficult.

Pain, Heat, and Cold Impulses.

Impulses underlying sensations of pain, heat, and cold alone seem to run unaltered between the upper end of the spinal cord and the optic thalamus.[2] They receive the accession of the regrouped secondary impulses from the face, which cross to join the specific path for pain, for heat, or for cold. These paths are so situated that they can be interrupted without disturbance of any other form of sensation on the body, and the analgesia and thermo-anæsthesia so produced resemble in quality the loss to pain, heat, and cold caused by a lesion of the spinal cord.

Thus when a lesion of the bulb interferes with sensations of pain, not only may the skin be insensitive to prick but the readings of the pressure algometer may be raised on the analgesic side. In the same way the affected area on the body may be insensitive to all degrees of heat and to all stimuli capable of evoking normally a sensation of cold. It is, however, important to remember that although the uncomfortable sensation produced by excessive pressure is greatly diminished, a lesion in this situation does not usually abolish completely all painful pressure (Cases 2 and 3). Thus it would seem that the grosser forms of pain and discomfort may possibly find their way by another path if the usual one is closed; whereas an equivalent lesion in the spinal cord blocks all painful impulses whatever their origin.

Not only can these three forms of sensibility be affected together, but any one of them may escape or be affected alone. The following case shows that, with a one-sided lesion of the bulb, the opposite half of the body may become analgesic, and yet the threshold values of sensibility to heat and cold may be equal on the two sides.

CASE 2.—October, 1906 sudden onset of pain in the right lower jaw. Since June, 1907, he has noticed loss of sensation on the left half of the body and right half of the face. First seen by us June, 1909, and since then his condition has not changed materially. Motor power and reflexes unaffected. Diplopia in all directions. Pupils unaffected. Optic neuritis in both eyes. Hearing diminished in right ear.

Sensation on the face.—Loss to prick with no loss to pressure-pain on the right side of the face, head, and neck. No other change in sensation to measured stimuli, but touch seemed "less vivid," heat "hotter," and cold "less cold," over the right than the left half of the face.

Sensation on the body.—The left half, except the perineum and scrotum, was insensible to prick. Pressure-pain was also diminished. Otherwise sensation was unaffected.

This case showed (1) a local lesion affecting the sensation of the right half of the face and neck; (2) a remote disturbance of sensibility to pain over the left half of the body with considerable raising of the algometer readings over the analgesic area; (3) heat and cold showed the same threshold on the two halves of the body.

All recent work has shown that the paths for the transmission of the impulses for pain, heat, and cold run up in the neighbourhood of the nucleus of the trigeminal nerve. This close local association is particularly well shown by cases of occlusion of the posterior inferior cerebellar artery (Wallenberg [38], Bruer and Marburg [2], Spiller [37]).

Separation of Spacial Discrimination and Postural Recognition Impulses.

In addition to these well-known facts the following instance of this condition also shows that impulses underlying the appreciation of posture and passive movement have become separated from those concerned with spacial discrimination. The compass-test gave identical results on the two halves of the body, and size, shape, and form could be appreciated on both hands. And yet the amount of passive movement necessary to evoke a sensation was three to four times greater in the affected fingers. Evidently a change in grouping has taken place at the posterior column nuclei and the impulses for spacial discrimination now tend to run apart from those of postural recognition.

CASE 3.—An instance of "occlusion of the posterior inferior cerebellar artery." Sudden onset Dec. 25th, 1908. Seen by us first in July, 1909. Horizontal and rotatory nystagmus, but diplopia had passed off. Left pupil did not dilate fully to shade. Left palpebral fissure smaller than right. Movement of left half of the palate defective, but vocal cords and tongue moved well. Gait unsteady; he tended to deviate to the left but fell to the right when his eyes were closed. No paralysis. Reflexes normal.

Sensations on the face.—Left half insensitive to prick, but sensitive to pressure-pain. Tactile and thermal thresholds were equal and normal on the two halves of the face, but all temperatures seemed "duller" on the left half.

Sensation on the body.—Loss to prick, to heat, and to cold over the right half of the body, right arm, and right leg. Sensibility to pressure-pain diminished over this area but not lost.

Diminished power of recognising posture and pressure movement in right arm and right leg. All other forms of sensation normal.

This typical case of "occlusion of the posterior inferior cerebellar artery" showed:—

1. A sensory disturbance over the left half of the face representing the local lesion.
2. Analgesia, with raising of the algometer readings, and complete loss of sensation to heat and to cold over the right half of the body.
3. Diminished recognition of posture and passive movement in the right arm and leg, but all spacial discrimination was perfect (compass-test, appreciation of size, shape, form)
4. Slight cerebellar incoördination in the left arm and leg, which was not increased by closing the eyes.

Gathering Together of Sensory Paths.

When all afferent impulses from the face have undergone re-grouping and passed, in secondary tracts, to the opposite half of the nervous system, the various sensory paths are gathered closely together in preparation for their ending in the optic thalamus. Every sensory path now lies within the opposite half to that by which its impulses entered the central nervous system. The complete integrity of sensations on the same side as the lesion shows that no bilateral paths are open to any form of sensory impulse.

From the analytical aspect these brain-stem lesions can give little information as to the grouping of the elements underlying sensation. But occasionally by watching the gradual disappearance of one form after another a hint may be gained with regard to the independence or association of any two groups of impulses.

Moreover, the tendency we have already noticed for the grosser forms of pain or discomfort to find a way to consciousness, although the more specific forms of pain, heat, or cold are blocked, becomes more evident the closer the lesion lies to the optic thalamus. And yet it is probable that this discomfort is not conducted by a bilateral path.

The following case, which we owe to the kindness of the late Dr. Beevor, illustrates the concentration of paths just before their entry into the optic thalamus. Incidentally it seems to show that the power of localising the spot touched may be greatly affected at this level with but little loss of tactile sensibility.

CASE 4.—Tumour of the right side of the mid-brain and optic thalamus verified by post-mortem examination. Five months before death the following signs were present. Loss of power in the left arm and leg, with profound ataxy. Extensor response from left sole with normal response from right. Athetoid movements of left hand, together with a fine tremor when the left arm was extended. Eye movements greatly restricted; nystagmus in all directions; fixed pupils.

The loss of sensation was confined to the left of the middle line. Sensations of prick diminished over left arm and leg, but lost on the left palm only. Tactile sensibility very little, if at all, affected during the time he was under observation by us. Localisation lost over left upper extremity. Compass-test gravely affected over left arm and leg. Appreciation of size and weight abolished in left hand.

This is a case where a malignant growth affected the corpora quadrigemina and that portion of the mid-brain at a point where the paths for sensory impulses are converging to an end in the thalamus. The clinical signs indicate that this lesion started in the mid-brain, although at the time of death the right optic thalamus was also destroyed.

During the course of the disease this case showed that:—In this situation the impulses underlying postural

[2] This does not necessarily mean that the impulses are carried by uninterrupted fibres. It has been suggested by Long [18], Cajal [4], Kohnstamm [15] that the nuclei of the formatio reticularis are intercalated in the course of the afferent conduction tracts. Such anatomical relay would not interfere with the above physiological conclusions, as it does not necessarily imply any regrouping of sensory impulses

recognition, spacial discrimination, and localisation (spot-finding) may be dissociated from those concerned with touch and pain. At one stage of his illness the patient was therefore able to appreciate contact with von Frey's hairs and cotton-wool, but could not localise the spot touched. Nor could he tell the head from the point of a pin, or the relative size and weight of objects placed in his hand.

Brain-stem: Summary.

To sum up the conclusions of this section, we can say that he brain-stem between the nuclei of the posterior columns and the final termination of all sensory paths in the optic thalamus is the seat of the following changes:—

1. The impulses for pain, heat, and cold continue to run up in separate secondary paths on the opposite side of the nervous system to that by which they entered. They receive accessions from the regrouped afferent nerves of the head and upper part of the neck. Although these paths are frequently affected together they are independent of one another, and any one of the three qualities of sensation may be dissociated by disease.

2. Lesions of the spinal cord tend to diminish simultaneously all forms of painful sensibility, but with disease of the brain-stem the gross forms of pain and discomfort may pass to consciousness, although the skin is analgesic. This applies not only to painful pressure but to the discomfort produced by excessive heat.

3. The impulses concerned with postural recognition part company with those for spacial discrimination at the posterior column nuclei. Up to this point they have travelled together in the same column of the spinal cord, but as soon as they reach their first synaptic junction they separate. Above the point where they enter secondary paths the power of recognising position and passive movement can be affected independently of the discrimination of two points and the appreciation of size, shape, and form.

4. It would seem as if those elements which underlie the power of localising the spot touched or pricked become separated off from their associated tactile impulses before they have actually come to an end in the optic thalamus. The long connexion of localisation with the integrity of tactile sensibility is here broken for the first time.

All these changes are preparatory to the great re-grouping which takes place in the optic thalamus, and will form the subject of the following section.

(*To be continued.*)

An Address
ON
INDICATIONS FOR SURGICAL INTERFERENCE IN THE TREATMENT OF TUBERCULOUS JOINT DISEASE IN CHILDREN,
WITH REMARKS AS TO THE AFTER-RESULTS.

Delivered in Opening a Discussion in the Section for Diseases of Children, Royal Society of Medicine, on Dec. 15th, 1911,

BY A. H. TUBBY, M.S. LOND., F.R.C.S. ENG.,
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MR. PRESIDENT AND GENTLEMEN,—The terms of the reference are sufficiently vague to allow me to speak of the surgical treatment of tuberculous joint disease in children somewhat widely, but the time allotted compels me to be brief.

INTRODUCTORY REMARKS.

The discussion to-day has special reference to the indications for surgical interference, and the nature of the operation done. I have been asked to include in my remarks some notes on the treatment of abscesses; and, finally, the after-results will be touched upon. It has been agreed that the various forms of tuberculous spinal disease and its complications render the ground too wide to be traversed, and therefore they are excluded.

You will observe that, as befits this section of the Royal Society of Medicine, we are dealing with the disease in children. It appears to me, however, expedient to extend that age in this case to the end of the fifteenth year, as it may be said to mark the end of the very active period of growth in bone; and, certainly up to this time that structure retains the characteristics of early life and its reaction to tuberculous infection. It is to be hoped that speakers will not limit themselves to hospital and the poorer class of patients, but that they will also deal with well-to-do patients, although it is generally recognised that for the latter class operative interference is less frequently required. Time will not permit me to allude to the treatment of deformities arising from tuberculous arthritis, except in so far as they may necessitate operation.

In order to make the views quite clear which I entertain with regard to tuberculosis in childhood, I may state that in a general sense I am in entire agreement with the opinion of Augustus Wilson,[1] who has stated "that tuberculosis of joints can be considered as such only in its incipiency, and that all conditions following this are to be looked upon as avoidable sequelæ." This axiom involves the postulates that early recognition of the affection and proper treatment, followed by careful and long-continued observation, are essential to the thorough and radical cure of the disease without deformity and with the minimum loss of function.

Looking back upon my opportunities for clinical experience from 1882 onwards—experience which has been gained in the wards of two general hospitals, at the Evelina Hospital for Children, at the Royal National Orthopædic Hospital, and at the Hospital for Hip Disease, Sevenoaks—I am conscious that the conception of tuberculous arthritis has been undergoing during the last decade a radical change. Briefly put, we may say that, whereas formerly the affection was regarded simply as a joint-disease to be treated as such, we now look upon it as a loss of resistance to the invasion of tuberculosis into a patient, manifesting itself an an inflammation and degeneration of one or more joints; or, to put it more baldly, the earlier idea was—the joint first and the general condition afterwards, whilst the present conception is that of the general condition of the patient first and the joint secondly.

In adults this is true to a certain extent, but in children this remark is more apposite. If we contrast the reactions of adults and children to tuberculous bone affections we observe that the natural processes do not wall off the disease with such frequency as in adults. Painter[2] remarks: "This is apparently antagonistic to the fact that tubercle tends to become arrested more often spontaneously in children than in adults." In children, when an operation is performed, the highly vascular and cellular spaces are opened up with knife and chisel, and dissemination of infection into new and unguarded localities takes place. In fact, whilst in adults the healing of tubercle is accompanied by the formation of a barrier of dense fibrous tissue, in children the young and rapidly-growing tissues do not assume this sclerotic action. We may take it then that in children the general resistance to this disease is greater than the local warding-off power, and in adults the reverse is the case.

In addition to these pathological observations, the truth of which it is difficult to deny, there are certain factors which are responsible for the change in surgical opinion during the last decade. These factors are four in number—namely: 1. The climatic treatment of bone and joint tuberculosis. 2. The employment of Roentgen rays. 3. The improved use of the new tuberculins, and the evolution of methods designed to check and control their action. 4. The recognition of the value of supporting appliances, their wider use, and the ingenuity which has been displayed in inventing new apparatus or modifying old ones to meet various conditions of deformity or limitations of movement.

CLIMATIC TREATMENT.

1. Tuberculosis of joints should be treated by open-air methods exactly as pulmonary tubercle is, and results are obtained which are very gratifying. In the year 1902, at the suggestion of Dr. Dawson Williams, I collected statistics from some of the children's hospitals in London and embodied the results of the observations in my articles.[3] I

[1] Pennsylvania Medical Journal, January, 1906.
[2] American Journal of Orthopedic Surgery, January, 1905, p. 26.
[3] The Urban Treatment of External or Surgical Tuberculosis, Brit. Med. Jour., Feb. 21st, 1903. Is the Urban Hospital Treatment of External or Surgical Tuberculosis Justified? Practitioner, September, 1903. Also Tuberculous Cripples, in Kelynack's Tuberculosis in Infancy and Childhood, p. 188, London, 1907, Baillière and Co.; and Tuberculous Bone and Joint Disease in Childhood, its Effects on the Duration and Usefulness of Life, British Journal of Tuberculosis, July, 1907.

venture to think that these articles were instrumental in inducing the trustees of the Treloar Hospital at Alton to alter their original conception of the objects of their institution, and to admit for treatment tuberculous in preference to other kinds of cripples.

The articles which I wrote showed, first, that children with tuberculous joint disease are not fit subjects for systematic treatment in the wards of hospitals in towns and cities; and, secondly, that when treated conservatively in the country the number of operations required was much diminished, the severity of the operations was decreased, and the results were more satisfactory, in so far that more cures were obtained and the cures were more permanent.

Since these dates a great mass of material has come to hand bearing out fully the conclusions of the writer and enforcing these lessons. My opinion is strengthened by the results obtained at the Treloar Hospital and College at Alton and at the Sevenoaks Hip Hospital. Of the former institution Mr. H. J. Gauvain is the resident medical officer, and I am indebted to him for the following statements: "The great majority of patients, taken early, are discharged with good movement. The wage-earning capacity of patients is, I believe, little, if at all, impaired in early cases, provided that judicious employment is chosen for the patient."

I asked Mr. Gauvain to inform me as to the causes of death. He says: "You may be interested to hear that out of 336 cases, which have been under treatment here so far, only one death has occurred, and this case was that of a boy suffering from hip disease who developed tuberculous meningitis eight days after admission. You ask me whether I have been compelled to operate. In only one case have I operated—for a caseous abscess of the hip. ..... As for my opinion on the value of operative interference in the cases which have come under my notice, the results have so commonly been bad that it has made me very averse to operative interference in these joints."

THE EMPLOYMENT OF X RAYS.

2. We now pass on to the use of Roentgen rays. In diagnosis they are invaluable, but the photographs must be of the best possible type and so clearly focussed that all the details of the structure of bone are quite distinct. By their help we can see the beginning of the disease; we can watch its progress; we note the effects of our treatment and check and regulate our methods; and, I may add that in some resistant forms of tuberculous synovitis systematic exposure to the X rays has appeared to have some effect in producing retrogression of the disease.

In all cases I employ now the X rays systematically for the diagnosis of the disease and regulation of the treatment. As one proof of their practical value I may say that I have been astonished to find how frequently tuberculous disease is situated in the acetabulum as well as in the head of the femur. In fact, primary or associated acetabular disease exists much more frequently than is suspected.

3. As to the use of *tuberculins*, we are happy in being able to hear the opinion of Dr. A. Butler Harris on this point.

4. By the ingenuity of surgeons, who have given special attention to the subject, patients have been enabled to get up much earlier and to be treated by what may be called the ambulatory method, with all its advantages to general health, without running the risk of lighting up the disease or incurring a severe and disabling deformity.

ADVOCACY OF CONSERVATIVE TREATMENT.

It appears that I scarcely need evoke the opinion of my hearers on the treatment of very early and uncomplicated tuberculous arthritis. At any rate, the majority will agree that rest, protection of the joint, prevention of deformity, and treatment of the sanatorium type are indicated.

Tuberculous arthritis is a disease varying very much in intensity. In one case the affection is virulent and the course of the disease is acute, resulting, on the one hand, in rapid degeneration of the joint, with extension to the shaft and the development of osteomyelitis in the cancellous tissue, and on the other hand in rapid and destructive changes in the joint. In other cases the disease is comparatively mild and runs its course without any complications such as abscess, tuberculous diaphysitis, or the formation of sinuses, and the part recovers with little or no loss of function. In the early stages of the disease there is no possibility of telling which type exists, and unless we watch the progress of the disease constantly, by using the Roentgen rays and by clinical observation, and note the reaction of the patient to vaccination, we are quite unable to form an opinion as to its future course.

Some cases of tuberculosis are obstinate and refractory, due not so much to the local conditions as to what, for want of a better term, is called "loss of resistance" on the part of the patient. It is in those cases that the question arises, "Shall we interfere surgically or not?" when the improved general methods which I have indicated seem to have failed.

I say advisedly "seem to have failed," because the treatment of this affection is in any case a long business. It is often months before the inflammatory and destructive conditions subside and healing sets in, and it is usually two or three years before a joint can be regarded as functionally cured, whether it is mobile, ankylosed, or partly sound at the end of that time. So that my inclination is to persist and to persevere with climatic and conservative measures rather than to allow my hand to be forced to interfere surgically. We have, however, under the present conditions in this country, to weigh carefully the patient's opportunity of climatic and sanatorium treatment. Unfortunately, it may be said with truth, and I trust without offence, that the successful therapeusis, not only of pulmonary, but also of articular tuberculosis is largely a question of means and opportunity. Sufferers with ample resources stand a better chance of recovery and useful joints than impoverished hospital patients.

Nevertheless, it is my deliberate opinion that in children under 15 years of age—and to a less extent in adults, where other factors, such as the wage-earning capacity and the inability to obtain sufficient rest must be weighed—the less the extent to which surgical intervention is practised the better is the prospect of recovery of the affected part, of its regaining its functions, and of usefulness in life.

It may be urged that many lesions which have become quiescent in childhood light up in adult life. No doubt this is so, but we must consider two points—namely, that several years of freedom from the disease have been gained and the part has been useful during that time; also, that tuberculous arthritis in adults is more amenable to radical surgical measures than in children. In this expression of opinion I am supported by many of the most recent writers on the subject, notably by C. F. Painter,[4] J. W. Sever,[5] and Augustus Wilson.[6] The last named goes so far as to say that "we now look upon the avoidance of surgical interference as most conducive to the recovery of the patient."

These remarks, then, apply not only to the cure of the disease, but to the question of complications, such as an affection of other joints and the onset of general tuberculosis. There is reason to believe, and some surgeons think they have evidence to show (J. W. Sever[7]), that frequent curettings have been followed by implication of other joints much earlier than when the case has been left alone. And some of us have been shocked from time to time by the sudden onset of tuberculous meningitis after a very trivial operation—e.g., scraping a finger which is the site of tuberculous dactylitis. The general complication has followed on the operation so quickly and so unexpectedly that it is reasonable to regard one as having a distinct causal relationship to the other.

TREATMENT OF ABSCESS.

Bearing all these points in mind I pass on to speak more specifically of operations, and I have been asked, amongst other points, to elicit your views upon the treatment of abscess. Its existence does not necessarily involve immediate evacuation. If the pus is deeply placed, and if the patient is placed at rest in good air, the fluid contents are sometimes absorbed, and the caseous matter becomes encapsuled. If, however, in spite of these measures, the abscess increases in size, its sac should neither be allowed to become adherent to the skin nor to open spontaneously, as an opening often forms in an undesirable position and is liable to septic infection.

As a general rule, I am strongly in favour of that form of treatment introduced by Ménard at Berck-sur-Mer and rapidly

[4] American Journal of Orthopedic Surgery, vol. iii., July, 1905, No. 1, p. 24 *et seq.*

[5] Journal of the American Medical Association, 1910, Dec. 17th, p. 2128.

[6] Pennsylvania Medical Journal, January, 1906.

[7] Loc. sup. cit.

coming into favour in this country, owing to the advocacy of M. Jacques Calvé and Mr. Gauvain. The details are fully given in THE LANCET,[8] and the article is worthy of the most careful perusal.

When pus continually re-forms it is generally due to the extension of bone disease or to loose sequestra, and the cause can be ascertained by means of Roentgen rays. Then I advocate opening the abscess, invariably by more than one incision so as to permit free access to the cavity and allow the pockets to empty. The fluid contents and the sequestra are removed without any violent scraping of the sac wall, which should be merely rubbed with a soft swab. Pure carbolic is then applied and left in for about a minute and washed out with absolute alcohol. The cavity is dried and closed immediately so as to obtain primary union. It frequently happens that a little fluid subsequently accumulates beneath one of the wounds. A sterilised probe is then inserted, the fluid pressed out, and the wound allowed to heal.

I venture to say that drainage-tubes are an abomination and a source of grave danger, as they involve the risk of secondary infection; and in the opinion of careful observers the activity of the tubercle bacillus is accentuated by the presence of pus-producing organisms. Further, there are grounds for saying that the onset of lardaceous disease is often determined by mixed infection.

The treatment of sinuses is always a matter of great difficulty. In 1908 injections of bismuth-paste were introduced, but as some patients were poisoned paraffin wax has been substituted. Its efficacy and its mode of action are still *sub judice*.

RADICAL OPERATIONS.

Passing on now to the question of more extensive operations for tuberculous arthritis, "I do not believe that there has ever been a surgeon who has had to treat few or many such cases who has not searched for a radical plan of procedure, for some way of shortening the treatment and lessening the destructive action of the infection."[9] "Occasionally we become enthusiastic temporarily over attempts to extirpate tuberculous foci in childhood. These radical operations, although commendable and to casual consideration reasonable, are not attended with such results as to lead the surgeon to persist."[10]

What are the tests of the success of operation? They are complete eradication of the disease from the parts and retention of perfect function. We must admit that nearly all operations fall short of these ideals. Too often cure by operation means mutilation of the part and sacrifice of its functions. This remark may require modification when we deal with what may be termed focal or para-articular lesions.

However, let us discuss what conditions call for erasion and excision of the joints of the lower extremity. As to the formal excision of joints, formerly done in great numbers, there is ample justification for the criticism that there is scarcely any operation which looks so promising and satisfactory on the operating table and proves so disappointing afterwards. The disease is not cured because the infection is either too extensive or is not entirely removeable; function is impaired or lost, and the patient is crippled by the deformity.

EXCISION OF HIP-JOINT.

As to excision of the hip joint, it has its opponents and its advocates. Of the former, Professor Howard Marsh is perhaps the chief in this country and has been most consistent; and of the latter, Mr. G. A. Wright is prominent. I feel myself compelled to say that the opponents are more numerous than the advocates, and their opinions appear to me more weighty and convincing, their prognostications as to the final result more exact.

If we refer to a recent text-book[11] we find the matter discussed *in extenso*, and it appears that excisions may be done only in those cases where the difficulty in obtaining treatment on those lines which are known to give the best results—namely, by prolonged rest for years in special institutions [such as the country branch of the Alexandra Hospital, the Sevenoaks Hip Hospital, the Treloar Hospital at Alton, and the Liverpool County Hospital[12]]—is found to be insuperable.

An excision of the hip is often an imperfect operation because of the involvement of the acetabulum and pelvis by the disease in such a way as to render its complete removal a matter of grave danger and often of impossibility. If there are points which have been impressed upon me by systematic examination by X rays of hip-joint cases coming under my notice, they are that primary disease of the acetabulum, formerly thought to be very rare, is not so; and that the number of cases of simultaneous involvement of both the femur and acetabulum is much greater than is thought. I begin to suspect that the total of the two conditions will prove to be not far short of 50 per cent. of the total number of cases.

One important point should always be kept in mind before performing the radical operation for tuberculous arthritis. We should satisfy ourselves previously that we are able to remove the diseased area *in toto* without destroying the functions of the part and without endangering our patient's life; and I ask, Has this always been possible when formal excision has been decided upon? An excision of the hip often proves to be an imperfect operation because the whole of the diseased part cannot be removed.

The final results of the operation have been ably set forth by Mr. Ralph Thompson.[13] He says:—

> Of 200 cases in which the hip-joint has been excised, 70 may expect to be the subjects of progressive disease, and of these 30 may be expected to die from continuation and spread of the disease; 55 will rank as partial failures, in that in them sinuses persist; 70 cases may look forward to a complete recovery; 2 cases, however, among these will have a flail-joint. The best result, a useful joint with free mobility and without sinuses, will fall to the lot of 25 of 200 people, or 1 in 8 of those operated upon.

Mr. Thompson has arrived at these conclusions from a study of 40 cases. In 2 cases more than 10 years, in 14 cases more than 5 years, in 4 cases more than 3 years, in 12 cases more than 1 year, and in 5 cases less than a year had intervened between the operation and the date of report.

I question if these results are better than those obtained by rest and splints. To some surgeons the presence of a tuberculous focus may be a temptation to operate. I suggest that it is better to deal with the conditions as they arise and try prolonged rest in the best surroundings. If abscesses appear, deal with them on the above lines. If sequestra form, localise them by means of X rays and remove them.

OPERATIONS ON THE KNEE-JOINT.

Of the two operations practised upon the knee-joint I regard erasion as much over-rated. If its objects are to eradicate the disease and to obtain movement in the joint afterwards, then I am prepared to affirm that, even in the event of cure of the disease, fibrous ankylosis and loss of movement follow, or else that the degree of movement is so small as to be useless. Frequently, too, the disease reappears, partly from the irritation to which the part is subjected in its deformed position; and, even if it does not do so, the tibia is so often displaced backwards and outwards, and the knee-joint is so bent as to render the limb an encumbrance rather than a help.

The less the operation partakes of the nature of an arthrotomy and the more it partakes of an erasion, the less useful is the limb afterwards. I have performed limited arthrotomy of the knee in cases of localised tuberculosis.

In one instance a tuberculous mass of the size of a pigeon's egg had formed in the infra-patellar pouch on the inner side, leaving the movements of the knee-joint entirely free. I dissected the mass from the sub-synovial tissue without opening the joint and the patient had a comparatively useful knee for three years. Then extensive involvement of the joint set in and excision was done.

The safest course in tuberculosis of the knee-joint is to give a long and patient trial to conservative treatment, and if this fails to give up all hopes of a moveable joint and do a formal excision, having regard to the epiphysial lines, and endeavour to secure sound bony ankylosis and a straight limb.

ANKLE AND FOOT.

If we pass on to the ankle and foot, these parts appear to present unusual facilities for operative treatment on tuberculous foci, and in many cases the results have been strikingly successful, especially when a single bone in the foot has been

[8] THE LANCET, March 5th, 1910, p. 633.
[9] H. L. Sherman: California State Journal of Medicine, March, 1907.
[10] C. F. Painter: American Journal of Orthopedic Surgery, July, 1905, p. 104.
[11] Jacobson and Rowlands: The Operations of Surgery, fifth edition.
[12] The words in brackets are inserted by the writer.
[13] Guy's Hospital Reports, 1905, vol. lxv.

affected, or there is a localised focus in the tibia or fibula. We have, however, to remember that when we come to operate the appearances seen by the X rays are always less severe than those we find on actual inspection, for the synovial membrane is frequently found to be extensively invaded.

Even in dealing with the ankle and foot, the statistics which are available show the best results are obtained by rest and conservative treatment. James Warren Sever[14] has given us comparative statistics on these points. 101 cases of disease of the ankle and tarsus were operated upon, including 45 excisions of the astragalus, 14 removals of the lower end of the fibula, and 11 removals of the lower end of the tibia. Good movement of the part followed in 29, slight in 22, none in 47. In only 7 was there no subsequent deformity. In 65 thickening remained about the malleoli; in 29 some definite distortion of the foot followed. The average duration of the disease from its onset, in the operative cases, until treatment was discontinued was 19·8 months—and of treatment itself 10·1 months.

For comparison, results in 88 non-operative cases are tabulated. Motion was good in 32, slight in 23, and none in 33. Deformity was entirely absent in 4, thickening was present in 63, and distortion was present in 21. The average duration of disease until cessation of treatment was 16·1 months in 99 cases; the average duration of treatment itself was 6·8 months, giving an average in favour of the non-operative series of 3·3 months from the beginning of the treatment until it was no longer necessary. The figures show that "there was a distinct gain in time, also in the function and lack of deformity of the foot in the non-operative series."

JOINTS OF THE UPPER EXTREMITY.

The joints of the upper extremity present problems differing from those of the lower. Whereas the chief functions of the lower limbs are stability and weight-carrying, those of the upper extremity consist of highly educated movements, and the importance of preserving them is undisputed. Operative interference, if it is likely to have the desired object, may therefore be considered at an earlier date than in the lower extremity. In children, however, erasion frequently proves to be better than a formal incision when conservative treatment has failed.

In the case of the shoulder-joint there is, however, an exception to be made. Other surgeons have noted the fact as well as myself that tuberculous arthritis of the shoulder-joint is frequently followed by pulmonary phthisis. In one case I noted the sequence of tuberculous arthritis of the shoulder: a dry apical pleurisy and phthisis, as if direct lymphatic extension had taken place. This observation may lead the surgeon to attempt eradication of the disease at the shoulder-joint at an earlier stage than would otherwise be the case.

FOCAL EXTRA-ARTICULAR LESIONS.

There are two points on which discussion may be profitably provoked—namely, the question of focal, extra- or para-articular lesions, such as are found in the great trochanter in children, and the treatment of tuberculous dactylitis.

As to the former, the point which advocates of operation should bear in mind is that there should be a sufficiency—as shown by X rays—of healthy bone between the lesion and the limits of the neighbouring joint. If there is not, any opening up of the vascular and cellular spaces often leads to arthritis; and of the comparatively few cases of this nature on which I have operated I may say that the disappointments and failure to save the neighbouring joint have exceeded the successes in the proportion of three to one.

TUBERCULOUS DACTYLITIS.

Tuberculous dactylitis has been shown by Ménard and others to be an exceedingly formidable type of disease. Disease of the spine more frequently complicates it than does disease of the larger joints, and it is responsible for an undue ratio of generalised tuberculosis.

Conservative and climatic measures should be carried out from the first, and if these do not give an early and satisfactory result amputation of the finger is desirable. The difficulty is to deal with these cases when the metacarpal bones are affected, with implication of the neighbouring tendon-sheaths. It is an obstinate and refractory lesion, but the same remarks apply to this operation as to operation for any other form of tuberculosis—namely, when conservative treatment has failed, and if an operation is done, let it be thorough.

[14] Journal of the American Medical Association, Dec. 16th, 1910, pp. 2128-33.

SUMMARY.

To sum up, the objects of every form of treatment of tuberculous arthritis must be: (1) To eradicate the disease; (2) to preserve the functions of the part; and the question is whether these results are more frequently obtained by climatic and conservative measures or by so-called radical operations. It appears to me that the balance of experience gained in treatment during the last decade shows that unquestionably conservative treatment is the better in childhood. Time is saved, the resultant deformity is diminished, and there is less risk of generalised tuberculosis when the treatment is non-operative.

THREE CASES OF ERYTHRÆMIA (POLYCYTHÆMIA), IN ONE OF WHICH THE TOTAL VOLUME OF THE BLOOD WAS ESTIMATED.

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I HAVE recently seen the three following examples of this disease, known also as Osler's disease, Vaquez's disease, and splenomegalic polycythæmia, and because they each show features of interest they may be considered worthy of record. Unfortunately, they do not in any way indicate why the blood should hypertrophy to the extraordinary extent that it does in this condition. In none of them could any cause for the polycythæmia be discovered, and it was clear from the history of the first patient that the disease had begun only three years before I saw him, and then his attention had been called to it by his becoming dusky; in the other two the diagnosis was only reached by a routine examination of the blood of patients whose spleens were enlarged, for neither of them was cyanotic, and thus they illustrate that the disease should not be called "splenomegalic polycythæmia with cyanosis," as is sometimes done.

The noteworthy points in the first case were that the splanchnic vessels were apparently very distended, for the patient had much indigestion, was frequently sick, and almost certainly had hæmatemesis. This and the oozing of blood from the gums no doubt gave some temporary relief, as venesection may. The appearance of many little patches of dilated venules on various parts of the skin and the dilated vessels of the conjunctiva may also be regarded as evidence of the extreme distension of his veins, which, too, was well shown on ophthalmoscopic examination. Other observers have noticed the appearance of the fundus oculi. Judging by this case, I should say it would always be easy to recognise. It would be interesting to know if the other two patients will become cyanotic later. In the first patient the urine contained a little albumin and a few casts and a few red cells, this harmonising with the hæmatemesis and oozing from the gums. These characters of the urine might easily lead to an incorrect diagnosis of chronic nephritis; indeed, this had been the diagnosis in this case before the blood was examined, but the arteries, the heart, and the blood pressure were normal—a remarkable fact considering the enormous volume of blood, for the determination of which we have to thank Dr. C Gordon Douglas. The volume was three times the normal and the red cells were double the normal per cubic millimetre, which means that the patient had in his blood six times the normal number of red cells, and the total amount of hæmoglobin was about four times the normal. The number of white cells per cubic millimetre was half as much again as normal (the increase, as usual, being in the polymorphonuclear cells, which formed 84 per cent. of the total white cells), so that the total increase of white cells was about four times the normal. Such blood must nearly have reached a volume and density which would render the circulation very difficult. It will be noticed that the specific gravity was very considerably above the normal—viz., 1076. Considering the very high oxygen capacity of the blood a complete metabolism experiment extending over a long period

ought to be carried out on a case of erythræmia. It is noteworthy that the patients in Cases 1 and 2 lost weight—there was no information as to weight in the third case, which was of mild character, and this may have been due to disordered metabolism, but then the indigestion associated with the overful splanchnic vessels has to be borne in mind. None of the patients were excessively hungry.

The great point of interest about the second case is that an extreme hypertrophy of an accessory spleen, combined with a moderate enlargement of the spleen, led to the formation of an abdominal tumour of such a shape that none who saw the patient thought the tumour could be a spleen. The excessive oozing after operation indicates an overful vascular system, but by no persuasion could we get the patient to submit to examination of her blood so as to estimate the total quantity. The last count showed double the normal number of red cells and four times the normal number of white cells per cubic millimetre. Probably there is not a great increase of the volume of the blood in the case, for the patient is not cyanotic.

The third is not a severe case. It is of interest that the patient had had an exploratory laparotomy, so presumably at some period of her illness there was some doubt as to whether the abdominal tumour was a spleen. She is probably progressing slowly, for the red cells are but 8,000,000 per cubic millimetre and the white cells are not yet increased, nevertheless the spleen is larger than in either of the other two cases.

CASE 1.—The patient, who lived chiefly in one of our colonies, came to England for a few weeks on business. He was 42 years old. He had always been absolutely well till three years ago when he began to suffer from indigestion and his face began to get a deep colour, so that some of his friends chaffingly said he had been too convivial; others that he had taken too long a holiday in the sun. Neither of these suggestions was true. During the last three years the indigestion has increased, and several little groups of dilated venules (telangiectasis) have appeared in various parts of the skin. The patient has lost a stone in weight and has been frequently sick, and from his description of the vomit I think there is little doubt that it contained blood, but he was not sick during his stay in this country. He is also liable to bleed considerably from his gums. Dr. C. H. Mollison, of Melbourne, found 10,700,000 red cells. When I saw the patient he had a full-blooded livid look, especially noticeable on the face, but evident all over him. The heart and lungs were healthy; the spleen reached to the umbilicus; the liver was just palpable; there were no enlarged lymphatic glands; the gums were bleeding, and the tongue was clean but livid. The urine had a specific gravity of 1015; there was no sugar, but a very small amount of albumin. The slight deposit contained a few hyaline and finely granular casts, a small number of red cells, and some leucocytes; there were no crystals. An examination of the blood showed: red cells, 9,800,000; no poikilocytosis; no polychromasia; no nucleated or other abnormal cells; white cells, 15,300; small lymphocytes, 7 per cent.; large lymphocytes, 7 per cent., polymorphonuclears, 84 per cent.; eosinophiles, 2 per cent.; hæmoglobin, 131 per cent.; colour index, 0·67; specific gravity, 1076; blood pressure, 130. The eyes were blood-shot; there was a little conjunctivitis. The ophthalmoscopic appearances were striking, for the veins were obviously overful and the blood in them was of a very dark-blue reddish tint. It seemed to me the appearance was such that I should recognise it again as characteristic of the disease, and in this my ophthalmic colleague, Mr. H. L. Eason, agreed with me. Fortunately the patient was interested in his case and he willingly made a journey to the physiological laboratory at Oxford, where Dr. Gordon Douglas, to whom I am much indebted, kindly estimated the total volume of blood by the Haldane and Lorrain Smith method, with the following result: Weight of patient in clothes, 126 lb.; naked, approximately 114 lb., or 51·8 kilos. Hæmoglobin percentage (Haldane scale) = 140, equivalent to an oxygen capacity of 25·9 c.c. per 100 c.c. of blood. Amount of CO given at standard temperature and pressure = 220 c.c., giving a percentage saturation in the blood of 8·4. Total capacity of the blood for oxygen (muscle hæmoglobin counted as if it were blood hæmoglobin) = 2620 c.c. Total volume of blood calculated from the total and percentage oxygen capacities = 10,200 c.c. Oxygen capacity per 100 grms. body weight = 5·06 c.c. Blood volume per 100 grms. body weight = 19·7 c.c. Red cells per c.m. = 9,720,000. For comparison with this:—Douglas (average during several months): weight, 61·5 kilos.; red cells, 4,890,000; hæmoglobin, 98·8 per cent. = 18·3 per cent. oxygen capacity. Total oxygen capacity = 830 c.c. = 1·35 c.c. per 100 grms. body weight. Blood volume = 4566 c.c. = 7·43 c.c. per 100 grms. body weight. Haldane (average during several months): weight, 79·5 kilos.; red cells, 4,670,000; hæmoglobin, 100·6 per cent. = 18·6 per cent. oxygen capacity. Total oxygen capacity = 902 c.c. = 1·13 c.c. per 100 grms. body weight. Blood volume = 4821 c.c. = 6·06 c.c. per 100 grms. body weight. It will be seen that the patient had roughly four times the normal amount of hæmoglobin and three times the normal amount of blood for a man of his weight.

CASE 2.—An unmarried woman, aged 57. She said she had in the past suffered from neuritis and erythema. She looked a trifle pale and drawn and had lost 2 st. in weight within a comparatively short time. She now weighed 9 st. 0¼ lb. Her height was 5 ft. 5 in. She had complained of much severe irregular abdominal pain and some flushing of the hands. A large very irregular tumour could be felt in the abdomen at the left and upper part. At no time had it felt at all like a spleen. Several consultations had been held, and as it was extremely difficult to determine the nature of the tumour or even the organ in which it originated an exploratory laparotomy was decided upon and I was present at the operation. The tumour felt was found to be a moderately large spleen, the notch of which was just under the ribs and could not therefore have been felt through the abdominal wall; close to the anterior margin of the spleen was an accessory spleen, disc-like and extending forwards to the middle line. It was considerably enlarged, being rather larger than a five-shilling piece. It was this combination of enlarged spleen and enlarged accessory spleen that gave an abdominal tumour of such a shape that none of the medical men who saw the patient before operation thought it was a spleen, although the possibility had been remembered. There was some capsulitis both of the spleen and the accessory spleen. There was an exceptional amount of oozing of blood for 72 hours after the operation on August 27th, 1911. A few days after the operation a blood count made by Dr. Alfred C. Coles showed: red cells, 7,375,000; white cells, 43,400; hæmoglobin, 90 per cent.; colour index, 0·6. The red cells were normal in appearance. A second count three weeks later (Sept. 18) showed: red cells, 7,880,000; white cells, 27,400; hæmoglobin, 95 per cent. The patient felt much better after the operation and gained weight. Dr. Coles did a third blood count on Dec. 14th, 1911, and found red cells, 9,546,600; white cells, 46,350; hæmoglobin, 117 per cent.; colour index, 0·66. He reports as a result of an examination on that day: "No cyanosis; there was some dilatation of vessels, but not enough to suggest the condition. The spleen now reached 4¼ in. below costal margin."

CASE 3.—The patient, aged 28, was admitted into Miriam Ward, Guy's Hospital, under my care on Nov. 13th, 1911, and subsequently was transferred to Mary Ward. She had been quite healthy until three years ago, when she first noticed pain and discomfort in the left side of the abdomen, sufficient to prevent her from doing her housework. Eighteen months ago the abdomen was opened at another hospital and the tumour which had been previously felt was found to be an enlarged spleen. As the abdominal discomfort continued she came into Guy's Hospital. There was nothing abnormal in her appearance—in fact, all that could be detected wrong after a very complete examination was that her spleen, which was easy to feel, reached down to 2 inches below the level of the umbilicus and forward to within an inch from the umbilicus. The enlargement of the spleen led us to examine the blood with the following result: red cells, 8,600,000; white cells, 7000; polymorphs, 62 per cent.; large lymphocytes, 24 per cent.; small lymphocytes, 12 per cent.; eosinophiles, 2 per cent.; hæmoglobin, 100 per cent. A second blood count done a few days later gave red cells 8,000,000 and white cells the same as before. The blood pressure was 134 millimetres of mercury. Examination of the optic disc showed nothing abnormal. The temperature and pulse were normal for the ten days during which the patient was in the hospital. There was no evidence of syphilis and nothing of importance in the family or personal history. Unfortunately

no persuasion that we could bring on her could make her yield to our request that we might take the total volume of her blood.

Wimpole-street, W.

SOME POINTS IN THE DIAGNOSIS AND TREATMENT OF CHRONIC DUODENAL ULCER.

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IN THE LANCET in 1910[1] there appeared the paper with which I opened the discussion at the Royal Society of Medicine upon Duodenal Ulcer. In the time that has passed since then certain features of this disease, in respect both of diagnosis and of treatment, have been made clearer and their relative values more accurately determined. In so far as the diagnosis of the disease is concerned the statement remains true, after all the arsenal of argument delivered against it, that it is upon the clinical history of the case we chiefly rely for accuracy. The anamnesis which was fully recited in the paper to which I refer, if considered in *all* its details, is so characteristic that a diagnosis of duodenal ulcer based solely upon it will very rarely prove inaccurate when the parts are examined at the time of operation. I emphasised also the fact that the duodenal ulcer, whose presence had been predicted upon the strength of the history alone, could be demonstrated to the conviction of all; that the ulcer was a real and not a fanciful thing. Perhaps the chief criticism to which that paper was subjected, and certainly that which had been most confidently expected, was that the picture of the disease drawn therein did not differ notably from that which had been recognised by generations of physicians as due to "acid gastritis" or "hyperchlorhydria."

When first we began to disentangle the authentic symptoms of duodenal ulcer, and by degrees to recognise clearly the well-defined clinical picture of this disease, I was struck with the similarity, indeed in some respects the identity, of the symptoms recited to me by the patients to those described by the most authoritative writers on medicine as due to "hyperchlorhydria." And when repeatedly I found that cases diagnosed by physicians of the first rank, well versed in the literature and of much practical experience, as "hyperchlorhydria" were in fact cases of duodenal ulcer, and would so be demonstrated upon the operation table, I felt entitled to claim that in the diagnosis of such cases the physician walked by faith and the surgeon by sight. And when, further, it was found that in a series of such cases an excess of free HCl was not present in the majority, it became quite certain that there had been confusion not only in terms but in the whole conception of the cases. A genuine organic disease was miscalled "functional." My own experience of the relationship of hyperacidity to duodenal ulcer, in all the phases in which we meet it upon the operation table, from early active ulceration to the final cicatricial stenosis, is roughly this: that in about 40 per cent. of the cases free HCl is in excess, in 40 per cent. it is approximately normal, and in 20 per cent. it is below the normal. It may be that there is a geographical factor in the different experiences of different authors in their examinations of the amount of free HCl. Dr. A. F. Hertz has drawn my attention to the fact that at the discussion on the treatment of gastric ulcer at the German Congress for Internal Medicine held in Wiesbaden in 1909, Lenhartz, of Hamburg, von Müller, of Munich, and von Krehl, of Heidelberg, laid stress upon the differences in the results of analysis of the gastric juice in patients suffering from gastric ulcer in different localities. In Munich, for example, hyperacidity is exceptional, and in at least 20 per cent. of the cases there is hypochlorhydria. In North Germany, on the other hand, hyperchlorhydria is almost constantly present in gastric ulcer. In France, or at any rate in Paris, hyperchlorhydria appears to be almost constantly present in gastric ulcer. In this discussion, however, the possibility, indeed the strong probability, that the diagnosis in many cases was erroneous cannot be ignored. The work of the surgeon has shown how very difficult the accurate diagnosis of gastric ulcer always is.

[1] THE LANCET, Jan. 1st (p. 20) and 15th (p. 173), 1910.

Dr. G. A. Gibson[2] mentions a series of cases of duodenal ulcer proved by operation in which he found that the total acidity varied from 0·01 per cent. to 0·26 per cent. The amount of free acid varied between 0·02 (very small) and 0·18 (extremely high); so that Dr. Gibson's experience shows that "in undoubted duodenal ulcer the condition of acidity in the stomach varies within wide limits."

Dr. F. Craven Moore, who has devoted a great deal of attention to the chemistry of gastric and duodenal disorders, considers it essential that no less than three separate examinations of the stomach contents should be made at intervals of a few days, and that the averages of these three should alone be considered. If his contention is justified, as it probably is, then the work of many investigators must be set aside. Dr. Craven Moore has examined the stomach contents in a series of cases in which duodenal or gastric ulcers were actually demonstrated upon the operation table, and in every case of the former disease an excess of free HCl was found.

It is now well known that hyperacidity may be present when symptoms quite different from those described in many of the text-books are elicited in the history, or even when no gastric symptoms whatever are present. Hyperchlorhydria is found, fleetingly, in cases of cholelithiasis; it is present in cases of gastric ulcer, of colitis, of tuberculous disease of the intestine or of the mesenteric glands, and of appendicitis. H. J. Paterson, who has consistently and closely studied the gastric chemistry in cases requiring surgical treatment, writes that he has "operated upon nearly 50 cases of hyperchlorhydria, and in every one of them there was an organic lesion either of the stomach, duodenum, gall-bladder, or appendix."[3]

I have no doubt that the different disclosures as to the quantity of free or active HCl in the stomach contents related by various observers may be in part due to the different stages of the disease in which the examinations are conducted. If the ulcer is active, the patient being in the fury of one of his "attacks," free HCl is probably present in excess in the majority of the cases. If the "attack" is over, or if the symptoms the patient presents are those of a stenosis which has at last developed at the site of a chronic ulcer, then the free HCl may be diminished or be absent.

The whole question may, I think, be summed up in this way. Hyperchlorhydria, a term which has been debased and shorn of its original significance, should not be used in a clinical sense, but should be held strictly to indicate the excess of active hydrochloric acid in the stomach contents.[4] Hyperchlorhydria is present in most cases of duodenal ulcer during the active stage of ulceration. There may be hypochlorhydria in cases of duodenal stenosis; in the intervals between "attacks"; or, rarely, in the acute phases of ulceration. There are possibly geographical differences in the frequency and severity of hyperchlorhydria in cases both of duodenal and of gastric ulcer. Hyperchlorhydria is present in other diseases, notably cholelithiasis and appendicitis, and its presence probably explains the mimicry of the symptoms of duodenal ulcer by these various diseases. The persistent presence of an excess of active hydrochloric acid in the stomach contents is indicative of an organic rather than a functional disorder.

During the last two years the majority of my cases of duodenal ulcer have been examined by the X rays after the administration of a meal of bismuth, with milk or bread and milk. The results which Dr. L. A. Rowden has obtained have been interesting. As a rule, in uncomplicated cases of duodenal ulcer—that is, in cases where obstruction has not yet developed—a most striking spectacle is afforded by the greatly increased activity of the stomach. Food begins to pass into the duodenum at once, and continues to pass with greater rapidity than in the normal condition. By the time the pain begins to appear the stomach is nearly empty, and most of the bismuth has left the duodenum through which it shoots rapidly, and can be seen in the small intestine. The muscular activity of the pyloric portion of the stomach is exalted. In a few cases a local arrest of the bismuth in the first portion of the duodenum has led Dr. Rowden correctly to predict the presence of a pouch caused by the distorted contraction of an ulcer, in the manner first described by Perry and Shaw. In very few cases there has been some delay in the emptying of the

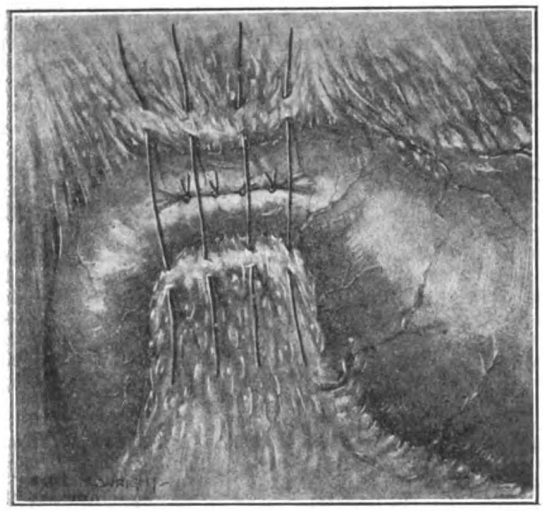
[2] Edinburgh Medical Journal, 1911, vol. vi., p. 325.
[3] Proceedings of the Royal Society of Medicine, 1910, vol. iii., p. 108.
[4] See Willcox: Quarterly Journal of Medicine, 1909, vol. iii., p. 9.

duodenum. I am not prepared to say that this condition of excitable and vigorous peristaltic movement in the pyloric antrum is characteristic of duodenul ulcer, but there is no doubt that it is almost constantly present. Further inquiry is needed, however, to discover what the activities of the stomach are in those examples of disease of the mid-gut in which its quick sympathies are aroused. This "hypertonic" condition of the stomach had been previously recognised by Dr. Hertz [5] and Dr. A. E. Barclay.[6]

In order to obtain some idea of the frequency of the passage of occult blood in cases of duodenal ulcer I had 20 cases in succession examined during the course of the year 1911. In all a duodenal ulcer was diagnosed, in all one or more ulcers or large scars were found at the time of the operation. The fæces were examined in every case by Dr. M. J. Stewart. In 10 cases blood was found in the fæces; in 2 of these it was plainly visible to the naked eye. In 10 cases it was reported that no blood was present; in 3 of these a history of melæna was given by the patient or his medical man. It is probable, however, that in cases of active ulceration in the duodenum a daily examination of the stools would reveal the frequent, if not constant, presence of blood. Dr. Craven Moore has found occult blood in 100 per cent. of his personal cases.

The diagnosis of duodenal ulcer, therefore, depends upon, first and foremost (indeed almost exclusively), the anamnesis. The history, set forth in detail in my former paper, enables a diagnosis to be made with a risk of error which, when tested by the operation, is found to be extremely small. Secondly, the discovery during the stage of active ulceration, during

FIG. 1.



Showing a duodenal ulcer infolded by sutures which are tied and cut short. The four long sutures (or ligatures) when tied draw the omenta over the duodenum and completely cover it.

the "attacks" that is, of an increased secretion of free HCl. Thirdly, the striking and possibly characteristic picture given upon X ray examination after a bismuth meal. The stomach, in the presence of active ulceration in the duodenum, seems to have an enhanced activity in respect both of its secretory and of its motor functions. Fourthly, the discovery of occult blood in the fæces during the stage of active ulceration, if daily examinations of the fæces are made. In the later stages, of course, the appearances due to slight or severe stenosis may be presented. The physical signs elicited upon an examination of the abdomen are only of the slightest value until such obstruction has developed.

So far as the surgical treatment of chronic duodenal ulcer is concerned, there can be no doubt that the only operation appropriate for the great majority of the cases is gastro-enterostomy. In 12 cases of solitary ulcer I have performed excision only; all the patients have remained perfectly well since the operation. In the remaining cases (361 in number) I have performed the short-circuiting operation. The anastomosis is made upon the posterior surface of the stomach and the jejunum is applied in the vertical direction. The after-histories of all the cases operated upon to the end of 1910, prepared by Mr. Harold Collinson, will soon appear in detail in the second edition of my book "Duodenal Ulcer." They show that the immediate mortality is small, about 1·3 per cent., and that the late results leave little to be desired. The experience of many surgeons proves, however, that gastro-enterostomy alone is not enough to make certain of complete immunity from disaster. Both perforation and hæmorrhage have occurred many weeks or months after the apparently successful performance of this operation, and have proved fatal. I consider, therefore, that a local treatment of the ulcer is essential, and this, I believe, is best carried out by the infolding of the ulcer in precisely the same manner as would be adopted if the ulcer had perforated. A few Lembert sutures taken vertically, or transversely, from one side of the ulcer to the other cause the ulcer to be buried when they are tightened. It is desirable that the stitches should under-run any conspicuous vessels leading to the ulcer, so that the circulation through them is checked. After this has been done I now always cover the duodenum by the aid of a few ligatures or stitches, taking on the one hand the gastro-hepatic omentum and on the other the gastro-colic omentum in such manner as to fold these structures over the bowel, and so to form a secure investment and protection for it (see Fig. 1).

It is essential in all cases of duodenal and gastric ulcer, when the condition of the patient warrants it, that the appendix should be examined. The frequency with which it is grossly diseased is astonishing. To illustrate this frequency and the degree of the changes which are found I have asked Mr. L. R. Braithwaite to reproduce for me the drawings which he made from the first cases we operated upon together in the year 1911 (Fig. 2). The appendix was examined and removed 12 times in 14 consecutive patients. In the remaining two cases the patient was so ill that I was unwilling to add any risk, however trivial, to that which we were compelled to run. This period and this number were selected quite arbitrarily, without any thought of what the result might be. Mr. Braithwaite, who helped me with the operations, drew the exact conditions found within a few minutes of the removal of the appendix, and his drawings are exactly reproduced here. The appendix shows some evidence of disease in every case, and in three the little tube was found to be divided into two parts entirely separate from one another. This condition of complete, or almost complete, severance of the appendix is one which appears to be unknown; in one case I found the separation to be about 1½ inches. It is important to remember the possibility of this division, more especially in those cases when the appendix seems unusually short. We examine and remove the appendix in, approximately, 9 out of 10 of all cases. In 80 per cent. of those removed there are evidences of long-standing and advanced disease.

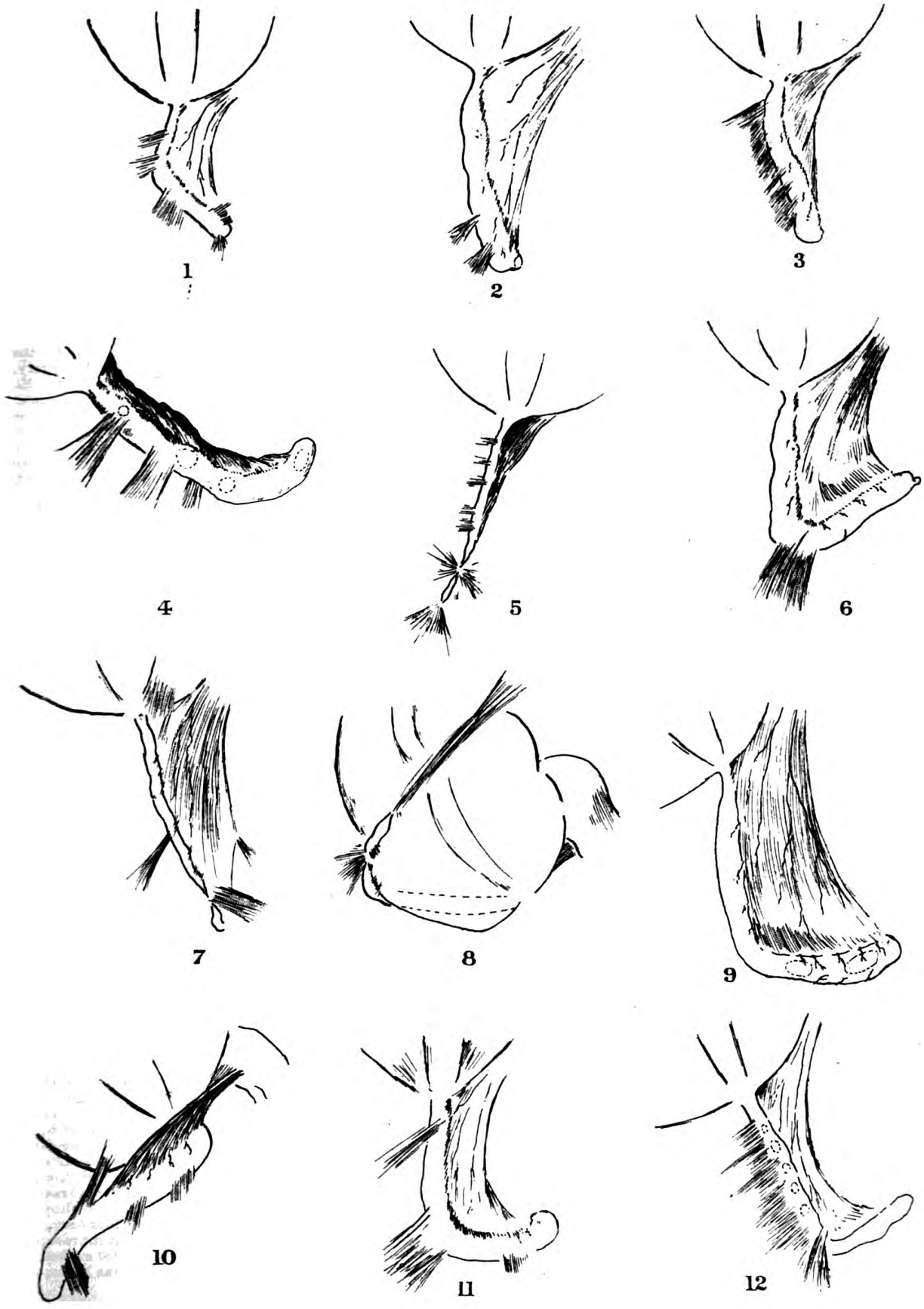
I have long held the view that the diseases of the stomach, duodenum, and gall-bladder with which the surgeon deals are not primary but secondary. They are the result, in my opinion, of an infection or of a toxæmia which has its origin for the most part in some abdominal organ. The experimental work of Turck, of Wilkie, and others strongly supports this view, as does also the knowledge we have of the development of acute ulceration of the duodenum in cases of burns, uræmia, pemphigus, erysipelas, operations upon the genito-urinary organs, and many other intensely infective conditions. The evidence has seemed to me to be strongly in favour of supposing that the source of infection in many of the cases of chronic ulcer is in the appendix; in some it is in the small

[5] The Sensibility of the Alimentary Canal, 1911, p. 59.
[6] Archives of the Röntgen Ray, 1910, p. 123.

DESCRIPTION OF FIG. 2.

Drawings of the appendix *in situ* in 12 out of 14 consecutive cases operated upon for gastric or duodenal ulcer at the beginning of 1911. All, except No. 9, show extensive adhesions. No. 9 was markedly congested in its terminal inch and a half and contained two solid bodies in this part. Nos. 4 and 12 contained many solid bodies. Nos. 5, 7, and 8 are most interesting; in these the appendix is divided by fibrous bands into two distinct and separate pieces. Nos. 6 and 12 show diverticula. In all, except No. 7, there was a duodenal ulcer present; in No. 7 the ulcer was on the lesser curvature of the stomach, and in Nos. 8 and 11 there were both duodenal and gastric ulcers. Lane's ileal kink was not present in any case. The dotted circles represent foreign bodies. (Drawn by Mr. L. R. Braithwaite.)

FIG. 2.



intestine, in some in the large, in some in the pelvic organs of the female, in some in parts outside the abdomen. A routine examination of the abdomen should follow the direct dealing with the stomach in all cases of duodenal ulcer, if the patient's condition permits this to be done with safety. It is remarkable with what frequency one then discovers a serious lesion in the appendix. I therefore make it a practice, with few exceptions, to examine and remove the appendix in all cases of gastric and duodenal ulcer and of gall-stones.

In a very small proportion of the cases the kink in the lower end of the ileum described by Arbuthnot Lane is found. It is generally not of much obvious importance in so far as the impediment to the onward passage of intestinal contents is concerned. But in all cases it is best to divide it, and by a few stitches, or by the smearing over of sterilised vaseline, to endeavour to prevent its re-formation. It is certain that in my earlier cases I overlooked the presence of "Lane's kink" in some instances, for it is only recently that I have made invariable search for it. In the last 87 cases of duodenal ulcer it was present four times. In about one-third of my cases a long meso-colic band, or some slender adhesion, is found attaching the jejunum to the under surface of the meso-colon. The purpose of the ligament of Treitz is surely to allow a very mobile portion of the intestine continuous with an absolutely fixed portion, so to move from side to side, in any direction, that no kink or obstruction is produced at the point of junction. It is extremely rare to find in cases of duodenal ulcer any evidence, either on X ray examination or upon the operation table, of an obstruction of any grade at the duodeno-jejunal flexure.

The importance of recognising the associated if not causal chronic inflammation of the appendix in cases of gastric and duodenal ulcer may be greater than at first sight appears. The days when the surgical treatment of disorders of the stomach was deferred until it seemed certain that the patient was otherwise likely to die are long gone by; the surgeon may now claim that his art has so far advanced that it is the means, not alone of saving life, but also, and chiefly, of loosening the cords of affliction in which so many are bound. The immediate mortality of any operation in cases of chronic duodenal ulcer is very small (less than 2 per cent.), and it is now our chief concern to ensure, if we can, that the future of the patients is free from any risk that may even remotely attach to the operation itself. Probably no operation in surgery which deals with any disease of equal severity can show results surpassing those of gastro-enterostomy in cases of duodenal ulcer. But one very serious, though exceedingly infrequent, blemish is found in the after-results: it is the development of a jejunal or gastro-jejunal ulcer in close proximity to the new anastomosis. If it is admitted that the hypothesis connecting the onset of a duodenal ulcer with the chronic infection discovered in the appendix is supported by the evidence, then it must also be conceded that the incidence of a jejunal ulcer may in like manner be determined by the continuance of that infection when the appendix is allowed to remain.

Leeds.

A SERIES OF
TWELVE FOREIGN BODIES REQUIRING SURGICAL INTERFERENCE.

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THE literature of foregn bodies is fairly abundant, being copiously epitomised in surgical handbooks, and having to itself a work of 780 pages by Dr. Alfred Poulet.[1] All these publications are instructive as references and aids to practice, but they can never be exhaustive, as from time to time isolated experiences of great curiosity and rarity, sometimes giving rise to marked ingenuity, continually come to light. Pictorial illustrations have not been wanting, though afforded in only a few of the vast host recorded.

From their nature foreign bodies have an interest which is very varied. Some are mere curiosities which may have an amusing side; others, while strange and unexpected, are chiefly notable for the little harm they have done; others again, though commonplace, are elevated into notoriety by the dangers or tragedies that result. The accompanying illustration shows a number of foreign bodies the interest of which is apparent at sight, and will, it is hoped, justify their publication.

No. 1 is part of a knife-blade, 2¼ in. long and over ¾ in. broad, broken off and embedded in the left pterygomaxillary region of a sailor. He was stabbed on a voyage from New York to Liverpool, but continued at work on board ship, having no greater inconvenience than gradual stiffening of the jaws, and closure to within half an inch, with pain on movement and some looseness of the left upper molar teeth. At the same time he felt sure that a piece of the knife remained. On arrival he was admitted into the Northern Hospital where Mr. Chauncy Puzey found a sinus, revealing metal on probing. He reopened the wound and drew out the knife, so firmly stuck as to require much force, 17 days after injury. No further harm resulted and the man left in a few days.

No. 2 is a piece of wood, 2½ × ½ × ¼ in., embedded in the right pterygomaxillary region of a man who was struck below his right eye by a bundle of planks that were being hoisted during the building of a house. The wound was stitched and dressed at the Liverpool Royal Infirmary, and nearly healed. But a sinus was left, with eversion of the eyelid, for which he went to the Eye and Ear Infirmary, where probing revealed what seemed to be loose bone. He was sent back to the Royal Infirmary, where he came under my care. Finding the same loose object, I gave the house surgeon who had first dressed him the opportunity of removing it, which he did in my presence. Instead of bone he pulled out a piece of deal, of prismatic shape and the above dimensions, as clean-looking as if fresh or just washed. Healing quickly occurred and no further harm resulted.

No. 3 is also a piece of wood, very similar to No. 2 in shape and size, broken off a chrysanthemum stick which penetrated and broke off in the mouth and cheek in front of the upper jaw of a boy aged 9 years, who became thus impaled while falling in his mother's greenhouse. The object was pulled out the same day by Mr. R. T. Hughes, of Birkenhead, who asked me to see the boy with him next day in case there seemed likely to be cause for anxiety or need for special precaution. All seemed still well, and so continued without further interference.

No. 4 is a wooden meat-skewer, the pointed end of which stuck in the anus, and was removed a few hours later by Mr. C. W. Dean, of Lancaster, on exploring under chloroform. The patient had eaten some cold mutton, but had no idea that with one of the slices an inch of skewer tip had been included and swallowed. On further search in the larder another piece of the same skewer, 1½ in. long, was found in the remains of the meat. The sloping cut edges of the divided skewer fitted exactly, and on the removal of the offending piece the patient felt no further trouble.

No. 5 is the breech of a muzzle-loading gun which burst and shattered the face of a young farmer. The wound healed with no outward deformity except a fœtid sinus under the upper lip and one in each nostril. After five years a loose object was felt and thought to be necrosed bone. The nostrils were entered under the upper lip by separating the nasal cartilages from the maxillary bones, and after some difficulty the objects—a gun breech and iron bolt—were separately removed. Rapid recovery followed. The case was reported in THE LANCET of Feb. 28th, 1885 (p. 378), with a wood-cut illustration, upon which the present exact photograph is an improvement. The dimensions are 3 × 1½ × 1 in. and weight 3½ oz. The patient was brought to Liverpool by Mr. O. W. Griffith, of Pwllheli, who assisted me at the operation in private lodgings.

No 6 is a piece of parasol rib, 3. in long, of the old-fashioned round wire variety, which entered, and was broken off in, a woman's forearm, where it remained 12 days. Her husband was attacking a cat which had killed one of his pigeons, a child's parasol being the first weapon at hand. In preparing a violent lunge at the cat his back-stroke drove one of the parasol ribs into his wife's forearm instead. The rib broke at the point of entry, leaving a piece inside. The deformity produced led the case to be taken for a fracture of the forearm by the house surgeon or student who first attended to the woman at the Liverpool Royal Infirmary, and accordingly put on splints. But when the patient returned among the out-patients the nurse reserved her for my inspection. There did appear to be a bend in one of the bones, but

[1] Traité des Corps Etrangers en Chirurgie, Paris, Octave Doin, 1879.

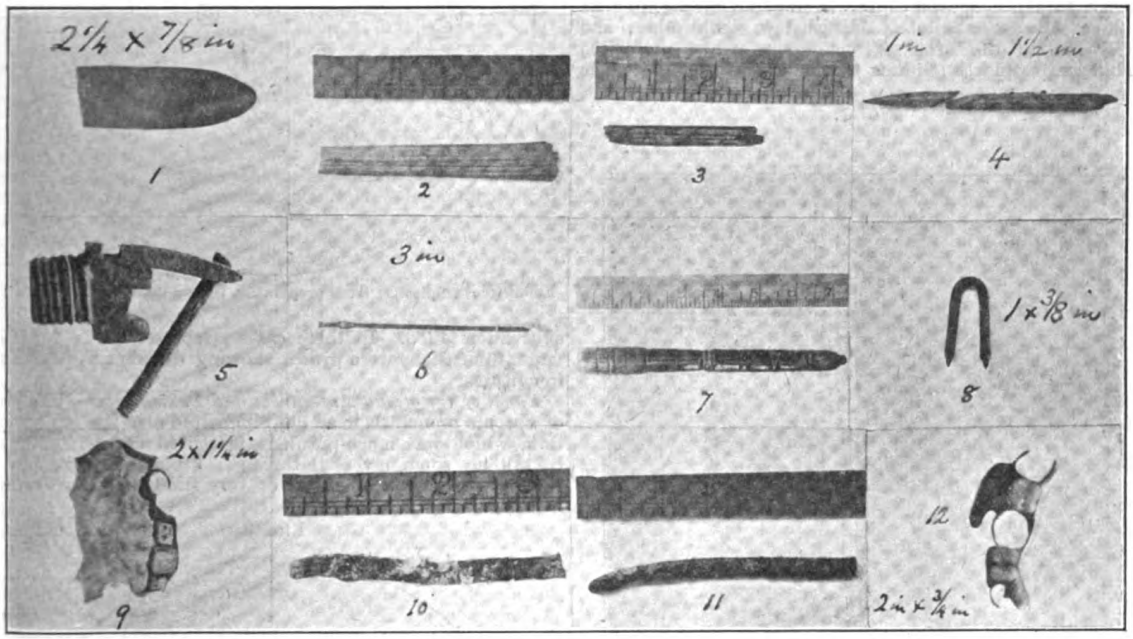
the patient's tale included the incident of the cat and the parasol rib, which was then easily felt, cut down upon, and removed without anæsthetic or further complication.

No. 7 is a remarkable specimen in a remarkable case. The object is a piece of turned oak, 7¼ in. long and from ½ to ¾ in. thick, called a "knitting sheath," used by women in some parts of the country, stuck in the girdle or apron-string as a rest for a long steel knitting needle. The blunt end of the "sheath" lies upwards, and has a hole over an inch deep in which the lower end of one needle rests to avoid wearing holes in the clothes of the knitter. A farmer, aged 70, stated that while stooping on his kitchen floor before a looking-glass trying to apply ointment to his anus with the narrow end of this stick to relieve itching, he fell over and the "sheath" entered his rectum and he could not get it out! After a fortnight's lodgment of the object he applied in the year 1888 at the Liverpool Royal Infirmary, where, with lithotomy forceps, I removed it without anæsthetic or detention of the patient. This was my first introduction to the strange, but no doubt useful, weapon here depicted.

crushed and washed away in dust and larger fragments to over 40 grains. A piece of catheter ¾ in. long was brought away in the blades of the lithotrite during the crushing. As more evidently remained, the rest, 2½ in. long, was fished up and pulled out through the urethra. The two pieces are here joined together on a wooden match.

Several instruments have been devised for the express purpose of extracting foreign bodies from the bladder by way of the urethra; but nothing seems to serve this purpose better than, or even so well as, a lithotrite, especially with smooth blades. Both French and English surgeons have found the lithotrite useful for the purpose, and in the present case no difficulty was felt.

No. 12 is a tooth plate, 2 in. long and less than an inch wide, which passed well down the œsophagus and could not be dislodged by exploring through the mouth. The case occurred in 1899 in a soldier aged 26. The plate was found to be so far down that I imagined it could be extracted through the stomach, and so the inconvenient and always dangerous œsophageal wound in the neck be avoided. But



No. 8 is an iron staple, 1 × ⅜ in., swallowed by a boy aged 9, and retained for four days, after which it was passed. Some griping was caused, and the staple was shown by X ray photography in the lower abdomen the day before issue; it was previously also identified by comparison with another specimen brought with the boy to the hospital, where he rested in the interval.

No. 9 is a tooth-plate, apparently of silver, 2 × 1¼ in., from a man aged 36, who woke up about 4 A.M. with this sticking in his throat. He came to the Liverpool Royal Infirmary in March, 1881, where I felt it with my finger in the lower part of the pharynx, and removed it with forceps through the mouth after lodgment of not more than nine hours. A drawing was made at once by Mr. J. R. L. Dixon, then a student, and the plate was restored to the patient, who put it back into his mouth and left. This illustration is a photographic reproduction of the drawing.

Nos. 10 and 11 are red rubber catheters broken off in the bladders of two elderly men suffering from prostatic retention and irritable bladder. No. 11 was found on opening the bladder by perineal urethrotomy, and requires no further remark. In No. 10 a farmer from Wales, aged 70, had four months previously broken off a piece of catheter in his bladder. It seems that seven years before he had had a stone crushed, and ever since had had to use a catheter. This he kept in his pocket and lubricated by a rough and ready method in his mouth. He came into hospital as a private patient, and I found a stone on sounding him under chloroform with a lithotrite. The stone was immediately on opening the stomach I could make nothing of it, and had to do œsophagotomy after all. The depth of its site offered no obstacle to the easy reach and removal of the plate by this route. The wounds of the stomach and abdomen healed quite simply, and that of the œsophagus granulated and healed without untoward incident. Two years later, when I happened to meet the patient, he said he had had no further trouble, and was then quite well.

Liverpool.

OBSERVATIONS ON THE FUNGI FOUND IN TROPICAL BRONCHOMYCOSIS.

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IN previous publications I have called attention to the great frequency in the tropics of bronchial affections very probably due to hyphomycetes. I have also given a clinical description of such conditions (so-called tea-factory cough, copra cough, &c.) which at times closely resemble phthisis.[1] In this paper I propose to give briefly the results of the further investigation on the fungi which I have so far isolated. The technique has been given in other papers; a precaution which is absolutely necessary to take in such

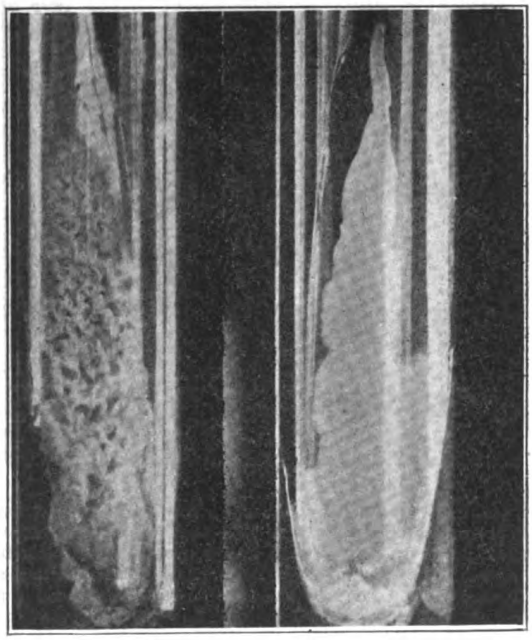
[1] Castellani: Philippine Journal or Science, 1910. Castellani: Centralblatt für Bakteriologie, 1911.

researches is to collect the expectoration in sterile bottles or Petri dishes and to inoculate the various media immediately after collection. The fungi I have so far found in cases of tropical bronchomycosis may be classified as follows. 1. Those belonging to the genus Endomyces. 2. Those belonging to the genus Saccharomyces. 3. Those belonging to the genera Aspergillus and Penicillium. 4. Those belonging to the genera Streptothrix and Actinomyces. 5. Non-determined fungi.

Fungi of the genus Endomyces.—These are in Ceylon the commonest fungi found in bronchomycosis; for the type of the disease caused by them I suggested the term "broncho-oidiosis," or "broncho-endomycosis." Microscopically in the sputum round or oval shape yeast-like cells are seen, and at times segments of mycelium. They are easily grown on the various slightly acid sugar media and also—though less abundant—on ordinary slightly alkaline agar. On sugar agars they give rise to roundish, thick, creamy-white colonies which soon coalesce. They are all *Gram-positive*, do not liquefy gelatin (21 days). In contrast to the usual endomyces albicans none of them liquefies gelatin and none of them (except three) coagulate milk. I have so far isolated 24 strains; 13 are absolutely identical to each other, and correspond to the type of endomyces which I called Endomyces tropicalis (Oidium tropicale) (see Figures). The

FIG. 1.

A B



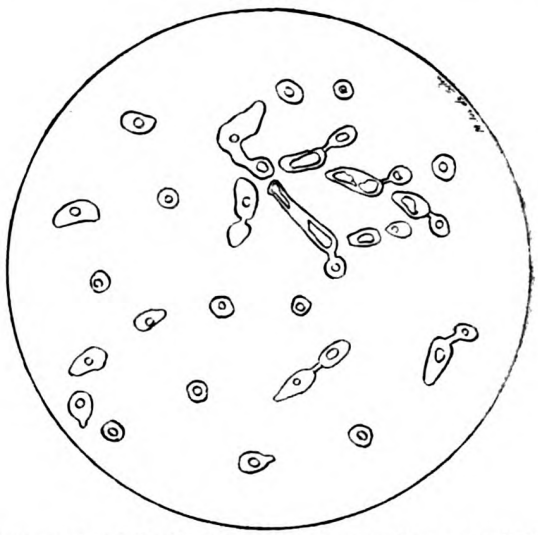
Non-determined fungus; glucose-agar culture. Endomyces tropicalis; maltose-agar culture.

remaining 11 differ from Endomyces tropicalis and differ also among one another; in fact, they are 11 different species. I at first divided these species into two groups—those affecting milk and those not affecting this medium; for the first group I proposed the term "Endomyces pseudotropicalis" and for the second "Endomyces paratropicalis." This nomenclature, however, is not correct, as the same term indicates several different species. I have therefore in this paper retained the term "Endomyces pseudotropicalis" for one species; paratropicalis for another; and I have given a name to each of the nine remaining species (see table).

Fungi of the genus Saccharomyces.—Saccharomyces were isolated from the expectoration of two cases; both strains of saccharomyces are identical and correspond to the type which I have called saccharomyces krusei. They are easily grown on acid as well as ordinary media. They are *Gram-positive*. The culture characters of saccharomyces krusei will be found in the table. Recently I have noticed that after repeated subcultures some mycelium may be observed; it is therefore probable that this fungus will have to be removed from the genus saccharomyces.

Fungi of the genera Actinomyces and Streptothrix.—In two cases of bronchomycosis dark or dark greenish actinomytic-like granules were present. On microscopical examination long, very thin mycelial filaments were seen; they were *Gram-positive* in both cases and acid-fast in one. Attempts at

FIG. 2.

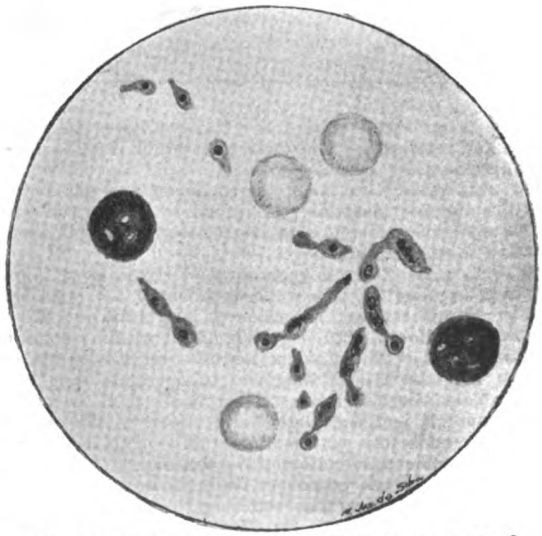


Endomyces tropicalis; fresh preparation from a maltose-agar culture.

cultivation failed. In three cases streptothrix-like fungi of larger dimensions were grown showing different appearances in cultures.

Fungi of the genera Aspergillus and Penicillium.—In a case of chronic bronchitis in an old Singhalese man the expectoration, which was muco-purulent, presented darkish granules containing some mycelial threads. From these granules a fungus was grown identical or very similar to Aspergillus

FIG. 3.



Endomyces tropicalis in the expectoration of a severe case of bronchomycosis. (From a preparation stained with methylene blue.)

fumigatus (Fresenius). In another case with the same type of expectoration a fungus presenting penicillium-like fructifications was isolated. In a third case with muco-purulent expectoration, but without dark granules, an aspergillus producing white or whitish-greenish colonies was grown.

Table Showing Cultural Characters of the Various Endomyces Isolated.

—	Litmus milk.	Glucose.	Lævulose.	Maltose.	Galactose.	Saccharose.	Lactose.	Mannite.	Dulcite.	Dextrine.	Raffinose.	Arabinose.	Adonite.	Inulin.	Broth.	Peptone water.	Indol.	Gram.	Gelatin.	Serum.
Endomyces tropicalis (Castellani)	O§	AG	AG	AG	AG¶	A¶	O	O	O	O	O	O	O	O	‡	‡	O	+	O‡‡	O
,, paratropicalis (Castellani) ...	O§	AG	AG	AG	AG	AG	O	O	O	A¶	O	O	O	O	*	†	O	+	O‡‡	O
,, pinoyi (Castellani)	O	AG	AG	O	O	O	O	O	O	O	O	O	O	O	†	‡	O	+	O‡‡	O
,, guilliermondi (Castellani)...	O‖	AG	A	A	A	AG	O	O	O	O	AG¶	O	O	O	†	†	O	+	O‡‡	O
,, negrii (Castellani)...	O‖	AG	AG	A	AG¶	AG	O	O	O	O	AG¶	O	O	A¶	†	†	O	+	O‡‡	O
,, niveus (Castellani)	O§	AG	AG	AG	AG¶	AG	O	O	O	O	AG¶	O	O	O	†	‡	O	+	O	O
,, candidus (Castellani)	O§	AG¶	AG¶	A	A	A¶	O	O	O	O	AG¶	O	O	O	*	‡	O	+	O	O
,, insolitus (Castellani)	O§	AG	AG	AG	AG	AG	O	A	O	O	O	O	A	O	†	†	O	+	O‡‡	OB
,, pseudotropicalis (Castellani)	AC	AG	AG	O	AG¶	AG	AG	O	O	O	O?	O	O	O	‡	‡	O	+	O‡‡	O
,, lacticolor (Castellani)	††	AG	AG	AG	AG¶	O	O	O	O	O	O	O	O	O	†	‡	O	+	O‡‡	O
,, nitidus (Castellani)	DC**	AG	AG	A	A	A	A	A	O	A	A	O	O	O	*	†	O	+	O‡‡	O
,, lacteus (Castellani)	AC	AG	AG	AG	AG¶	AG¶	A	O	O	O	AG¶	O	O	O	†	†	O	+	O	O
Saccharomyces krusei (Castellani)... ...	O	AG	AG	O	O	O	O	O	O	O	O	O	O	O	‡	‡	O	+	O‡‡	O

Abbreviations used in the table:—A, Production of acid. B, The growth and medium surrounding slightly brown. G, Production of gas. O, Negative result—viz., neither acid nor clot in milk, neither acid nor gas in sugar media, or non-liquefaction of gelatin or serum, as the case may be.

* Clear, thin pellicle. † Clear, good bottom growth, no pellicle. ‡ Practically no growth. § If any change, slightly alkaline. ‖ Alkaline in seven days. ¶ Trace only. ** Decolourised; clot in five days. †† Alkaline, then peptonisation. ‡‡ Non-liquefied, three weeks.

Non-determined fungi.—In several cases fungi were isolated which so far I have been unable to determine. One gives rise to beautiful pink-coloured colonies. Another found in two cases somewhat resembles an endomyces; it grows very rapidly on all the usual media, and especially so on glucose agar. The appearance of the growth is practically the same in all the various sugar agars; the growth is abundant, of a yellowish colour, the surface convoluted or crinkled. (See Fig. 1, A.) Fresh preparations from the cultures show a large amount of long, regular, septate mycelial threads 2–3 microns in breadth and numerous free roundish spores.

Conclusions.—The fungi so far observed in Ceylon in cases of bronchomycosis are 12 different species of endomyces, the commonest being Endomyces tropicalis, Saccharomyces krusei, various strains of Actinomyces and Streptothrix, fungi of the genera Aspergillus and Penicillium, and several other fungi which so far I have not determined. As regards the pathogenicity of the fungi found it would seem from some researches I have carried out that the pathogenicity of Endomyces tropicalis and of the fungi of the genera Aspergillus, Penicillium, Streptothrix, and Actinomyces is practically certain.

Colombo, Ceylon.

THEORY AND PRACTICE IN THE TREATMENT OF GLAUCOMA.

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IN 1856 Albrecht von Graefe, then a young teacher in the Berlin University, only 28 years old, introduced the operation of iridectomy for the relief of glaucoma. "For thousands of years hosts of sufferers from glaucoma sank without relief into the night of blindness; by the introduction of iridectomy A. von Graefe pointed out the way whereby their vision might be retained. Had he accomplished nothing more he would by this one act have merited the crown of immortality and a place in the little band of heroes who are the benefactors, not of a nation alone, but of all mankind." These eloquent words, written more than 30 years ago by Professor Schmidt-Rimpler, would be endorsed by every ophthalmologist to-day. None the less, the battle is not yet won, for to-day, too, thousands of sufferers from glaucoma drift into the night of darkness, not, it is true, wholly unrelieved, but often, unhappily, with a relief which is but a postponement of the inevitable end.

Glaucoma, in the broad use of the term, is the condition of pathologically increased intraocular tension. Two great groups of cases may be distinguished: those in which increased tension is the result of inflammatory changes occurring in the ciliary body, and those in which there is no evidence of primary inflammatory change in any part of the eye. It is well to reserve the term glaucoma, in its narrower sense, for the latter group. The pathology of these cases is quite different, and it is amongst them that iridectomy and cognate operations are most clearly indicated.

This group again is broadly subdivided into two subgroups—primary acute and chronic glaucoma. The former is characterised by sudden onset, great increase of tension, intense vascular congestion, and severe pain; the latter by insidious onset, slow progress, intermittent and often scarcely appreciable increase of tension, absence of marked vascular congestion, and freedom from pain. In the former the vision fails very rapidly; in the latter very slowly. The difference between the two classes is so marked that they might almost be considered different diseases. They have this point of contact, however, in that the chronic cases are subject to exacerbations in which the tension is suddenly raised and the case assumes all the characteristics of a primary acute glaucoma. Primary acute glaucoma is remarkably amenable to operative treatment by iridectomy. The effect is little short of magical; tension and pain are relieved immediately, and if the operation is performed sufficiently early vision is rapidly restored. In chronic glaucoma, on the other hand, iridectomy often fails to stay the progress of the disease. It is by the brilliant results of iridectomy in primary acute glaucoma that von Graefe is still held to merit that crown of immortality which he wears as the benefactor of mankind.

Without the wish to dim the lustre of a single jewel in von Graefe's crown it should be salutary to human intellectual arrogance to note that in the discovery of the cure of primary acute glaucoma by iridectomy theory and practice did not march hand in hand. Von Graefe, with that extraordinary clinical insight which distinguished him more than any other ophthalmologist of the day, with the exception of Mackenzie, had noticed the diminution of intraocular tension following iridectomy in cases of partial anterior staphyloma, corneal ulcer, and so on. He was of opinion that experimental researches on animals supported the view that excision of a broad piece of iris permanently diminished the tension of even the normal eye. Subsequent experiments by more delicate methods do not support this view, and it must be conceded that iridectomy for glaucoma was founded upon deductions from false premises. So notable an example may well instil caution in the acceptance of even the most plausible theories, particularly in biological questions, the complexities of which preclude the accuracy characteristic of physical and mathematical problems. Rather as seekers after truth, then, than as captious critics, let us consider the current theories of intraocular tension, normal and

pathological, in their bearing upon the treatment of chronic glaucoma.

The generally received theory of the normal intraocular pressure, which amounts to about 25 mm. of mercury above the surrounding atmospheric pressure, is as follows. In order that the tension of the eye may be maintained at this raised pressure work must be done, and it is evident that the source of energy must be the blood pressure. This deduction is proved true by the fact that in experiments on animals the intraocular pressure follows passively every change in the general blood pressure. The walls of the globe are kept stretched by the fluid constituent of the contents, which fills the anterior and posterior chambers and permeates the vitreous. This fluid is comparable to the lymph which bathes the tissues in other parts of the body. The generally received view is that it *is* the lymph of the eye. In other parts of the body the chief function of the lymph is to carry food material to the tissue cells, and to carry away the effete products of the cell metabolism. It has a further function of keeping up the normal tissue tension. Both these functions are of unusual importance in the case of the eye. Owing to the nutritional function of the lymph it is not sufficient that the internal pressure should be kept up by stagnant fluid. Owing to the necessity of keeping the pressure constant within the limits of very small variations the amount of fluid must be similarly nearly constant. The lymph is therefore being constantly renewed and as constantly equally removed.

The physical conditions of the formation of lymph in other parts of the body are consistent with its production by a process of filtration out of the capillaries; the amount poured out and its chemical composition are dependent upon the difference of pressure on the two sides of the filtering membrane—i.e., the capillary wall. The difference of pressure is less in the eye than elsewhere; hence the amount of lymph secreted in a given time is small and its chemical composition differs materially from that of lymph elsewhere. As regards the rate of production, it probably takes nearly an hour for the aqueous in the anterior chamber to be renewed; as regards its composition, the large moleculed proteids of the blood plasma are kept back and the lymph is little more than a saline transudate. Experiments show that the ciliary body is specially differentiated for the production of the lymph which nourishes the vitreous body and lens and on which the intraocular tension depends. The other structures of the eye produce only sufficient lymph for their own nutritional and tissue tension requirements.

The removal of lymph from the eye is the function of the canal of Schlemm, with the exception of a very small portion which passes back through the vitreous and is removed by the perivascular lymph channels of the central vessels of the retina.

Such, in brief, is the most widely accepted view of the normal intraocular tension. Upon this theory is built the retention theory of glaucoma—viz., that the increased tension of glaucoma is caused by the retention of an excess of lymph within the eye. Owing to obstruction at the angle of the anterior chamber the path of the fluid from the anterior chamber to the canal of Schlemm is blocked and the tension of the eye rises. The explanation of the efficacy of iridectomy is that the operation opens up the filtration angle and thus restores communication with the canal of Schlemm.[1] Iridectomy in chronic glaucoma is held to fail because the obstruction at the filtration angle is due to firm fibrous adhesion of the root of the iris to the corneo-sclera and the operation fails to restore permeability of these tissues. The aim, therefore, of most surgeons who have attempted to find out a better way has been to establish a permeable path for the fluid into the subconjunctival tissues, where absorption into the blood stream can easily occur.

Not infrequently the operation of iridectomy for glaucoma has been attended by the incarceration of a small portion of the iris in one angle of the wound. In such cases the scar is weak in this situation and subsequently bulges, so that a so-called cystoid cicatrix forms. Although a weak scar of this nature has several grave disadvantages and dangers, it has been found that the effect of the operation on the progress of the glaucoma has been much better than when an apparently more perfect surgical result is obtained. This effect has been so striking that in spite of the dangers of late infection, sympathetic ophthalmia, and so on, a deliberate effort has been made to produce a cystoid cicatrix, as in Lieutenant-Colonel H. Herbert's earlier work on the operative treatment of glaucoma in Bombay. The efficacy of the cystoid cicatrix is attributed to the weakening of the ocular wall at this spot and the possibility of permeation of the loose cicatricial tissue by the intraocular fluid.

In other cases the iridectomy wound has not healed firmly, although no incarceration of iris occurred. The subconjunctival tissue over the wound has been swollen and œdematous and has remained in this condition for an indefinite period. Such cases have also done unexpectedly well from the point of view of the relief of glaucomatous symptoms. The explanation again has been that the weak scar permitted the permeation of the intraocular fluid, and such scars have been termed "filtering cicatrices."

In this case again the effect has been so striking as to have appealed very strongly to surgeons of wide experience, so that over and over again attempts have been made to elaborate some method of ensuring the formation of a filtering cicatrix in this operation. Such are the "small wedge operation" of Lieutenant-Colonel Herbert and the modified iridectomy operation of Lagrange. Others have relinquished the iridectomy and aimed direct at the development of a filtering cicatrix without adventitious aid. Such are the trephine operation of Major R. H. Elliott and the "small flap operation" of Lieutenant-Colonel Herbert.

Now, these operations have given satisfaction in direct proportion to their success in producing the object aimed at—viz., the provision of a channel permeable to the intraocular fluid. When that object has been attained the ameliorative effect upon the progress of the disease has also followed. Of course, in such cases there is great danger of reasoning in a circle and attributing success or failure to the wrong cause. But so far as they go they support the view that the establishment of a filtering cicatrix is a cure for chronic glaucoma, or, at any rate, as much a cure as iridectomy is for primary acute glaucoma.

Here, however, the antinomian spirit—that spirit, be it remembered, which is responsible for so much of the advance of science—steps in and denies *in toto* the efficacy of the filtering cicatrix on theoretical grounds. "The theory of 'filtering cicatrices' rests on the assumption that the aqueous outflow is a filtration. ..... Now, the bases of the volumetric and of the circulatory conceptions of the intraocular pressure are as diametrically opposed as the two poles, and, therefore, while admittedly the theory of 'filtering cicatrices' is perfectly logical with the former premises, it is equally illogical with the latter."[2] What, then, is the "circulatory conception" of the intraocular pressure? It is that: "1. The intraocular pressure is vascular in origin and nature, and stands and varies with intraocular venous pressure. 2. The intraocular pressure is influenced directly and absolutely by a rise in general venous pressure, but only relatively by increase in arterial pressure. 3. The intraocular volume is a fixed quantity. 4. The corneo-scleral envelope represents a rigid case."[3] It will be seen that the primary assumption is that the walls of the globe form a rigid case like the skull, and that, therefore, the whole of Dr. Leonard Hill's work on the cerebral circulation can be applied directly to the intraocular circulation.

Dr. Thomson Henderson's arguments in favour of the view that the walls of the eye are rigid consist chiefly in criticisms of my own writings.[4] That I should have been guilty of the common error of using the word "elasticity" in the colloquial and not in the strictly accurate scientific manner is of little moment. Moreover, it is easy by separating phrases from their context to gather together apparent paradoxes. I have stated that "the globe of the eye is practically rigid," and for slight variations of intraocular pressure the statement is undoubtedly true, and is consonant with the statement that "the stretching under normal physiological pressure is minimal." I do not regard it as

[1] It is necessary to be very precise in one's language on this point. Dr. Thomson Henderson's criticism of my remark that the object of the peripheral incision in iridectomy for glaucoma, as well as the aim of sclerotomy, is to open up the filtration angle and canal of Schlemm, is that "such procedure, if successful, would merely result in phlebotomy, with certainly most undesirable consequences." (Thomson Henderson, Glaucoma, London, Edward Arnold, 1910, p. 202.)

[2] Thomson Henderson, loc. cit., p. 205.

[3] Loc. cit., p. 89.

[4] Parsons: The Pathology of the Eye, vol. iii. London: Hodder and Stoughton.

"flat contradiction" to say that "unlike the cranium, however, the eyeball is not a rigid case," and that the stretching is "quite an appreciable amount," even when the intraocular pressure is raised from 19 mm. to 70 mm. Hg. The last statement is based upon reliable experimental observations by Koster. Dr. Henderson brings forward no evidence whatever to controvert these statements, and we must therefore conclude that, though within the range of physiological pressures, the walls of the globe may be regarded as practically a rigid case, beyond that range deformation occurs which must be taken into account if accurate deductions are to be made.

So far then as variations within the limited range of physiological pressures are concerned Dr. Henderson's working model of the circulatory mechanism of the intraocular pressure has exactly the same value that a good diagram has and no more. Those who have had experience in biological experiments will appreciate the dangers of mechanical working models. They have their use in illustrating proved facts; it is unwise to misuse them to prove disputed points. Within the narrow range of pressures in which the eyeball may be regarded as rigid the general application of Dr. Hill's researches may be freely admitted. Even they, however, should not be pressed too far. To take a simple example, his experiments tend to prove that vaso-motor changes cannot occur within the cranium. Delicate as were the experiments they appear to me to be far too coarse to prove such a point. As the late Professor Michael Foster said of experiments on cerebral localisation, "they are like playing the piano with a broomstick." Now there is plenty of evidence, clinical and experimental, to prove that vaso-motor changes occur in the retinal vessels within the normal range of intraocular pressures, yet Dr. Hill's experimental observations are equally potent in their allotted sphere. Under the conditions named the general features of the intraocular pressure are doubtless the same as those of the intracranial pressure, but only direct experiments on the eye can demonstrate what modifications in detail may be present. Beyond the given range one fact alone suffices to show that the conditions are quite dissimilar. When the animal is killed the intracranial pressure promptly sinks to zero; not so, however, the intra-ocular pressure, which, under these circumstances or when the eye is excised, only reaches zero after a prolonged period—in fact, after fluid has filtered out.

With regard to the production of aqueous Dr. Henderson adopts the secretory view in common with many who hold what he calls the "volumetric" theory. They, however, do not go so far as to say that "mechanical filtration is impossible." It is difficult to understand what he means when he says that "there can be no difference in hydrostatic level on either side of the filtering membrane." The filtering membrane is the capillary wall, and whatever may be the reason why the fluid passes into the posterior chamber and not into the suprachoroidal space, it is certain that the intracapillary pressure is greater than the extracapillary—i.e., the intraocular—pressure, and therefore the filtration factor must come into play. Resorption of aqueous is regarded as a pure diffusion into the veins, particularly the canal of Schlemm and the veins of the iris. Dr. Henderson believes that many of the ciliary vessels which have been described as arteries are really veins.

On the assumption that even under pathological conditions of increased tension the walls of the eye are still a rigid case, the explanation of glaucoma is held to be due, not to a "retention of intraocular volume," but to a "retention of intraocular pressure." The language is cryptic, but taken with the context the meaning is clear. On blocking the venous exits—canal of Schlemm by sclerosis of the ligamentum pectinatum and anterior ciliary veins by peripheral anterior synechia—the elastic blood-vessels are transformed into a rigid system of tubes. In such a system the outflow pressure is always higher than in a similar system of elastic tubes; hence in glaucoma the lowest circulatory pressure is that in a rigid system, and therefore the intraocular pressure is maintained at a correspondingly high level. The observations on sclerosis of the ligamentum pectinatum agree with those of other pathologists. Resorption of aqueous is reduced to the area of the iris veins. The aqueous is therefore not entirely cut off from the veins; the aqueous volume is displaced by increase of total vascular volume, so that the anterior chamber becomes shallow. The explanations of the dilatation of the pupil, haziness of the cornea, occlusion of the angle of the anterior chamber, and so on, are very ingenious, but are open to criticism in many respects.

The efficacy of iridectomy in glaucoma is attributed to the free opening up of access to the iris veins. This is facilitated by the fact that wounds of the iris do not undergo cicatrisation like other wounds, and consequently the aqueous is brought into contact with the vessels of the iris throughout the length of both edges of the coloboma.

That the hydrostatic principles underlying Dr. Henderson's theory have to be taken into account needs no proof, and he has done great service in forcing them vigorously upon the attention of ophthalmologists. That there are conditions, normal and pathological, in which they play a preponderant rôle may equally be admitted. That they alone can be held to account for the pathogenesis of glaucoma is a view unlikely to commend itself to most pathologists, who will still hold that the major variations in the intraocular pressure are brought about by actual variations in the fluid contents of the globe. Further research will probably show that the two theories are not so inconsistent as Dr. Henderson would have us believe.

There yet remains an operation for chronic glaucoma which has not been considered—cyclodialysis. By this means Dr. Heine attempted to provide an exit of the intraocular fluid by way of the suprachoroidal space. It appears to be satisfactory so long as the artificial detachment of the ciliary body from the sclerotic persists, but fibrous reunion occurs and the intraocular tension again rises. According to Dr. Henderson there is normally free passage of aqueous from the anterior chamber into the suprachoroidal space; his evidence, however, is not convincing. Dr. A. Freeland Fergus combines the operation of trephining with cyclodialysis.

In conclusion, if the criticisms put forward here are just, the formation of a filtering cicatrix holds out the best hope of alleviating chronic glaucoma.

Queen Anne-street, W.

LYMPHATIC VARICOCELE.

BY FRANK COLE MADDEN, M.D. MELB., F.R.C.S. ENG.,

PROFESSOR OF SURGERY, EGYPTIAN GOVERNMENT SCHOOL OF MEDICINE; SENIOR SURGEON, KASR-EL-AINY HOSPITAL, CAIRO.

WE have recently operated on three cases presenting the usual clinical signs and symptoms of varicocele, but have found that the swelling was due to the presence of tortuous coils of very thin-walled, dilated lymphatics in the substance of the spermatic cord. This condition is, in all probability, a manifestation of filariasis, though we have not succeeded in finding filarial embryos in the blood—a fact that proves nothing of itself, but it would have been a source of satisfaction to have had confirmation of our thesis.

Our attention was first drawn to the condition I wish to describe whilst operating on a case which had been operated on a few months before for varicocele. A very temporary relief had followed the first operation, but the swelling had returned in a more severe degree shortly afterwards. At the second operation we found that the varicocele had been completely cured—if, indeed, it had ever existed; but we were surprised to find masses of thin, translucent, dilated lymphatics extending along the whole length of the cord. The affected lymphatics were excised, and so far there has been no recurrence, though, if the enlargement is due to a compensatory dilatation to provide a collateral circulation around a blocked lymphatic trunk in the pelvis or lower abdomen, the permanency of the cure is very uncertain.

The following case brings out the main points of the condition and its liability to recur, and may be taken as a type.

The patient, aged 20, was admitted to Kasr-el-Ainy Hospital on Sept. 10th, 1911, complaining of pain in the right side of the scrotum. He had been suffering from this pain for the last five years, especially after prolonged standing or walking, and it was gradually increasing in severity. There was no history of fever or any other previous disease, either in the scrotum or elsewhere, and the urine was clear, with specific gravity 1022, acid in reaction, and entirely

free of albumin, sugar, or other abnormal constituent. No filarial embryos were found in his blood. He had been operated on in February, 1911, by my colleague, Dr. Aly Ibrahim, for hernia and varicocele, but the veins were not enlarged, and running with the hernial sac was a "cystic enlargement of the cord extending as far as the external ring. The thickening consisted of separate cystic enlargements, each of which was constricted at certain points, as though valves were present in the course of the dilated vessels." The true nature of the enlargement was not then recognised, but the cystic dilatations were excised between ligatures, and the radical operation for hernia was completed.

Very soon after this operation the swelling of the cord returned, and this was thought to be a thrombosis of the veins of the cord which would probably gradually subside. The swelling, however, remained stationary, and on readmission to hospital the enlargement very closely resembled varicocele, even giving a faint impulse on coughing, and diminishing in size on lying down and refilling on standing.

A second operation was performed. Under stovaine anæsthesia the old scar was resected, and the entire length of the cord was exposed from the external ring to the testis. The swelling was then seen to consist of a large number of coils of dilated lymphatics having a sacculated appearance, like sausage-skins of very small calibre, and distended with clear lymph. These coils completely surrounded the other constituents of the cord and extended into the abdomen. The veins were not affected. The mass of lymphatics was removed between ligatures above and below, and the operation was completed as though the mass had consisted of dilated veins. The scrotum was stitched up vertically in its upper part and transversely below to shorten the pendulous scrotum. After removal it was seen that the lymphatics formed long coiled tubes, held lightly together at some points by loose connective tissue. The subsequent history of the case was uneventful, and the enlargement has not yet returned.

This condition adds yet another to the already lengthy list of possibilities in the scrotum, and if it is a filarial manifestation, which it almost certainly is, it is further of interest on account of its restricted distribution. I do not remember to have read any report of filarial lymphatic dilatation strictly limited to the lymphatics of the spermatic cord, without any implication of the scrotum, either superficial or deep.

I am much indebted to Dr. Abd-el-Fataah, resident surgical officer, for the notes of this case.

Note.—In operating on hernia and varicocele one not infrequently finds thick, white, tenacious masses of coagulated lymph in and around the spermatic cord, very similar to the more organised lymphy tissue which has to be stripped off the cords in the operation for elephantiasis of the scrotum. This is probably due to exudation of lymph from increased lymph pressure in the lymphatics of the cord and surrounding connective tissue, and is not necessarily filarial at all. It is quite different from the condition above described and no appreciable dilatation of lymphatics is present.

Cairo.

SOME OBSERVATIONS ON

THE PREVENTION OF TUBERCULOSIS.

BY J. SIM WALLACE, M.D., D.SC. GLASG., L.D.S.,

DENTAL SURGEON AND LECTURER ON DENTAL SURGERY AND PATHOLOGY TO THE LONDON HOSPITAL.

GENERALLY speaking, the healthy individual is an asset to the community, while the diseased are liable to be a burden. It would, therefore, seem to be to the advantage of the community to *prevent* disease. The treatment of disease is often quite a different matter. Once a disease, such as tuberculosis, effects an entry into the system, not only may the individual be completely incapacitated for work, but *curing* the disease is problematical, even with the aid of lavish expenditure. The extreme tenacity with which disease germs keep hold of their host once they have gained an entrance into it was well brought out in a recent address by Sir Hector Cameron,[1] but this fact is well known, and further reference to it is unnecessary here.

In days gone past the difficulty of expense in treatment was no doubt got over by the victim of such diseases entering an early grave; but it being impossible to countenance such a course of events now, we must consider whether it would not be profitable to direct more attention to prevention. It is particularly necessary to do so because the incubus of taxation for the treatment of tuberculosis and other diseases probably is a fruitful cause of tuberculosis and many other diseases.

There are two principal ways in which tuberculosis may be prevented: (1) The environment of the individual may be kept free, relatively at least, from germs which are liable to cause the disease; (2) the individual may be kept sufficiently healthy to resist the effective entrance of disease germs. That the first method is important, especially in the more infectious diseases, is of course recognised. In the case of tuberculosis it is not so obvious, but that it is so is noticeable when the question is gone into completely.[2] I do not intend, however, to deal with this part of the subject. It is to the possibility of more effectually keeping the body sufficiently fit to be able to resist the tubercle bacilli that I intend to direct attention, because the recommendations about to be made are as yet relatively unknown.

The two chief routes of entry of the tubercle bacilli into the system appear to be *viâ* the alimentary canal and the faucial and pharyngeal tonsils. With regard to entrance *viâ* the alimentary canal, we know that *in a healthy state* entrance in this way is hardly to be expected, and, as a matter of fact, though all people must swallow living tubercle bacilli many times during their life—perhaps, indeed, many times during each day—yet the tubercle bacilli do not by any means always gain effective entrance into the system.

In the past—attention being directed exclusively to the consideration of the nutritive values, the number of "calories," the rapidity of digestion, the assimilability of the food, &c.—no real consideration seems to have been given to a most important, perhaps the most important, principle of dietetics—viz., the principle which claims that the meals should be so arranged that the mouth and alimentary canal shall be left in a hygienic state at the end of each meal.

With regard to the mouth, it may be said that but few could indicate with the slightest degree of accuracy the nature of the foods which tend to leave the mouth in a hygienic state. Yet this is the beginning of the trouble; for if the mouth is, generally speaking, in an unhygienic state after meals—as it, indeed, very generally is—then what chance has the stomach and alimentary canal to be free from injury from the constant swallowing of septic matter, polluted food, or decomposing food remains. Furthermore, if the mouth is left in an unhygienic state, what chance have the teeth of remaining free from caries or the gums from being injured between the teeth by the more or less constant lodgment of fermenting food.

We now know that dental diseases are, in general, neither hereditary nor constitutional, but that they are the result of habitual dietetic error. The dietetic error which brings on dental troubles has little or nothing to do with the question as to whether the food is nutritious or not. The point of importance is whether the food leaves the mouth in a hygienic state at the end of the meal or otherwise. It is not my intention to consider which foods are cleansing to the mouth and teeth and which are not. Here it must simply suffice to say that those physicians who have really considered the subject now recognise that soft milk-soaked foods do not keep the mouth in a hygienic state, and moreover some note the probability that these foods are neither directly nor indirectly conducive to the hygiene of the alimentary canal. Thus, Dr. G. A. Sutherland, when referring to the preventive treatment of tubercular peritonitis, says that "the real risk lies in an unhealthy condition of the alimentary canal which may allow the penetration of the bacilli." He urges the wisdom of a type of diet requiring mastication such as would tend to keep the alimentary canal in a healthy state, and comments on the feeding of children with tubercular tendencies on "a sloppy diet—milk, bread and milk, and pudding." He says: "Experience has shown that this is the worst possible form of treatment."[3]

Further comment on the system of feeding which keeps the mouth and alimentary canal in an unhygienic state is not

[1] The Persistence of Disease Germs in the Human Body, Brit. Med Jour., 1911, vol. i., p. 973.

[2] Newsholme: Prevention of Tuberculosis.

[3] The Treatment of Diseases in Children, p. 110.

necessary. It behoves those who would lend a helping hand in the prevention of tuberculosis to become acquainted with the more recent views on diet from the point of view of oral and alimentary hygiene, lest they may help to continue "the worst possible" system of feeding children.

The other important mode of entry of the tubercle bacilli is via the pharyngeal and faucial tonsils when these are in a diseased state. This is, perhaps, the commonest way in which these micro-organisms enter the system. An interesting investigation of Dr. H. Osborne[4] shows how very constantly diseased lymphatic glands are associated with pathological hypertrophy of the pharyngeal and faucial tonsils. That "infecting organisms may obtain access more readily by way of enlarged tonsils and adenoids than through the healthy nose and throat" can hardly be doubted. It is consequently of great importance in the prevention of tuberculosis that the causes of adenoids and enlarged tonsils should be recognised and combated.

It is not my intention to enter into the question of causation fully; all that I would do at present is to recall the well-known fact that adenoids are more frequent in cold and damp localities, and in a short investigation which I made a few years ago it transpired that of 49 children who were brought up on the open-window principle in all weathers (whether cold and damp or otherwise), 22 of these children developed adenoids to such an extent that they had to be operated on. While, on the other hand, of 69 children of a similar class, who had been brought up with the windows of their bedrooms shut at night, only two cases of adenoids were noted.

It may here be observed that the liability to catarrhal troubles of the naso-pharynx, or at least to adenoids, resulting from a strict adherence to the open-window system of ventilation in cold and damp nights is generally admitted now by those few laryngologists who have been persuaded to look into this subject. And it might be well also to say that those medical men who still advocate the open window at night, in all weathers and under all circumstances, should bring forward statistics to justify their recommendations. At present, as regards adenoids, there do not seem to be any statistics whatever to justify the attitude which they take up; and, moreover, the fact that during recent years pneumonia has come to account for a greater number of deaths than any other disease whatsoever indicates most emphatically that care should be exercised before recommending or enforcing a procedure having no statistical evidence to support it, which is contra-indicated both by instinct and by reason.

But recognising that there is difference of opinion on this important point, it is evident that we must have this question as to the causation of adenoids definitely settled. It is a very easy investigation to those who have the opportunity of seeing numerous school children. It does not require a laboratory or expensive equipment, and yet this simple investigation will, I have no doubt, prove to the medical world—as it has done to those who have already looked into the subject—that adenoids are easily preventable in nine cases out of ten. There are, of course, other cogent reasons for insisting on the elucidation of the causation of adenoids. The sequelæ are often disastrous when the patient lives; moreover, the operation for the removal is not always productive of very satisfactory results as regards breathing, while the risk of death during or immediately after the operation is fairly well recognised.

Now, if we recognise the fact that there has been a general diminution in tuberculosis due to cheap food, better housing, smaller families, and improved sanitation, we must also recognise that increased taxation, for the sake of State *treatment*, leaves less money for the individual to spend on food, clothing, medical attendance, and proper housing accommodation.

Only a few hundreds of those treated in sanatoriums are physically rehabilitated so that they become useful members of the community; on the other hand, there are tens of thousands, nay, several millions, who can ill afford the money required by the tax-gatherers. There is, indeed, but a mere handful the taxation of whom would be beneficial for themselves and the community. Nor is it evident that, even though taxation were limited to the rich, the tax would not ultimately really fall upon those who could not afford it without denying themselves the comforts which are conducive to health.

It must not be thought, moreover, that it is only the very poor who would feel the pinch. Here, for example, are some statistics culled from Mr. Culpin's report on overcrowding and child development:—

Boys from 15 to 18 years of age living in—	4-roomed houses weigh on the average	64·3 lb.
	3- " " " " "	60·6 "
	2- " " " " "	56·1 "
	1- " " " " "	52·6 "

The average difference in weight of boys living in 1-, 2-, 3-, and 4-roomed houses is roughly 4 lb. for each additional room, and the height of such boys is correspondingly more for each additional room. We find that a boy living in a one-room tenement is 4·7 in. shorter and 11·7 lb. lighter than one from a four-roomed house. It is evident, therefore, that it is not only those who live in a one-, two-, or even three-roomed house who will suffer from increased taxation for the treatment of disease. Statistics similarly show that tuberculosis is more prevalent the smaller and more overcrowded the house.

The most rational, economical, and just system is for the State to do what seems necessary to prevent disease; everyone would participate in the benefit. The expense of the treatment of the individual should fall on the individual or those responsible. Of course, as a matter of charity the individual sufferer would in the future, as in the past, be liberally aided by those who voluntarily contribute for the relief of suffering, even though such suffering be the result of his own negligence or misdeeds.

Another aspect of the subject demands the most careful consideration. It would appear that there was a marked decrease in the mortality from phthisis from 1850 to 1894, since which time it has ceased to decrease so rapidly, or, to put it in Professor Karl Pearson's words:—

> The death-rate from phthisis during our period of supposed greatest knowledge, and during the time of our most active campaign against tuberculosis, has ceased to be reduced at the old rate. There is actually a slackening in the rate of fall. Increased knowledge and increased medical activity have not been associated with that acceleration in the fall of the phthisical death-rate which we should have anticipated.

Professor Pearson's *statistics* must be considered, and the sooner the better. They seem to me to emphasise the points which I have drawn attention to at the beginning of this paper. We need not be disheartened by his *inferences*; for by overlooking the fact that age and environment bring about a certain immunity to tuberculosis he has obviously been led into error.

Professor Pearson's charts, however, showing the rapid decline in mortality until recent years are worthy of consideration. To many they will be startling, but there is, indeed, nothing very surprising in them to those who recognise that the welfare of children has been most seriously compromised by the current unhygienic system of feeding them, together with the unhygienic state of the mouth and alimentary canal which has resulted therefrom. Still less will his statistics cause surprise among those who recognise also that adenoids and diseased tonsils are common roads of entrance to the tubercle bacilli.

Let us, however, leave out of account considerations with regard to the causation of adenoids, upon which subject there is still marked difference of opinion. Let us consider solely the fact that about 40 per cent. of children suffer from "extensive and injurious decay of teeth,"[5] and that dental caries "must be considered as an outward and visible sign of methods of living which produce other and still greater harm."[6]

Surely, when we consider such facts it is obvious that if the medical profession would help in the costless campaign against such methods of living, which cause such disastrous results, it would confer an even greater benefaction on humanity than it has as yet been able to do, for if instead of advocating the "worst possible" it were to introduce the hygienic—the obviously physiologically correct system—an untold amount of suffering and disease would assuredly be prevented.

Harley-street, W.

[4] Brit. Med. Jour., Jan. 14th, 1911.

[5] Sir George Newman: Report of the Chief Medical Officer of Board of Education.

[6] The Prevention of Dental Caries. James Wheatley, M.D. Lond., D.P.H., School Medical Officer, Salop County Council.

A NEW METHOD OF COUNTING LEUCOCYTES.

BY R. A. P. HILL, M.B. CANTAB., D.P.H.

THE advantage of the method here described is that a total and differential count may be done simultaneously, the whole process taking about ten minutes or less. The only apparatus needed besides the usual Thoma pipette and slide is a small cylindrical tube graduated and corked. The tube of a Haldane's hæmoglobinometer cut down to the level of the 120 mark is very convenient. Liquor potassæ will clean it after use. The diluent must be made up at the time. Its composition is: Distilled water, 12 parts; acetone, 3 parts; methyl alcohol, 1 part; and Wright's modification of Leishman's stain, 4 parts.

This reagent is used as the diluent for the blood in any dilutions from 1 in 200 to 1 in 10. The red cells become almost invisible, the leucocytes stain just as they do in a film, and can be distinguished without the least difficulty. A dilution of 1 in 100 will give some 80 cells on the big square of a Thoma-Zappert slide, which is quite a large enough number to give an accurate total count, and there is no difficulty in finding 300 cells in other parts of the field for the differential. In marked leucopenia a 1 in 10 dilution enables one to find as many cells as are needed in a few minutes. There is no overstaining or precipitation in the course of two hours; there is no difficulty arising from unequal distribution or distortion or bad staining, such as one meets with in film preparations, especially if made on a slide, and in many cases one glance is enough to reveal the condition—as, for instance, a marked eosinophilia, or excess of lymphocytes, large mononuclears or polymorphic cells.

The stain will keep for several hours if corked, but it is best to prepare just enough for use each time; that is the purpose of the small cylinder. With a hæmoglobinometer tube 24 divisions of water and the rest in proportion is enough for a 1 in 100 pipette if it can reach to the bottom.

Besides the absolute cleanliness and the purity of reagents necessary for all blood work, three precautions must be observed.

1. *The Wright's stain must be filtered. It is best to do this at the time of making it up.* I grind up a tabloid with 10 c.c. of methyl alcohol and filter. About 3 c.c. are lost by evaporation, so I grind up the residue in the mortar with another 5 or 6 c.c. of alcohol and pour it through the filter till 10 c.c. have come through. I keep the same filter paper for months, so that the solution is saturated. If now 2½ c.c. of methyl alcohol are added direct to the filtered stain there is no need to add it separately in making up the diluent fluid; instead one can add 5 parts of this diluted stain after the acetone. This dilution in no way impairs its utility for staining films, but is in some ways an advantage, as one need not trouble to prevent evaporation, since it does not so easily precipitate. If well corked it appears to keep for a long time.

2. *The mixture must be very well shaken.* If this is not done a froth will form in the bulb of the pipette.

3. The various operations of mixing and putting the drop on the slide must be done with promptness; especially must the drop be covered as soon as possible, as the cells settle quickly and the acetone evaporates readily. For this reason I imagine a counting chamber with an air inlet would not be very suitable.

If these precautions are observed the method is both simple and satisfactory. The cells are best seen with the flat mirror and when the condenser is screwed down and the diaphragm half closed. A thin cover-slip and high magnification may be used.

I have tried to preserve the red cells for counting also with various modifications of reagent and method, but so far without any success. As the acetone evaporates they become visible, but this is not till after a long while, and they appear to be in clumps. All the methods I have yet tried have resulted either in clusters of red cells or diffuse staining of the leucocytes. It would obviously be a great advantage if a red, white, and differential count could all be done in one operation.

This method was suggested to me by the work of R. Dunger, who described a similar method of demonstrating eosinophilia, by using eosin dissolved in dilute acetone as a diluent.[1]

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A CASE OF CEREBRAL MALARIA: RECOVERY AFTER 48 HOURS' UNCONSCIOUSNESS.

BY W. THOROLD QUAIFE, M.B., CH.M. SYD., D.T.M. & HY. CAMB.

THE patient was a native of Ysabel Island, aged 18, strong, healthy, and well-nourished, and was employed on a small sailing vessel. On August 25th, 1911, he worked in his usual health during the day. He helped to heave up the anchor at 11 P.M. At 12 midnight he suddenly fell down "with violent convulsions" and deep unconsciousness. He soon became quiet and remained so all night.

August 26th, 10 A.M: Patient was brought to me. Deep coma present; corneal reflex absent; pupils moderately dilated, equal, reacting slowly to light. Temperature 101° F.; pulse 160, volume and tension medium; respiration rapid and stertorous. The whole muscular system was completely relaxed. No physical signs noted in chest. Abdomen retracted, soft; spleen palpable 2 inches below costal margin, with firm, thick, rounded border. Liver just palpable, soft. No jaundice present. 10.15 A.M.: Quinine bihydrochloride, gr. 30, dissolved in 6 oz. water, given by the rectum. Distinct resistance to movement in arms felt. Fresh films of blood taken now showed a few half-grown pigmented malignant tertian malaria parasites. 11 A.M.: Occasional convulsive movements of arms and hands and facial muscles noted. Later corneal reflexes appeared, and marked resistance to passive movements of arms. Lower extremities soft and flaccid throughout. 3 P.M.: Pulse 150, softer; temperature 101°; respiration more laboured, all the accessory muscles of respiration being called into play. Corneal reflex just present. Quinine bihydrochloride, gr. 30, given by the rectum. 10 P.M.: Respiration rather easier; pulse 140, very feeble; temperature 101°. Corneal reflex present. Continuous movements of arms, hands, and facial muscles now very marked. Quinine bihydrochloride, gr. 30, given by rectum.

August 27th, 6 A.M.: Temperature 100°; respiration quite easy; pulse 116, tension fair, very much improved. The patient was unconscious, but all the reflexes were present except in the lower limbs. He turned his head in the direction of any loud noise. The lower extremities were flaccid and there was no resistance to passive movement. He resisted passive movement to the arms and head. There was now present slight icterus, to be noted in the sclerotics. He immediately rejected any fluid put into the mouth, with thin pus from a rather marked condition of pyorrhœa alveolaris. Bladder emptied by catheter. Bowels moved under him later in day. 6 P.M.: Condition generally unchanged. Pulse 110, rather improved. Still unconscious. 12 midnight: Much brighter, but still quite dazed. Moved legs with some difficulty. Later he sat up and then lay down on the floor, and passed urine naturally. No quinine was given to-day.

August 28th, 6 A.M.: Pulse 100, good quality. Stupid, and could not understand much that was said to him. Could walk with support though the legs were slightly ataxic. Took and ate biscuits given him, but immediately rejected quinine. Slept most of the day.

August 29th: A little weak but quite sensible and walked quite well. Pulse 90, good; temperature 98°. Quinine bihydrochloride, gr. 15, given in solution by the mouth and retained.

Later the boy made a complete recovery and no complications ensued.

Gavutu, Solomon Islands.

[1] Münchener Medizinische Wochenschrift, vol. lvii., p. 1942.

Dr. J. J. van Loghem, an Amsterdam bacteriologist who was sent out to investigate the epidemic of plague in Java, has now returned, and has received the thanks of the Government for the valuable assistance which he has afforded to the colonial medical officers.

Medical Societies.

ROYAL SOCIETY OF MEDICINE.

SECTION FOR THE STUDY OF DISEASE IN CHILDREN.

Tuberculous Joint Disease in Children.

A MEETING of this section was held on Dec. 15th, 1911, Dr. G. A. SUTHERLAND, the President, being in the chair.

A discussion on the Treatment of Tuberculous Joint Disease in Children was opened by Mr. A. H. TUBBY, Sir ANTHONY A. BOWLBY, and Dr. A. BUTLER HARRIS.

Mr. A. H. TUBBY'S address, dealing with the "Indications for Surgical Interference in the Treatment of Tuberculous Joint Disease in Children, with Remarks as to the After-Results," will be found at p. 4.

Sir ANTHONY A. BOWLBY, dealing with the "Results Obtainable without Operation," said that tuberculous disease of the joints in children stood in a different position from similar diseases in the adult because of the much greater powers of resistance and repair shown in the tissues affected. He alluded to the pathological processes of tuberculous infection of the bone, pointing out how rapidly and extensively bone might be absorbed in children, and how exceptionally suppuration occurred. Growth of new bone in the child was very rapid, and it was this absorption of tubercular bone and the growth of new bone that enabled the tubercular joints of children to repair themselves so remarkably. The soft parts in the child also had this power of repair denied to the adult. But these powers of repair must depend largely upon the health and nutrition of the child, whence it was imperative to attend to the general health. Good and plentiful food of an easily assimilable nature, in which milk played an important part, was essential. The bowels should be regulated, and iron, cod-liver oil, and malt administered. All possible sources of ill-health should be attended to, especially tonsils, adenoids, and carious teeth. The local treatment of the joint by splints was considered, and a recumbent position for a time, even when a joint of the upper limb was involved, was insisted on. Stress was laid on the importance of open-air life. He thought he had seen tuberculin do good in some cases. The advent of asepsis had completely altered the whole picture of tubercle in joints, for death was more often caused by sepsis than by tubercle. In dealing with abscesses the greatest possible care was necessary both to prevent the joint becoming septic, and not to infect neighbouring tissues with tubercle. His treatment of abscess was aseptic incision and temporary drainage. Even with open and septic sinuses in the larger number of cases the limb could be saved by directing one's efforts to the general health of the child, by doing all that could be done locally, and by vaccines to obtain an aseptic condition. He amputated less and less frequently for even apparently desperate conditions, for he had seen children recover from most extensive emaciation and amyloid disease, with hectic fever, when treated conservatively. In many cases treated early and for a sufficient time he had seen complete restoration of function, and except for a little impairment in bulk of the limb it had been impossible to tell which joint had been involved. He considered that almost all cases taken in the early stages were really curable in the widest sense of the term. In his experience tuberculosis of the lungs or the glands was a very rare complication. Occasionally general tuberculosis occurred. In some cases the disease was multi-articular. In concluding, he gave a very favourable view of the curability of tubercular joint disease in children, expressing his opinion that what was wanted was increased accommodation in hospitals in the country for the treatment of the disease.

Dr. A. BUTLER HARRIS, dealing with the Rôle of Vaccine Therapy, said that the Royal Commission in its final report had published evidence which went to prove that a considerable amount of tuberculosis in childhood was to be ascribed to infection with bacilli of the bovine type, transmitted in meals consisting largely of cow's milk. It was generally recognised, though not sufficiently guarded against, that tubercle bacilli were abundantly present in the milk of cows with tubercular disease of the udder. But bacilli might be present in the milk of tubercular cows showing no evidence of such disease, even when examined post mortem. Amongst working-classes environment as well as food was an important factor, and it must be admitted that a very considerable number of bacilli found in the joints of children gave the human reaction. As far as was known at present, it did not appear to matter much clinically whether, in the joint affections of children, the strain was of human or bovine origin. The same tuberculin appeared to do well in every case, and the opsonic indices came out equally whether one or other strain was used. It mattered, however, in respect to the general hygiene of the child, for the surroundings must be as free from tubercle bacilli as the food. In the diagnosis of tubercular affections of the joints massive injections of the old tuberculin had been abandoned; Calmette's reaction was out of favour with many, and von Pirquet's reaction, although trustworthy as to the diagnosis of tuberculosis in the human subject, could not differentiate the site of a particular lesion. The estimation of a series of tuberculo-opsonic indices was undoubtedly of use in diagnosis. The method of estimating the indices was described. In spite of the objections raised and the liabilities of error the method was of considerable use in diagnosis. Two methods of treatment were discussed: (1) Methods producing auto-inoculation; and (2) administration of tuberculin. Auto-inoculation was feasible only in the method of passive congestion, and in such the dosage could not be regulated, and a steep negative phase might result. The method was practicable only in joints distal from the trunk, and distal joints were clearly less liable to pour an excess of inoculating material into the body than the proximal ones, and it was interesting that ankles and wrists did better than knees and elbows in this method; it was not commended for hips and shoulders. The advantage claimed for this method was that an autogenous vaccine was introduced. This, however, was of little moment, since there was no evidence that one strain of tuberculin was better than another for therapeutic inoculation. The conditions and mode of administration of tuberculin were fully discussed, and the somewhat divergent information as to the value of tuberculin, received in answer to a circular letter sent to 13 hospitals, was presented. It was concluded that tuberculin, given in small doses under conditions of surgical rest, tended to accelerate the rate of recovery. It was generally the practice to administer Koch's T.R. of human origin whether the infection was of the bovine or human strain, and children, on the whole, did better on this than on the bovine strain. It was not necessary to use the opsonic index during the whole course of treatment, provided the case was clinically pursuing a favourable course.

Mr. ROBERT JONES (Liverpool) agreed as to the difference between tubercle in the adult and in the child. In the early stage in children tubercle nearly always ran a benign course if attention was paid to the affected part having absolute rest and the child having good food and good country air. He emphasised the importance of the children being out of doors both day and night. Immobilisation of the joint should be complete, and care should be given to the position of the limb, which he described in detail. He believed children were often taken out of their splints too soon. He described his tests of recovery. He never opened an abscess until it came to the surface, and then only by a very small puncture.

Sir W. WATSON CHEYNE said that he practically never operated now for a tuberculous joint in the child. Tuberculous disease of joints seemed milder than formerly; whether the bacilli were less virulent he did not know. There were diseases which gradually died out. The modern mode of living was certainly more hygienic. He did not think that operation for such disease in children could be put out of mind altogether. In the early stage when the disease was in one focus, removing that focus produced the best results. In the treatment of abscesses he employed antisepsis and asepsis, opened freely, and scraped them out. He always used tuberculin, and thought it did no harm, but he had not yet seen a definite good result which he could attribute to it.

Mr. H. J. GAUVAIN (Alton) ardently supported conservative treatment, but was fully alive to the importance of radical treatment in special circumstances. In his experience in many cases the course of the disease could be foretold, and if it were likely to run a serious course he believed in early operation. Abscesses he invariably aspirated. These children should be treated in the best country air and in specially equipped country hospitals. If all early cases were so treated he believed that there would be about 95 per cent. of recoveries, mostly without deformity.

Mr. J. JACKSON CLARKE raised the point as to the number of cases apparently cured in infancy in which recurrence took place in later life. He had not seen a case ameliorated by tuberculin which had resisted other treatment.

Mr. W. G. SUTCLIFFE (Margate) emphasised the long time these cases required to heal, the average time for a tuberculous knee or hip being four or five years. Hip cases did best if continually kept in bed for many months. He used tuberculin but had seen no definite results from it.

Mr. E. M. CORNER said that if there was an abscess the case would sooner or later come to operation, and he preferred to incise the abscess, wash it out, and employ temporary drainage. With regard to the number of cases that got well without operation he urged the importance of accurate diagnosis. The diagnosis of a tuberculous hip was really a diagnosis of inflammation of the joint, the tuberculous nature being a matter of assumption, to which little weight was added by opsonic estimation. He had seen many cases regarded as tuberculous and answering the tests which were not really due to tubercle. He thought that many so-called tuberculous joints which got well were instances of infection of the joints by another organism, and not by the tubercle bacillus. His experience with tuberculin agreed with that of the previous speakers, but he had seen cases which did not improve in the ordinary way suddenly begin to get well when put upon tuberculin. He suggested that some of the successes following tuberculin treatment were due not to it but to some unknown factor not yet understood.

Mr. J. P. LOCKHART MUMMERY advocated and practised conservative treatment, merely opening abscesses through a small incision, removing caseous material, and immediately suturing the wound. In septic infection, after scraping the sinuses, plugging them with gauze soaked in 5 per cent. formalin often gave good results.

SECTION OF BALNEOLOGY AND CLIMATOLOGY.

Treatment of Gastro-hepatic Dyspepsia at Vichy, Carlsbad, and Cheltenham.

A MEETING of this section was held on Dec. 13th, 1911, Mr. G. H. THOMPSON, the President, being in the chair.

Dr. GUSTAVE MONOD (Vichy), in a paper entitled "The Treatment of Gastro-hepatic Dyspepsia at Vichy, Carlsbad, and Cheltenham," briefly sketched and contrasted hydrological treatment as carried out at Vichy, Carlsbad, and Cheltenham, and pointed out that cases of gastro-hepatic dyspepsia might be treated with equal success at each of these health resorts. He particularly emphasised the fact that chemical analysis of the waters did not explain their therapeutic effect, and further, that waters of widely different chemical composition produced the same clinical results. He affirmed that the clinical standard was the only reliable one and should form the basis of all hydrological treatment. He had been particularly impressed with the therapeutic resources of Cheltenham, and gave it as his opinion that the waters of this spa, if they were hot, would unite the merits of Vichy with those of Carlsbad a combination which would confer world-wide renown on a British health resort. He deplored the meagre quality of the literature on Cheltenham from a clinical point of view, and maintained that, unless well-defined clinical indications were furnished, continental physicians would not feel encouraged to send their patients to an English spa.

Dr. C. W. BUCKLEY emphasised the value of comparative studies of spas such as Dr. Monod had laid before them. He deplored the fact that Cheltenham did not make more use of its waters, which possessed unique qualities. He briefly discussed the origin of the under-current douche as used at Vichy, and said that while Plombières claimed its invention it probably originated independently at many different spas.

Dr. S. P. SUNDERLAND also discussed the paper, and Dr. MONOD replied.

DEVON AND EXETER MEDICO-CHIRURGICAL SOCIETY.

Diagnosis and Treatment of Carcinoma of the Rectum.

A MEETING of this society was held at the Royal Devon and Exeter Hospital on Dec. 9th, 1911, Mr. J. M. ACKLAND, the President, being in the chair.

Mr. H. J. WARING (responding to a request from the President and Council of the society) gave a lecture on the Diagnosis and Treatment of Carcinoma of the Rectum. He began by briefly referring to the anatomy of the pelvis, laying special stress on the distribution of the lymphatic and vascular systems and the peritoneal attachments. He pointed out that next to the stomach the rectum was the most often invaded portion of the alimentary tract. He considered that errors in diagnosis were as a rule made rather through incompleteness in examination technique than through ignorance. For this reason he advocated a routine method of examination on the following lines where rectal disease was suspected: 1. Inquiry into the history of the case, and if possible the inspection of a bowel evacuation without aid of aperient or enema. 2. Local examination, preceded by aperient or enema. This local examination should include: A. Inspection of anal ring. B. Digital examination, in: (*a*) left lateral position; (*b*) genu-pectoral position; (*c*) sitting position (here growths become sometimes accessible where otherwise no abnormality could be detected in the bowel); (*d*) bimanual, either with or without the aid of an anæsthetic (in the case of the female the combined vaginal and rectal examination was extremely valuable); and (*e*) instrumental by the proctoscope (two forms of which were shown to the meeting). Mr. Waring lamented the fact that patients were treated for coexistent piles or by dilatation with bougie for stricture when an examination conducted on the above lines would in many cases have revealed disease at a moment when the question of operation for its complete removal could be hopefully laid before the patient. He also counselled the advisability of removing at the time of examination a small portion of growth in doubtful cases. In the case of disease at some distance from the examining finger the growth could be conveniently removed through the proctoscope by specially constructed forceps. The portion so taken away might show the presence of squamous-celled carcinoma when removed from the lower two inches of the bowel; columnar-celled carcinoma, (adeno-carcinoma, scirrhus carcinoma, or colloid carcinoma); or sarcoma, extremely rare and only noted once in his personal experience, the patient being a boy. Secondary growths might be found in: (*a*) the inguinal glands (growths in the neighbourhood of the anal margin frequently spread to these glands); (*b*) sacral; (*c*) lateral pelvic; (*d*) lumbar; and (*e*) supraclavicular (invasion of these glands occurred in advanced cases and indicated disease in the upper bowel and extension *viâ* the thoracic duct; operation here was, of course, entirely negatived). The liver and lung were the organs most frequently the seat of secondary visceral growths. Mr. Waring next dwelt on the points making for or against the advisability of an operation, attaching special importance to the locality of the growth and its exact relation to surrounding structures, such as the bladder, vesiculæ seminales, prostate, or in the female the uterus and vagina. Where invasion of the bladder was suspected, examination with the cystoscope in the male, or the speculum in the female, should always be undertaken before operation was decided upon. If then it was seen that the growth had extended to or through the vesical wall the patient would be saved from a fruitless operation. In the absence of visceral secondary growths lymphatic dissemination was not necessarily a bar to operation. As regards the general condition of the patient the state of the renal functions should be carefully ascertained. Obese patients, and more especially obese male subjects, were the least suitable for the abdomino-perineal operation. Turning to the varieties of operation, there were five classical methods:—1. Perineal (Cripps). Suitable only for growths within reach of the finger. 2. The posterior, or Kraske's, operation with division of the sacrum. The originator did not now recommend it owing to the unsatisfactory position of the resulting anus and the high mortality. 3. The vaginal method. Here disease might sometimes be eradicated by an incision carried through the posterior vaginal wall, and in some cases (one of which was cited by Mr. Waring) excellent results had been obtained, both as to function and freedom from recurrence. 4. The abdominal method which aimed at removal of the diseased portion of bowel and end-to-end anastomosis. A splint could be conveniently employed by means of a rubber tube with one extremity protruding at the anal margin. 5. The abdomino-perineal method. In describing this procedure Mr. Waring strongly cautioned against attempting this operation when obstruction was present, and he advised in such circumstances that an inguinal colostomy should be performed at least two weeks prior to the actual excision

of the diseased bowel. The permanence of the colostomy opening would then, of course, depend on the length of bowel excised and the feasibility of bringing it down. He showed from his own experience that sufficient length could generally be obtained by digital separation of the peritoneum laterally, and in one case he had partially freed the splenic flexure. When excision was undertaken and it was possible to unite the bowel to the anal margin he strongly advised that this should be done. The lumen should be either closed by stitches for a couple of days or a rubber tube sewn in so as to minimise contamination of the wound. From his own personal experience Mr. Waring could speak hopefully of the operation as regarded both functional results and freedom from recurrence, and at the close of his lecture he showed two specimens of excised bowel with extensive growth successfully removed, one of which related to a patient operated upon some five years ago who remained free from recurrence and in the enjoyment of good health.

A vote of thanks, proposed by Mr. A. C. ROPER and seconded by Dr. P. M. DEAS, was unanimously accorded to Mr. Waring. In the evening the society entertained Mr. Waring at its annual dinner, Dr. WILLIAM GORDON being in the chair.

EDINBURGH OBSTETRICAL SOCIETY.

Abdominal Operations for Cancer of the Cervix and Corpus Uteri.

A MEETING of this society was held on Dec. 13th last, Dr. J. HAIG FERGUSON, the President, being in the chair.

Dr. F. J. MCCANN, of London, gave a lantern demonstration with explanation of the technique of the more extensive Abdominal Operations for Cancer of the Cervix and Corpus Uteri. The preliminary operation is performed in a different room, with different instruments and gloves, and is carried out just before the abdominal one. At the first operation the necrosed part of the cervix is scraped and cauterised with the iron cautery. The vagina is swabbed with a 5 per cent. solution of silver nitrate, the excess dried out, and a large piece of iodoform gauze is packed into the vagina and so arranged as to admit of easy removal. The patient is then wheeled into another room and placed in the Trendelenburg position. Dr. McCann described in detail the abdominal operation by which the uterus, appendages, and parametrium are removed, the cancer being enclosed in a bag of vagina. Cystitis after operation is prevented by emptying the bladder by catheter every four hours from the first day onwards, so that the urine is not allowed to accumulate in the bladder, and on each occasion it is completely emptied. A certain amount of vesical paresis is present in every case owing to the extensive separation of the bladder. Dr. McCann had in 41 cases of cervix carcinoma a mortality of 2, though in 1 case he was not responsible for the after-treatment, and in 24 cases of cancer of the body of the uterus he had 1 death.

Dr. A. H. F. BARBOUR was very much interested in Dr. McCann's paper and more particularly in his good results. The importance of tying the ovarian arteries was obvious. He was surprised to see the frequency of cancer of the body of the uterus in comparison with cancer of the cervix in Dr. McCann's series of cases.

Dr. N. T. BREWIS said that Dr. McCann's description of the operation was the clearest he had heard or read. The operation was commonly called Wertheim's, but he should not get the credit of it because the only part he was entitled to was the use of vaginal clamps; many others had worked at it before Wertheim. Until quite recently he (Dr. Brewis) had considered that the vaginal operation gave as good results as the abdominal: at any rate he felt that if the disease was not confined to the uterus there was no good doing any other operation. Now, however, he was a convert to the abdominal operation, which gave the possibility of determining whether the case was operable or not. He agreed with Dr. McCann that cancer of the body was almost as common as cancer of the cervix and almost as virulently malignant.

Professor J. A. C. KYNOCH (Dundee) mentioned that from observation at his visits to German clinics they got the cases in a much earlier stage than surgeons did in this country. His own experience of vaginal hysterectomy was very discouraging. The protection of the abdominal wound was of great importance in order to prevent infection.

Dr. W. FORDYCE said that his results had been somewhat disappointing with Wertheim's operation. As regards separation of the bladder, he considered if there was any risk of tearing into the bladder because of infiltration, then the operation had better not be continued, because there was probably infection.

Mr. E. W. SCOTT CARMICHAEL considered the abdominal operation the only operation which could be entertained on scientific and pathological grounds for the radical cure of cancer, and he never intended in the future to do a vaginal hysterectomy for an operable case of cervical cancer. Wertheim in his recently published results had in 500 cases a mortality of 15 per cent., while Dr. McCann in 41 cases had 2 per cent. These latter good results were due to the excellent technique of Dr. McCann. He was convinced that in pelvic operations it was necessary to do an anatomical dissection as far as possible. Ligaturing in a mass was objectionable.

The PRESIDENT said Dr. McCann had shown that the mortality of abdominal hysterectomy for cancer could be brought down practically to that of vaginal hysterectomy. It was absolutely impossible to remove all the glands from the pelvis and abdomen. It was known that in only one-third of the cases of cancer of the cervix were the glands post mortem found to be involved at all, and these were chiefly in advanced inoperable cases. In his experience, recurrence took place not so much in the glands as in the scar. The great advantage of the abdominal operation was that one could isolate the infective mass and prevent recurrence; the main point was to remove the parametrium.

Dr. MCCANN, in reply, said that the clamp used by Wertheim was not his own, and the idea of closing the bag of the vagina was done long before his time; but Wertheim had definitely and consistently followed this operation for many years and had placed on record the largest number of tabulated cases. Entire removal of glands was not possible, but as thorough a removal as possible greatly improved the after-results. An interesting point was that in the abdominal operation the recurrence was in the glands, whereas in the vaginal operation it was in the scar. The complete separation of the bladder should not be done until after the ureters had been separated. His objection to previous curetting some days before was that it was apt to be followed by sepsis and inflammation of the bladder, owing to the packing becoming infected. The selection of cases was very important, lest the operation should be brought into discredit. His object had been mainly to show the results obtainable by attention to technique and especially to hæmostasis.

ROYAL ACADEMY OF MEDICINE IN IRELAND.

SECTION OF SURGERY.

Veno-venostomy in Ascites.—Volvulus of the Spermatic Cord.—Treatment of Surgical Tuberculosis by "Dioradin."

A MEETING of this section was held on Dec. 8th, Mr. W. I. DE C. WHEELER being in the chair.

Sir CHARLES BALL read notes of a case of Ascites in an alcoholic woman. On Nov. 30th, 1910, she was treated by lymphangioplasty, but this operation was unsuccessful in preventing the accumulation of ascitic fluid. On Dec. 21st an incision was made on the left saphenic opening down the thigh over the course of the vein for about 10 inches. The vessel was ligatured and cut across below and dissected out up to the point at which it went in deeply to join the femoral vein. The abdomen was opened by an oblique incision over Poupart's ligament, and the lower edge of the peritoneal incision was separated from the pelvis until the femoral ring was exposed. The cut end of the saphena vein was brought through the canal into the subperitoneal tissue. An incision was made through the outer layer of peritoneum of the meso-colon, and a large sigmoid vein was found. By separating the peritoneum from the incision in the meso-colon the primary wound in the abdominal wall was easily reached, so that the saphena vein could be brought up into the meso-colon extraperitoneally. The intestinal vein was anastomosed into the saphena vein, and on removing the clamps blood was seen flowing into the saphena vein without leakage at the line of

union. Before closing the abdomen the side of the silk drains on the opposite side were felt, and it was found they had been smoothly covered by lymph and were useless. Recovery was rapid, but fluid re-forming moderately she was tapped again on Jan. 18th. She remained well until two months ago, when she began to drink heavily, and the fluid re-formed. Had she given herself fair-play she probably would have remained longer well.—Mr. WHEELER said that what Talma and Morison had attempted had been successfully accomplished by Sir Charles Ball. He had found the Talma operation to work well in a case of ascites, but no patient suffering from jaundice, cirrhosis of the kidney, or heart affection could be considered suitable for such an operation. Patients suffering from atrophic ascites were the most favourable cases.—Mr. K. E. L. G. GUNN said he had once attempted to anastomose the ovarian and portal veins, but failed. In these Morison cases the patient either improved immediately or there was no improvement at all. If the improvement was due to the anastomosis being satisfactory, one would expect it to be of a gradual nature. He would prefer to try the operation suggested by Sir Charles Ball.—Mr. R. A. STONEY said that although he considered the operation of Sir Charles Ball an excellent one, lymphangioplasty could not be dismissed as an absolute failure. In a case of polyserositis he had found it most satisfactory.—Sir CHARLES BALL, replying, said his results with lymphangioplasty had been most disappointing.

Mr. A. A. MCCONNELL read notes of a case of Volvulus of the Spermatic Cord in a boy of 15, who was suddenly seized with severe pain in the right groin when he was sitting on his right foot with that leg crossed tailor-fashion beneath him. He had several attacks of vomiting. Strangulation of an incomplete inguinal hernia was diagnosed, and the case was operated on. The external oblique aponeurosis having been defined, what appeared to be the fundus of a hernial sac presented between the pillars of the ring. On opening the sac what appeared to be a coil of intestine was seen, covered by peritoneum and intensely congested. The sac came to an end at the internal ring, and the coil of supposed gut did not pass to the region of the ring. The finger could be passed freely downwards into the tunica vaginalis. The testicle was pulled up, and the supposed coil of intestine was found to be formed by a loop of the spermatic cord twisted on itself for two turns. All the constituents of the cord, including the vas, were included in this twisting of the loop. As the condition of the vessels would be incompatible with the maintenance of the blood-supply of the testis, and as necrosis of the latter often ensued after untwisting the cord in cases of torsion, the testicle was removed. The testis was apparently normal and could be palpated without pain or tenderness. The only explanation for the absence of testicular swelling was that probably the arteries and veins had been occluded simultaneously, so that marked venous congestion could not take place.—Mr. WHEELER and Sir CHARLES BALL found it difficult to understand how an ordinary torsion of the cord could occur.—Mr. STOKES spoke of his experience of two cases of this kind. In neither was there any trace of atrophy in the testicle after the torsion had been reduced.—Mr. STEVENSON asked if it was found easy to untwist the cord.—Mr. MCCONNELL, in reply, had no theory to advance as to the causation of the condition. He did not think, seeing the way the cord was involved, that the blood-supply of the testis could have been carried on by that of the tunica. It was fairly easy to untwist the cord, but that did not satisfy him as to its safety. In another such case he would be inclined to leave the testis.

Mr. STONEY, in a paper on the Treatment of Surgical Tuberculosis by "Dioradin," stated that Dr. Bernheim visited the Royal City of Dublin Hospital last August and having examined several cases of various forms of surgical tuberculosis gave each patient an injection of "dioradin," leaving a supply to continue treatment. Fifteen cases had received one course of injections. Each course consisted of 40 injections of 1 c.c. or less (according to age) of "dioradin" into the gluteal muscles, the first 30 on consecutive days and the last 10 on alternate days. Dr. Bernheim advised at least two courses of injections given with a fortnight's interval. The results might be summarised as follows. In five cases without secondary infection there was one apparent cure (Case 1, Pott's caries), and the other four cases all greatly improved, and would probably result in cure after further treatment (Case 4, tubercular knee, Case 6, tubercular tarsus, Case 9, advanced tubercular hip, and Case 10, early tubercular hip). In ten cases with secondary infection there was one apparent cure (Case 5, with multiple tubercular foci); two cases were greatly improved and appeared likely to result in cure after a further course of injections (Case 3 and Case 11, both advanced tubercular hips); four cases showed some improvement (Case 2, tubercular cystitis, Case 13, tubercular peritonitis and fibroid phthisis, Case 14, lupus, and Case 15, phthisis and enlarged cervical glands). And finally three cases showed no improvement (Case 7, multiple tubercular foci, Case 8, hip disease, and Case 12, tubercular cystitis). Of these three, the case of cystitis was distinctly worse, but there was no reason to suggest that the treatment was to blame for this; he was admitted to hospital only to try to get him sufficiently improved to allow him to go back to the country to die. The disease had lasted several years, and his kidneys were almost certainly affected also. The case of the hip was never proved to be tubercular; and in any case the septic element present always appeared the more important. The case of multiple tubercular foci, after improving, developed whooping-cough and relapsed; however, a few days ago he was reported almost perfectly well, only one very small sinus still remaining with a very slight daily discharge. Many of these cases had already been in hospital under various forms of treatment without improvement for many months before the injections of "dioradin" were started.—Mr. WHEELER said it was hard to see how intramuscular use of radium could do good. He attributed the improvement as much to extra attention given to them as the "dioradin."—Dr. W. M. CROFTON referred to the treatment of phthisical cases with iodoform given intravenously or intramuscularly. Combined with tuberculin this treatment had the effect of bringing down the temperature, reducing the sputum in advanced cases. Iodoform obviated the reaction after tuberculin. He had seen "dioradin" fail in three advanced cases of pulmonary tuberculosis.—Mr. STEVENSON said it was of interest that those cases in which there was no secondary infection gave the best results. He suggested combining "dioradin" treatment with a vaccine for the secondary infection. The great objection to the use of the drug was the uncertainty as to its exact composition.—Dr. T. P. C. KIRKPATRICK was not favourably impressed by it so far. He had not yet seen any case which could be called a "cure."—Mr. STONEY, replying, said that most of his patients had been under treatment for a considerable time without improvement, but that as soon as "dioradin" was injected it did them some good. It had been definitely demonstrated by test-tube experiments that the combining of radium chloride with menthol and iodine increased its power of destruction of the tubercle bacillus. Some cases of secondary infection thus treated by him had improved considerably.

UNITED SERVICES MEDICAL SOCIETY.—A meeting of this society was held on Dec. 13th, 1911, at the Royal Army Medical College, Major E. B. Waggett, R.A.M.C. (T.), being in the chair.—Fleet Surgeon D. J. P. McNabb, R.N., read a paper on the Functions of Hospital Ships in Peace and War. The lecturer, who has had medical charge of the Royal Navy hospital ship *Maine*, spoke of the services rendered in peace by a hospital ship constantly ready to receive the more serious cases of illness and accident from the fighting ships of the fleet at sea or in places with no suitable accommodation on shore, thus relieving the strain on the sick berth accommodation of the fleet and providing the sick with air-space, nursing, quiet, and general comfort unattainable in a man-of-war. In war time the duties of hospital ships were more exacting and important. It was necessary to clear fighting ships of their wounded as soon as possible after action, both for the welfare of the injured and because a ship encumbered with wounded would be much hampered should it be necessary to renew the action. Many interesting details were given as to the best methods of transport of wounded from the fighting ships to the hospital ships, and the lecture was illustrated by models of appliances for conveying injured men. The best position to be taken up by the warship and hospital ship during the transference, using the larger vessel as a breakwater, so that the boats might have as smooth water as

possible, was dwelt on. When fighting was taking place on land, but in the vicinity of the sea, in many places (such as the West Coast of Africa) the hospital ship was an invaluable accessory, providing the sick and wounded with an accommodation, attention, and comfort otherwise impossible. Another function of hospital ships in peace and war was the transport of large numbers of sick either from the seat of war home or from a foreign hospital to a home one; the Royal Naval hospital ship *Maine* had been largely used for this purpose when not in attendance on a fleet and by so doing had greatly relieved the congestion of foreign hospitals and brought the sick to a climate where their prospects of speedy recovery were considerably enhanced. The lecturer stated that in his opinion the ideal hospital ship was one of from three to four thousand tons, with a speed of about twelve knots, and with accommodation for about 240 sick in peace time, which accommodation could be increased in war time by about 100. Fleet-Surgeon McNabb also considered it desirable that each hospital ship should have four wards on the boat deck for cases of infectious disease.—Deputy-Surgeon-General J. J. Dennis, R.N., Major W. S. Harrison, R.A.M.C., Major Waggett, and Inspector-General R. Bentham, R.N. (retired), took part in the discussion.

LEEDS AND WEST RIDING MEDICO-CHIRURGICAL SOCIETY.—The first clinical meeting of this society was held on Dec. 15th, 1911, Mr. H. Littlewood, the President, being in the chair.—The President showed eight cases of Gastric Ulcer successfully treated by excision of the ulcer. In each case a cure had resulted.—Dr. H. H. Greenwood showed a case of Melanotic Sarcoma of the Neck in a man aged 67, treated periodically for eight months with Coley's fluid, with apparent recovery.—Dr. A. G. Barrs showed a man, aged 36, who exhibited all the classical signs and symptoms of Locomotor Ataxia, which began after a very severe shock. There was no history or sign of syphilis.—Mr. W. Thompson showed a case of Gastro-enterostomy, with Recurrent Symptoms, in a man aged 29; also a case of Xerostomia in a female aged 23, associated with recurrent swelling in the parotid gland.—Dr. W. H. Maxwell Telling showed a case of Unilateral Facial Sweating of 12 years' duration in a male aged 60. Also a case of "Aleukæmic" Leukæmia with a massive Spleen in a man aged 52. The appearance was one of chronic cyanosis rather than of anæmia. The blood showed a high red-cell count and a comparatively low white-cell count; the diagnosis of myelogenous leukæmia was based on the differential white-cell count. The condition was largely stationary, though there had been some general improvement under arsenic.—Mr. H. Collinson showed: 1. A man, aged 41, in whom Symptoms of Musculo-spiral Paralysis followed immediately after fracture of the humerus in March last. At the operation the musculo-spiral nerve was found contused between the fragments. The fracture was fixed with a Lane's plate, and the nerve was protected by muscular tissue. Restoration of function in the extensor muscles commenced after five months, and was already nearly complete. 2. A boy, aged 15, with a similar condition.—Dr. T. Wardrop Griffith showed a case of Lead Encephalopathy with marked Ataxia in a woman of 34. Symptoms of lead poisoning began after taking certain pills.—Mr. J. F. Dobson showed a man, aged 35, who fractured the lumbar spine in July last. On Sept. 1st laminectomy was performed (first, second, and third lumbar vertebræ), and the cauda equina was found compressed and the dura mater torn. The patient was now commencing to walk with the aid of a walking chair.—Dr. Alexander Sharp showed a case of Hyperplasia in a female aged 21, involving the lingual tonsil, epiglottis, aryepiglottic folds, and the arytenoids, and unaffected by any form of treatment.—Mr. R. Lawford Knaggs showed a woman, aged 26, admitted in December, 1908, for a Pistol Wound of the Brain, upon whom trephining was performed. The skiagrams showed the bullet in the right occipital lobe, some distance above the tentorium.—Cases were also shown by Dr. T. Churton, Mr. J. A. Coupland, Mr. A. L. Whitehead, and Mr. G. Constable Hayes.

NORTHUMBERLAND AND DURHAM MEDICAL SOCIETY.—A meeting of this society was held in the Royal Victoria Infirmary, Newcastle-on-Tyne, on Dec. 14th, 1911.—After a demonstration of the Use of the Œsophagoscope under local anæsthesia on a series of patients suffering from carcinoma, stricture following nitric acid burns, doubtful stricture—i.e., a female patient who had had attacks of obstruction intermittently for years, Mr. C. W. M. Hope delivered an address on Carcinoma of the Œsophagus. He referred to the unsatisfactory means hitherto used in the diagnosis and treatment of the condition, and considered its symptomatology and pathology. Under "examination of the patient" he included in the following order: (1) external glandular enlargement, &c.; (2) mouth, pharynx and larynx, by laryngoscopic mirror; (3) chest, for evidence of aneurysm or pressure of growth; (4) X rays, with the aid of bismuth cachets, meals, &c.; and (5) endoscopic examination, either by local or general anæsthesia. This last was described at length. He classified the treatment under the following headings: (1) dilatation; (2) dilatation with intubation; (3) gastrostomy; and (4) radium, following a dilatation. Dilatation with intubation he considered the most advisable method of treatment, and advocated it strongly. He described a modification of Symonds's tube, a silver flexible stilette being passed through the lumen and a vulcanite front being fixed to it. He referred to several cases in which temporary improvement had resulted from radium, mentioning in particular one case of septic fungating carcinomatous stricture. After 21 months some stricture was still present, but ulceration had gone, and the œsophagus was lined throughout with apparently normal mucous membrane. The patient had gained about a stone and could swallow solid food well. He emphasised the necessity for caution in diagnosing spasm of the œsophagus in middle-aged patients, and quoted such a case with an extensive post-cricoidal carcinoma.—A lantern demonstration illustrating the points brought out followed the address. There was a short discussion.

NEW LONDON DERMATOLOGICAL SOCIETY.—At a meeting held on Dec. 14th, 1911, Dr. P. S. Abraham, the President, being in the chair, Dr. W. Knowsley Sibley showed: (1) A young woman with Bazin's Disease and Scrofulodermia (shown at a previous meeting) to illustrate the beneficial effect of radiant heat treatment, several of the granulomatous areas having become completely absorbed; (2) a young woman, aged 35, with an acute outbreak of Lichen Planus, associated with a chronic seborrhœic condition of the scalp and body; (3) a child of 14 months with Bullous Impetigo affecting the Buttocks; and (4) a boy, aged 15, with Atypical Molluscum Contagiosum upon the Back. The lesions, three in number, were of the size of a small nut and were semi-pedunculated, but the contents of one of them after incision revealed the presence of the characteristic molluscum bodies.—Dr. G. Norman Meachen showed: 1. A man, aged 25, with Lichen Planus, in which the formation of small bullæ had occurred, chiefly upon the legs. The rarity of this complication and its relation to the administration of arsenic were commented upon. 2. A man with a Rodent Ulcer upon the Side of the Nose, following a scratch inflicted 12 years ago. 3. A case of Pruritus and Pigmentation of the Skin in a man, aged 56, who had been informed 10 years ago by a well-known authority that he was suffering from Addison's disease. At the time of the meeting he was a well-nourished man, and he presented a faint macular and scaly eruption suggestive of a pityriasis rosea.

ROYAL SANITARY INSTITUTE.—The next Congress of the Royal Sanitary Institute will be held at York from July 29th to August 3rd, 1912, under the presidency of the Archbishop of York. Sir Shirley Murphy will preside over the Section of Sanitary Science and Preventive Medicine, Sir Thomas Oliver over the Section of Industrial Hygiene, and Dr. Mary Scharlieb over the Section of Hygiene of Infancy and Childhood, while the President of the Conference of Medical Officers of Health will be Professor A. Bostock Hill.

MEDICAL MAGISTRATES.—Mr. John Cosmo Stuart Rashleigh, M.D., B.C. Cantab., L.S.A., has been placed on the commission of the peace for the county of Devon; Mr. Walter Henry Fox, L.D.S. Eng., dental surgeon to the Gloucester Children's Hospital, has been placed on the commission of the peace for the county of Gloucester; and Mr. Matthew Elder, M.B., C.M. Edin., and Mr. William Charles Devereux, M.B., B.C. Cantab., have been appointed magistrates for the Tewkesbury (Gloucestershire) borough bench.

Reviews and Notices of Books.

Sir John Burdon Sanderson: A Memoir. By the late Lady BURDON SANDERSON. Completed and edited by his Nephew and Niece. With a Selection from his Papers and Addresses. With photogravure frontispiece and three portraits. Oxford: The Clarendon Press; London: Henry Frowde. 1911. Pp. 315. Price 10*s.* 6*d.* net.

THIS memorial volume is divided into two parts, about one-half being devoted to the memoir itself and the remainder to reprints of Sir John Burdon Sanderson's papers and addresses. The memoir consists of nine chapters, of which the first four deal with his parentage and boyhood, youth and education. They were written by the late Lady Burdon Sanderson, while for the remaining chapters, dealing with his earlier and later scientific work, his removal to and life at Oxford, and his personal characteristics and opinions, his nephew and niece, J. S. Haldane and E. S. Haldane, are responsible. Much of the biographical detail here dealt with was included in our obituary of this distinguished man, published in THE LANCET of Dec. 2nd, 1905, but it may not be amiss here to cull a few points and considerations not there recorded. He was intended, we are told, for the profession of the law, but as a lad his inclinations turned towards natural science, and his early relationship with Dr. Mortimer Glover led him to the choice of the profession of medicine. He matriculated at the University of Edinburgh on Nov. 2nd, 1847, in the name of John Scott Sanderson. It was not until a few years later that he habitually adopted his father's ancestral name of Burdon. The professors that most influenced him in his early professional career were Balfour (botany), Goodsir (anatomy), and Hughes Bennett (institutes of medicine). It is stated that in 1841 the microscope, now so familiar to every student, had not found its way into either the ward or the physician's consulting room. He duly became, like so many prominent Scottish physicians and surgeons, president of the Royal Medical Society, and interesting extracts are given from the address he delivered before that society.

In Paris he studied organic chemistry under Wurtz, and followed the lectures of Coste on embryology and those of Bernard on physiology. There can be little doubt that to the influence of Bernard is largely due the benefit which Sanderson derived from his residence in Paris during 1851–2. In 1853 he married Ghetal, elder daughter of the Rev. Ridley H. Herschell, and "the happy life in common which then began continued for 52 years." After ten years' service as medical officer of health of Paddington the reason of his retirement in 1865 was the antagonism induced in some of the vestrymen on account of his proceeding to Germany at the request of the Government to investigate the epidemic of cerebro-spinal meningitis then raging in and around Dantzig. His valuable investigations on diphtheria, into the practice of vaccination, and on cattle plague are well known, and have already been recorded in these columns. His later career is followed in detail, including his work at the Middlesex and Brompton Hospitals, the Brown Institute, and University College, London. With the publication in 1873 of the "Handbook for the Physiological Laboratory," by Klein, Burdon Sanderson, Foster, and Lauder Brunton, the crusade against experimental physiology, known as the anti-vivisection movement, came into notice. The foundation of the Physiological Society was one outcome of this movement. Those who are interested in the early history of this still clamant question will find full details in Chapter VI. of the memoir, which deals with Sanderson's later work in London. The story of the storm that broke out at Oxford in reference to the expenditure of £10,000 to equip a laboratory for Sanderson, on his appointment as Waynflete Professor of Physiology, is well told. When the decree was submitted to Convocation on June 5th, 1882, it met with such strenuous opposition on scientific, financial, and humanitarian grounds that it was carried by a majority of only three in a house of 173. The assistance given by Sir Henry Acland was most valuable. Equally vividly the story is recounted of his varied work, success, and stimulating activity during the 23 years (1882–1905) spent at Oxford. Sanderson held that all the processes which a physiologist can investigate are in ultimate analysis physical and chemical in nature, and he saw clearly the importance of intracellular ferments for the solution of difficulties in the physico-chemical interpretation of cell activity. The elaborate paper on Vegetable Reproduction which in 1854 he prepared for Todd's Cyclopædia of Anatomy and Physiology shows the unity of his aims through his long career as a biologist.

No memoir of Burdon Sanderson would be complete without mention of the wife to whom he owed so much. "A more devoted or helpful wife she could hardly have been, and in addition to that devotion she encouraged her husband in his work in every way in her power." Thus the authors, and all who had the inestimable privilege of knowing Lady Sanderson, will agree with this estimate of her. We can well understand that Sanderson never seemed happy when she was not near, and that in his later days this became increasingly evident. Her greatest work was the love and support which she gave so fully and ungrudgingly to her distinguished husband.

We feel sure that many readers will be glad to possess in a collected form the papers and addresses that make up the second part of this volume. They are: On the Excitability of Plants (1884), On the Study of Physiology (1883), Address delivered to the British Association (1889), Presidential Address to the British Association (1893), Ludwig and Modern Physiology (1896), Cellular Pathology (1900), and Our Duty to the Consumptive Bread-earner (1901).

Altogether this is a delightful memoir of a charming, lovable, and striking personality, of a man whose life was devoted unselfishly to the successful pursuit of truth, and who has left the impress of his labours on the progress of that science to which he devoted his life.

A Handbook of Practical Treatment. By Many Writers. Edited by JOHN H. MUSSER, M.D., LL.D., Professor of Clinical Medicine in the University of Pennsylvania; and A. O. J. KELLY, A.M., M.D., Assistant Professor of Medicine in the University of Pennsylvania. Vol. II. London and Philadelphia: W. B. Saunders Company. 1911. Pp. 865. Price £3 15*s.* net the set (three volumes).

THE second volume of this notable work upon treatment fully bears out the promise of the first, which we reviewed in THE LANCET of Oct. 21st, 1911. The subjects included in this volume are diseases of the cardio-vascular system, the infectious and animal parasites. Each article is a carefully written presentation of the treatment of the condition with which it deals and the principles upon which the treatment is based, while the explanation of its effects is given where this is practicable.

The first article is contributed by Sir T. Clifford Allbutt and is devoted to the treatment of diseases of the cardio-vascular system. It extends to 150 pages and affords an interesting and critical account of the treatment of the individual diseases and disorders of the heart and blood-vessels. The arrangement of the subject-matter is good and is convenient for reference, while the literary style in which it is expressed is the dignified but happy one we are accustomed to expect from this distinguished and cultured writer. Sir Clifford Allbutt, while giving his own personal experience of

various treatments, is careful to state the views of other authorities, usually with references. Mr. Clinton T. Dent, in a short article on the surgery of the heart, describes paracentesis of the pericardium, cardiolysis for pericardial adhesions, and the surgical treatment of thoracic aneurysm. In regard to the removal of the fluid of non-purulent effusions into the pericardium, Mr. Dent thinks that incision, with subsequent dissection down to the pericardial sac, ought to be more frequently employed, since he regards it as safer and more likely to succeed than puncture.

The treatment of typhoid fever is discussed in an interesting and exhaustive manner by Dr. Rufus I. Cole. Considerations of prophylaxis and disinfection are first reviewed, and then the subject of prophylactic vaccination is critically examined. The attempts at specific treatment by antitoxins and serums are referred to, and then the general management and nursing of patients suffering from this disease are described. The subject of diet is dealt with at some length, and the various views at present current in regard to the feeding of these cases are subjected to careful criticism. The uses of antipyretic drugs and measures are described in full, and explicit directions in regard to the bathing of these cases are given, together with numerous illustrations in the form of reproductions of photographs. The treatment of symptoms and complications is also fully considered. Dr. John M. T. Finney describes the treatment of the surgical complications of typhoid fever in a short but practical article. The treatment of pneumonia is examined by Dr. Hobart Amory Hare in a well-written and thoughtful contribution. Diphtheria is dealt with in two separate sections: the first by Dr. George H. Weaver, on the specific and general treatment; the second by Dr. John H. Jopson, on intubation and tracheotomy, which are carefully described. The directions given in regard to the administration of antitoxin are explicit, and brief reference is made to the "serum reaction" as a manifestation of hypersusceptibility. Dr. Weaver also contributes the articles on scarlet fever, measles, and rötheln.

The treatment of tuberculosis as described by Dr. E. O. Otis extends to 120 pages with copious illustrations. The principles of sanatorium and home treatment, questions of diet, symptomatic and specific agents, are all discussed at length. Plans and illustrations of well-known sanatoriums are given, and numerous simple methods of carrying out open-air treatment at home are described and figured. Three methods of giving tuberculin are referred to—viz., the tolerance method, by giving small doses and gradually increasing them; the reaction method, giving such doses as will produce a mild reaction; and the opsonic index method of Wright. The first of these is the one recommended. The treatment of syphilis is fully and carefully considered by Dr. G. William White and Dr. Alfred C. Wood. The various methods of administering mercury are discussed, with their relative advantages and disadvantages. The use of "606" is briefly reviewed and a judicial attitude is advised in regard to this substance, and until its place in therapeutics is settled the writers of the article advise the practitioner to follow the older methods of treatment. A useful account of the various methods of treating infection by the gonococcus in its manifestations in both sexes is contributed by Dr. Edward Martin. The treatment of vaccinia, variola, and chicken-pox is described by Dr. Jay F. Schamberg, and that of cerebro-spinal fever, cholera asiatica, and plague by Dr. Llewellys F. Barker, while the subjects of yellow fever and dengue are dealt with by Dr. James Carroll. Dr. Alfred Stengel discusses the treatment of influenza and rheumatic fever in two practical and clearly expressed articles. Tetanus, rabies, anthrax, glanders, actinomycosis, Madura foot, and foot-and-mouth disease are briefly considered by Dr. Joseph C. Bloodgood and Dr. Alexius McGlannan, and pertussis, mumps, miliary fever, and glandular fever by Dr. Samuel McHamill. The treatment of dysentery is dealt with by Dr. Charles F. Martin, that of leprosy by Dr. Isadore Dyer, and that of typhus fever by Dr. John F. Anderson. In the last-mentioned article the importance of the body louse in spreading infection is emphasised, and a brief description is given of recent work upon the communicability of this disease.

The remainder of the book contains some special articles. The first of these is devoted to tropical diseases, which are admirably dealt with by Dr. M. J. Rosenau and Dr. J. F. Anderson. The second, by Dr. D. G. E. de Schweinitz, is devoted to the ocular complications of the infectious diseases, and gives a full and interesting account of the management of these serious and important conditions. A similar article on the aural complications of the infectious diseases is contributed by Dr. Charles W. Richardson, while the surgical treatment of the joint complications of the infectious diseases is discussed by Dr. Joel E. Goldthwait. The treatment of conditions due to animal parasites is considered at length by Dr. David Riesman. A full index is appended to this volume, rendering reference easy.

Delayed and Complicated Labour. By ROBERT JARDINE, M.D. Edin., M.R.C.S. Eng., F.R.F.P. & S. Glasg., F.R.S. Edin., Professor of Midwifery in St. Mungo's College, Glasgow; Obstetric Physician and Gynæcologist to the Glasgow Maternity and Women's Hospital. With 107 illustrations and 3 coloured plates. London: Henry Kimpton. Glasgow: Alexander Stenhouse. 1911. Pp. 351. Price 7*s.* 6*d.* net.

THE readers of Dr. Jardine's work entitled "Clinical Obstetrics" will welcome the appearance of this compact book. In it the author has refrained from publishing the details of illustrative cases, and has contented himself with giving the result of his experience. The work is therefore the outcome of the author's experience and not in any sense a compilation. The amount of material available in the Glasgow Maternity and Women's Hospital is so large that any book written by one of the physicians attached to this hospital must contain much of interest to obstetricians less fortunately placed. But little space, only so much as is necessary to render the part dealing with delayed or complicated labour quite clear to the reader, is devoted in this work to normal labour. On the majority of the problems of obstetrics Dr. Jardine holds clear and well-established views, and the student who consults this work may be sure that he will receive definite instructions as to what should be done in any complicated case of labour and how to set about it. In the treatment of fibroid tumours and ovarian tumours complicating pregnancy and labour the author is in agreement with the best teaching of the day, and deprecates all interference during pregnancy unless it is unmistakably indicated. As he points out, Cæsarean section with hysterectomy at full term is much better than hysterectomy during pregnancy, and in dealing with an ovarian tumour during labour the removal of the tumour and the subsequent delivery of the child through the natural passages is much better than the performance of Cæsarean section.

The cases cited of obstruction caused by the retraction ring or the ring of Bandl are of very great interest. Dr. Jardine accepts the view generally held that the ring of Bandl indicates the union between the upper and lower uterine segments, and that it does not coincide with the internal os, and he points out that cases occur in which the ring itself is the cause of the obstruction to delivery. This may be so either in cases of breech presentation with extended legs, or in normal presentation in which the ring forms in front of the presenting part and itself constitutes the obstruction. He refers to two cases, one under the care of Professor M. Cameron and one

under his own charge. The latter was a most interesting case "in which the membranes were intact and the cervix well dilated, but there was a well-defined ledge round about half of the canal in front of the head." The patient was put deeply under the influence of morphia, but as no relaxation occurred Cæsarean section was performed with a favourable result to both mother and child. Cases have been recorded of obstruction from the retraction ring, even with a normal pelvis. As the author points out, it may form in breech presentations with extended legs above the presenting breech but below the legs, and give rise to delay in the descent of the child. Dr. Jardine suggests that the causes of spasmodic contraction of the internal os may also be the cause of the formation of the retraction ring in these cases. In their treatment the injection of morphia is advised, and then manual dilatation of the ring under an anæsthetic. If this fails, then the performance of Cæsarean section if the child is alive, and even if the child is dead where it is likely that delivery by the natural passages may be dangerous.

Dr. Jardine has had considerable experience of cases of eclampsia, and the chapter devoted to this complication is a particularly good one. His treatment is characterised by a sound conservatism. He does not believe in the view that every case should be delivered as quickly as possible after the fits have commenced. We are glad to see that he lays stress in the preventive treatment on restraining the patient to bed and keeping her warm, a most important injunction. The curative treatment is carried out on the principle of getting the bowels, kidneys, and skin to act. Lately the author has been employing veratrone in doses of 1 c.c. by hypodermic injection, and finds that it has a marked effect in lowering the pulse-rate and tension, and in helping to check the fits. In decapitating, Dr. Jardine uses a modification of the blunt hook to which he has added a knife-edge, and maintains that this form is easier to apply than that of Ramsbotham, while for craniotomy he employs a modification of Auvard's cephalotribe, which seems to be a very efficient instrument.

We can cordially recommend this work as a well-written and trustworthy guide for student or practitioner.

An International System of Ophthalmic Practice. Edited by WALTER L. PYLE, A.M., M.D., Philadelphia. *Pathology and Bacteriology*, by E. TREACHER COLLINS, F.R.C.S. Eng., and M. STEPHEN MAYOU, F.R.C.S. Eng. London: Rebman Limited. 1911. Pp. 558. Price 21*s.* net.

THE need of a small text-book on the pathology of the eye has been long felt by teachers and students. The latter can scarcely be expected to buy an expensive four-volume treatise which has hitherto been the only monograph on the subject in the English language. It is unfortunate that in this case the publishers could not fix the price at a lower figure; none the less, the purchaser will find that he has obtained full value for his money.

The authors have been well advised to adopt a pathological, rather than an anatomical, classification of the disorders and diseases of the eye. Such a scheme places the subject more vividly before the reader and necessitates less repetition. It is the bolder line to adopt, and in many respects more difficult, but it is amply justified by results. The chapters are arranged as follows:—Aberration in development, neoplasms, derangements in the circulating fluids of the eye and of the vessels in which they are contained, injuries, inflammation, parasitic diseases affecting the eye, and degenerations. An appendix on practical methods gives a good *résumé* of the processes used for examining eyes microscopically, mounting macroscopic specimens, preparing vaccines, making Wassermann, agglutination, blood, and other tests.

In the chapter on development Mr. Treacher Collins has gathered together his many researches, amplifying and correlating them into a homogeneous and comprehensive survey. The subdivisions show the same logical sequence that characterises the work as a whole. Aberrations connected with the formation of the primary and secondary optic vesicles are first dealt with, introducing the reader to such anomalies as anophthalmia, cyclopia, coloboma of the retina and optic nerve, and so on. Aberrations connected with the invaginating surface epiblast deal with anomalies of the lens; aberrations connected with the invaginating mesoblast, with such conditions as persistence of the hyaloid artery, atypical development of the vitreous, congenital defects of the suspensory ligament (coloboma and ectopia lentis), and so on. Aberrations connected with the encircling mesoblast are held to account for congenital opacities of the cornea, congenital anterior staphyloma, buphthalmia, abnormalities of the iris and choroid, as well as albinism and melanosis affecting the eye. Lastly, aberrations connected with structures in the line of the orbito-nasal fissure and the formation of the eyelids include lacrymal abnormalities, meningo-encephalocele, cryptophthalmia, dermoids, and anomalies of the lids. The authors should note that *distichiasis* is the correct term, not "districhiasis"; the derivation of the word has nothing to do with that of trichiasis.

The second chapter, on neoplasms, is also excellent. Primary and metastatic new growths and cysts are adequately discussed, the only noteworthy omission being the extradural tumours of the optic nerve. Otherwise every growth of importance has been passed in review, some of the rarest manifestations being mentioned as exhibiting evidence of points important in the general pathology of the eye—e.g., melanotic carcinoma of the ciliary body. Derangements of the vascular systems of the eye include diseases of the vessel walls and their results, diseases due to changes in the blood, toxic amblyopias, and glaucoma. The anatomical part of the section on glaucoma is admirable, but we think that the description of the mechanism for the maintenance of the normal intra-ocular tension requires further elaboration. The authors draw a sharp distinction between "the lymph and the intra-ocular fluid." The latter is the fluid contained in the aqueous and vitreous chambers, and is a definite "secretion modified by the lining epithelium of the ciliary body." Most authors agree that it is lymph, even though it be modified in the manner suggested. The subject is of such surpassing importance in the pathology of glaucoma that it demands very precise and exhaustive treatment, even in a student's text-book. The pathology of increased intra-ocular tension is treated on the familiar lines of the theory almost universally accepted. A short section is devoted to the rationale of the treatment of primary glaucoma. Injuries and wounds of the eye are thoroughly discussed, their importance from the clinical, and especially the operative, point of view being particularly borne in mind.

The chapter on inflammation commences with a most useful review of the changes common to all inflammatory processes. There is a lucid account of the part played by the blood serum, and the many awe-inspiring terms adopted by modern pathologists are fully explained. The cytology of conjunctival inflammation incorporates Mr. Mayou's own work previously published as Hunterian Professor of the Royal College of Surgeons of England. The remainder of this chapter dealing with iridocyclitis, retinitis, and so on, is not quite up to the standard of the other chapters. The parasitic diseases of the eye, including bacteriology, are thoroughly well discussed, as are also the degenerations which affect the various structures.

It is gratifying to be able to give such unstinted praise to the scientific value of this work. The numerous mistakes of

grammar and punctuation, however, seriously detract from the ease and pleasure of reading it. We hope that this blemish will be removed in a future edition. The illustrations and printing are excellent.

Fortschritte der Naturwissenschaften Forschung. Herausgegeben von Professor Dr. E. ABDERHALDEN, Berlin. Dritter Band. Mit 153 text abbildungen. Wien: Urban and Schwarzenberg. 1911. Pp. 352. Price, paper, 16 marks; bound, 18 marks.

WHAT strikes one about this, the third, volume, describing the progress of recent investigations in natural science, edited by Professor Abderhalden, of Berlin, is that such a work would hardly find so large a reading public here as it apparently does in Germany. Even unbound it costs 16*s*. It deals with five subjects which have not much in common. It touches things aerial and things terrestrial.

Privat-docent Dr. A. Wegener, of Marburg, in about 70 pages deals with the recent results obtained in what is a new and vigorous department of meteorology—a department that had its genesis only 20 years ago, but is now a substantial section of meteorology, and is dignified by the name of aerology. The modern methods used for obtaining a knowledge of the condition of the higher atmosphere, such as the varieties of balloons and kites which are in use, are described and illustrated. The temperature, moisture, and other conditions of the upper air are described, cloudland is studied and illustrated, and the whole problem of the physics of the upper atmosphere is fully discussed. Some of the views of clouds as photographed from cloudland are excellent. Next W. Johannsen, of Copenhagen, gives in about 65 pages a very circumstantial account of recent experiments in relation to heredity, including details of his own work on pure strains of beans and other plants. The work of Galton, of Karl Pearson, and others, is passed in review and criticised, and so is that of Darwin. Mendel's work is dwelt on and its importance in relation to the Darwinian hypothesis is pointed out. The zoological aspect of the question is illustrated by observations made on certain forms of water fleas, such as hyalodaphnia. It is impossible to summarise the author's views in a few lines, so that we must refer the reader, and especially the botanical reader, to this highly interesting and technical account of the problems of heredity. The zoologists also will be interested in the results obtained by crossing examples of the obstetric toad (Alytes)—results which can now be explained on Mendelian principles.

About 80 pages are devoted to the history, evolution, and present position of wireless telegraphy and telephony, by G. Eichhorn, of Zürich. This again is an interesting and very technical subject. M. Rikli, of Zürich, deals with the geographical distribution of plants, and remarks that though herbaria were collected, labelled, and described long ago, and the utilitarian aspects of plant life were studied, the geographical distribution of plants is only a comparatively recent subject of scientific investigation. Its founder was Alexander Humboldt (1769–1859), who published his "Essai sur la Géographe des Plantes" in 1805–06. M. Rikli's interesting essay deals with such subjects as heat, moisture, light, wind, condition of soil, and so forth, as they influence plant life over the globe. It gives an excellent summary of the subject dealt with.

Professor H. Klaatsch, of Breslau, promises a series of articles on the origin and transmission of special human characteristics, and in a short paper begins his contributions with "The Story of the Hand." Going back to the geological record to the study of fore-foot prints in the primary and secondary rocks, he begins with the footprints of Cheirotherium, and proceeds to trace the evolution of the human hand from the point of view of the comparative anatomist. Where is Paley's doctrine? The treatise on the hand by Sir Charles Bell will still continue to charm the reader, if such there be in these days. Man is the only primate which has retained the thumb in its complete development. The gorilla in this regard comes close to him, but here the thumb has undergone a relative shortening. This is a most interesting and suggestive communication.

To each of the papers is appended an excellent bibliography.

Modern Methods of Sewage Purification. By G. BERTRAM KERSHAW. With tables, illustrations in the text, and 36 plates. London: Charles Griffin and Company, Limited. 1911. Pp. 356. Price 21*s*. net.

THE attitude which the author adopts in regard to the great problem of sewage purification and disposal will be endorsed by all those who realise the peculiar difficulties of the subject. As he says, "Sewage treatment does not lend itself to patents," by which he means that there can be no best method of sewage disposal which can be universally adopted regardless of local conditions. Innumerable and valuable patents there have been and are, however, which of course have helped in the stages of general methods, but "there are many methods, each one of them good in its own particular way, when properly designed and when suited to the local circumstances." It is exactly these "local circumstances" that keep one sewage method short of universal application and that add to the complexity and perplexity of all problems connected with the treatment and disposal of sewage.

What Mr. Kershaw has to say will be listened to with every attention, because he has been in close practical contact with the many and varied phases of the subject for several years, and his views have been made more authoritative by his connexion for 12 years as engineer with the Royal Commission on Sewage Disposal. The work of that body has been extremely valuable, and when completed will remain a source of reference on the subject which can have no rival for a very long time. In the present volume the subject is approached chiefly from the engineering point of view. Mr. Kershaw refers his reader to the special books upon the question of the chemical and bacteriological purification of sewage, and after a most interesting chapter on the history of sewage treatment he proceeds to describe some of the more efficient methods of sewage disposal in use at the present day, while discussing at some length the practical and financial points which require consideration. He misses no detail in his account of the various processes described, and a valuable feature of the work is the emphasis he gives to his words when he is discussing points which he holds from experience to be essential to success. Valuable, also, are the references to adaptability of various schemes to different places, examples being given in the chapter on "Purification Works in Actual Operation." The chapter on trade wastes brings out the difficulties which the sewages of industry present in regard to effectual treatment, and shows how these difficulties have so far been dealt with. His suggestion in a miscellaneous chapter of the desirability of a central authority being created, which should be able to make an investigation, when it is required, for several authorities or manufacturers, at the expense of the authority and not at that of the ratepayers of the particular town or of the manufacturer, is to the point, and worth careful consideration. As he says, "At present one of the greatest stumbling blocks to progress in the purification of sewage and manufacturers' wastes is lack of knowledge. The local authority or manufacturer, as the case may be, is told, 'You must discontinue this pollution,' frequently without any intimation of the direction in which the remedy is to be sought.

The central authority should point the way out and bring about a decisive and satisfactory issue.

The book is sure to be favourably received by all those interested in the advances of this most important branch of sanitary science.

Clinical Immunity and Sero-Diagnosis. By A. WOLFF-EISNER, M.D. Berlin. Translated by RAY W. MATSON, M.D., Professor of Histology, North Pacific College of Dentistry and Pharmacy, &c. London: Baillière, Tindall, and Cox. 1911. Pp. 184. Price 7*s.* 6*d.* net.

THE author records in the preface to this work that it is intended to "establish a connexion, previously lacking, between biology ..... on the one hand, and the clinic (particularly general practice) on the other." He states that his "venture was unprecedented," meaning apparently that there was previously no book available in Germany which set forth the theory of immunity in easily intelligible language. In our own country several books of this nature have been available for some years. Nevertheless, we welcome the translation of Dr. Wolff-Eisner's book, as it contains much of interest. Its principal thesis is the attempt to explain the phenomena of infection and immunity in terms of the discovery that a foreign albuminous substance brought into contact with the cells of a living body gives rise to the production of lytic substances, which tend to break it up. The symptoms of bacterial infection are thus attributed to the action of the body-substance of the organisms which are broken up by bacteriolysis, and we are introduced to the apparently paradoxical view that it is only by the death of the bacteria that the sickness and possible death of the host are caused. The crisis of an infective disease is due to sudden bacteriolysis, since a large dose of the toxic substance produces a fall of temperature, whereas a small dose gives rise to fever. (But why should the destruction occur suddenly and not in gradually increasing amount as the lysins are generated?) Similarly the exanthem of an infective fever is due to freeing of toxic albumin by lysis of bacteria, and the action of tuberculin is explained as due to the introduction of an antigen in presence of the lysin capable of disintegrating it with formation of toxic derivatives. Other diseases capable of explanation on the same lines are asthma and urticaria, in both of which the symptoms are due to the action of poisonous albuminoids on the vasomotor system; also eclampsia, which is associated with absorption of placental villi and resulting anaphylaxis. The author throughout sets forth his own views rather than those generally accepted; indeed, he quotes his own published works to an extent which becomes somewhat tiresome. It is possible that he attributes to his own observations greater importance than is generally admitted, and wishes to correct a possible lack of appreciation.

The book may be read with interest and advantage by those who are familiar with the subject of immunity and who can correct one-sided statements with the necessary pinch of salt. The author's views are fresh and stimulating; time alone can show the exact degree of truth underlying them.

Handbook of Electro-therapeutics. By WILLIAM JAMES DUGAN, M.D., Lecturer on Electro-therapeutics at Jefferson Medical College, &c. Philadelphia: F. A. Davis Co. Pp. 242. Price 8*s.* 6*d.* net.

THIS should prove a useful handbook, seeing that it occupies a place more or less midway between the large work which most medical men find too long to read and the small one that is intended more for the use of students. The author has carried prudence very far in that he has confined himself to so much of the subject as we can be reasonably sure of, and has carefully avoided touching on the more debateable points.

As the book is intended primarily for those who know little or nothing of electricity, the preliminary chapters are given up to more or less elementary principles and considerations. Chapter III., on static electricity, is one of the best in the book, though the difficulties attendant upon the use of static machines in a climate such as ours deprives it of practical interest to many of our readers. Subsequent chapters treat very clearly of faradic currents, electrical testing, electrolysis, and cataphoresis, though we think the author should have gone more fully into the latter subject, considering the great advances that have been made in this direction in recent years.

With regard to the application of high-frequency currents, the author does not hold out undue encouragement, and while he gives directions for their use in several specific conditions, he adds little reason to think that any great good will result, and in many of these conditions he is careful to say that medical treatment should also be employed. He has, however, found the method of great use in acne, nasal catarrh, insomnia, and some forms of neuritis. Towards the end of the book there are short chapters on magnetism, or rather treatment by means of magnetic waves, and also on light and heat therapy. The work closes with a comparatively full dissertation on the advantages of electrocution over hanging in dealing out the death penalty.

The book is very fully illustrated, but the author might have used more original illustrations and fewer illustrations derived from the electro-medical instrument manufacturer. Further, the reason for introducing illustrations of X ray apparatus and radiographs is not quite obvious, seeing that the subject of the X rays is scarcely referred to in the text. The radiographs are of very indifferent quality, and why they should be described as "Campbell radiograph of elbow," "Campbell radiograph of hand," and so on is not apparent. Of the series, Fig. 70, an antero-posterior view of the ankle, is described as "Campbell radiograph of wrist"! These pictures should be deleted in future editions, and no doubt other small defects will then be rectified. The main idea of the book is good, and on the whole it has been well carried out. For these reasons we have no hesitation in recommending it to those who are inclined to take up this branch of medical work. None the less some revision would be salutary.

LIBRARY TABLE.

Common-Sense Dietetics. By C. LOUIS LEIPOLDT, F.R.C.S. Eng. London: Williams and Norgate. 1911. Pp. 243. Price 2*s.* 6*d.* net.—Within the limits of a handy volume Mr. Leipoldt has brought together all that the ordinary man needs to know on this subject, which he has dealt with not so much from the professional or scientific standpoint as from that of the intelligent layman who wants to know the reason for this, that, and the other dictum in dietetics. It will also be of interest to the gourmet, who will here find rational explanation for many culinary practices and prandial rites and customs. An outline is given of the general principles of dietetics and the physiology of digestion; also of the composition of foodstuffs and the methods of their preparation. Dietetic fads and fallacies and the true art of dining are treated of with expert knowledge and sound sense. In the table of standard diets we notice an omission of any British scale more recent than Playfair's. The statement (p. 20) that the large intestine is "merely a reservoir," implying that it has no important digestive function, is hardly in accordance with the teaching of the present day. The author properly distinguishes between the *gourmand* and the *gourmet*, and introduces us to the "gastrosoph, the dietetic artist, the expert who knows how to eat, when to eat, and what to eat." As to alcohol, he is far from being a prohibitionist, and is,

indeed, fully alive to the attractions of good wine, but he prefers to say that alcohol taken in moderation at meals is "not detrimental" rather than to assert that it is "a distinct help" to digestion (p. 38). He is no vegetarian, believing that a purely vegetable diet is not desirable for anyone who, as Thomas Walker, of *The Original*, said, "knows how to dine so as to preserve the maximum enjoyment with the greatest advantage to health." But the use of fruit should be much more extensive than it is, and we believe many busy men would be the better for taking Mr. Leipoldt's "ideal summer lunch" of a bunch of Malaga raisins and a tumbler of milk instead of the ham sandwich and glass of beer or the solid midday meal. The author is against all fads, whether those of vegetarians, fruitarians, or others. Brain-workers, he finds, do not require a large amount of phosphorus in their diet; concentrated or predigested foods are not more nutritive than ordinary articles well prepared; neither does he believe in the value of a purin-free dietary or of "standard" bread; a middle position is taken as regards alcohol, the author's inference being that alcohol, taken in small quantities, is a valuable dietetic aid, but no more a food than a tablespoonful of jelly is, yet as much a food-sparer as the latter, and with a definite place in the dietary. This appears to be the author's considered opinion rather than the contrary statement on p. 38. Mr. Leipoldt has not always verified his references. Johnson is quoted as saying that "the drink for heroes is whisky"; what the sage did say was, "No, sir, claret is the liquor for boys; port for men; but he who aspires to be a hero must drink brandy." In the chapter on the Art of Dining the author presents several specimen menus for our instruction. He quotes Walker's "ideal dinner for a party of eight on Christmas Day" as turtle soup, whitebait, grouse, apple fritters and jelly, ices. Whitebait Mr. Leipoldt condemns because it is not at its best in December; but Walker ordered the dinner "this very day at Lovegrove's, at Blackwall, where, if you have never dined, so much the worse for you," and the date was August 26th, 1835 (see *The Original*, No. XV.). Despite a slip or two we are grateful to the author for good advice on the art of dining and information about famous diners. The "note" of the book, as indicated in the title, is common sense.

Through India and Burmah with Pen and Brush. By A. HUGH FISHER. London: T. Werner Laurie. Pp. 358. Price 15*s.* net.—Mr. Fisher has been about the world a good deal, and is able to recount his experiences in a pleasing fashion without any fine writing. He first went to Burmah, and ascended the Irrawaddy as far as Bhamo. He gives a good description of the deserted ancient city of Pagan, which he calls the "Dead Heart of a Kingdom." After a flying visit to Madras and the South of India he went to Calcutta. The description of the visit to the Hindu theatre is amusing. Few Europeans interest themselves in the Beadon-square neighbourhood, or in Bengali theatrical entertainments. After Darjiling, Benares, Lucknow, and Cawnpore, Mr. Fisher went to Fatehpur Sikri. This wonderful dead city does not seem to have made any great impression, and we are not given a single picture, plain or coloured, of its many architectural features; not even of that magnificent Buland Darwaza, or Sublime Porte, 160 feet high, surely the greatest gateway in the world. Mr. Fisher then continued his journey up country from Agra, through Delhi, Amritsar, and Lahore to Peshawar, afterwards visiting Quetta, Jaipur, and Udaipur. We should have liked to learn what were the most vivid impressions the artist-author carried away with him from his rapid but comprehensive survey. Perhaps it was too kaleidoscopic. The coloured reproductions of his painted sketches are particularly successful, and give an excellent idea of the vivid hues and sharpness of outline characteristic of tropical landscapes. Rohri and Sukkur are hot enough, but the engineer must have been "pulling the artist's leg" when he assured him that the thermometer reached 240° F. in the shade at either of those places (p. 281). No such shade temperature has ever been recorded in India. Mr. Fisher concludes with the expression of his opinion, in regard to the future of India, that a distinction must be made between the extreme claims of enthusiasts and the reasonable progressive changes warranted by a gradual advance of education and increase in religious tolerance, as well as between the irritation of dissatisfied place-hunters and the mature opinions of enlightened Indians in positions of trust and authority. Lastly, in its efforts to make a nation out of a tangle of many States and peoples, England must never forget the tremendous power it has gradually gained to influence the liberty and progress of the world, and that "no part of that power can ever be yielded up, save as the shameful shifting of a burden it is our noblest privilege to bear." This is a weighed and judicious expression of opinion which will commend itself to careful and discriminating thinkers. The author seems to us to lapse from good taste in his anecdote on p. 213.

Modern Medical Opinions on Alcohol. Being a Series of Lectures delivered by well-known Medical Men. London: Church of England Temperance Society. Price 1*s.* Pp. 129.—This little book is a collection of 14 short papers and addresses by well-known members of the profession on the physiological and pathological effects of alcohol. Sir Frederick Treves introduces the subject. Sir Thomas Barlow speaks of intemperance among women. Sir James Crichton-Browne advises students who aim at efficiency to place every form of alcohol on their *index expurgatorius*. Sir Victor Horsley maintains that "alcohol depresses the vital activity of the human body, and therefore cannot possibly be regarded as a food." A very good and practical address is that of Dr. Ettie Sayer on the Prevention and Cure of Intemperance, as is one by the late Dr. George Carpenter on Alcohol and Children. The manual is free from exaggeration, and would be of great use to anyone desirous of informing himself of the views of leading physicians on this subject.

The Bellevue Hospital Nomenclature of Diseases and Conditions, with Rules for the Recording and Filing of Histories. Compiled by the Committee on Clinical Records, composed of ROBERT J. CARLISLE, M.D., WARREN COLEMAN, M.D., THOMAS A. SMITH, M D., and EDMUND L. DOW. Adopted by the Board of Trustees, 1903. Revised and made to Conform to the International Classification, 1911. Copyright, 1911, by the Board of Trustees of Bellevue and Allied Hospitals, New York. Pp. 323.—This small book presents the nomenclature of disease employed by the Bellevue Hospital, New York, for recording and filing the records of its cases. It has been designed for convenience of storing records, making references, and acquiring mortality and morbidity statistics. The present edition represents the third revision of the nomenclature, and it has been brought into accord with the international list of causes of death by prefixing to each of its terms the proper international title-number. The general principles of the system of records adopted by the Bellevue Hospital authorities are first explained. The directions given appear to be admirably systematic and calculated, if efficiently followed, to yield valuable material for statistical investigations. The nomenclature itself is first expressed according to the system or organ diseased or injured, the individual conditions being arranged in alphabetical order; then we have the order under the titles of the international classification. An alphabetical index is then given. In this way the names of the individual conditions are given in three different categories, and reference to any given

disease or injury and the determination of its position in the classification are facilitated. The orthography is stated to conform to that recommended by the Basle Anatomical Nomenclature and is endorsed by the Committee on Nomenclature of the American Medical Association. For the most part it is identical with that current in this country, though "septichæmia" has an unfamiliar appearance and enforces a new pronunciation. We are glad to find that proper names appended to diseases are but little used, the only examples we have found being Mikulicz's disease, Hodgkin's disease, Morvan's disease, and Werlhof's disease. The book is well produced, is of convenient size, and offers a practical and carefully-worked-out scheme of nomenclature and classification which should be useful if generally adopted in the collection of records in hospital or private practice.

JOURNALS AND MAGAZINES.

Man.—In the December number of this journal Dr. Jos. Maes, keeper of the ethnographic section of the Congo Museum in Belgium, contributes an account in French of a collection made by Dr. Mordiglia. These objects belonged to a *fétiche*ur, and most of them were naturally supposed to possess magical powers; besides these there were several intended for use in the treatment of diseases and injuries, including samples of native medicines; several boxes or cases for holding medicines and surgical instruments; a calabash used as a cupping instrument, in which the *fétiche*ur produced a partial vacuum by sucking with his mouth; another calabash filled with fluid and fitted with a nozzle for introduction into the bowel, after which the *fétiche*ur administered an enema by blowing into another aperture in the gourd; a splint for fractures, made of parallel strips of bamboo laced together with vegetable fibres; a sharp iron instrument for bleeding and tattooing; slips of quartz shaped for filling the teeth; and a notched iron instrument which could be used either for breaking off portions of a tooth or for an extraction.

School Hygiene: A Monthly Review for Educationists and Doctors. London: Magazine and Publication Syndicate, Limited. Price 6*d.*—This magazine will in future appear as a quarterly journal, and will no doubt maintain the high standard of interest its articles have always had for the growing number of men and women—doctors and others—connected with, and interested in, the health sides of school life. The November number contains, among other things, the conclusion of a paper by Dr. F. C. Shrubsall on the examination of Mentally Defective Children, which should prove of great practical assistance to doctors and teachers alike. The December number has an elaborate and interesting paper on Poliomyelitis in Relation to the Spread of Infection by Schools by Dr. F. E. Batten, and a discussion on this paper by the Medical Officers of Schools Association. Miss A. C. Sewell has a stimulating article on How to Use School Playgrounds, in which she gives some of the results of her splendid work in this field.

ROYAL LONDON OPHTHALMIC HOSPITAL.—The sixth annual dinner of the past and present students of this hospital will take place at the Imperial Restaurant, Regent-street, London, W., on Wednesday, Feb. 7th, at 7.45 for 8 o'clock. Mr. F. Richardson Cross will take the chair. Each student is entitled to introduce two guests. Tickets (price 10*s.* 6*d.* each, exclusive of wine) may be had on application to either of the honorary secretaries, Mr. Arnold Lawson, 12, Harley-street, London, W., and Mr. J. Herbert Parsons, 54, Queen Anne-street, London, W.

Reports and Analytical Records
FROM
THE LANCET LABORATORY.

REAGENTS FOR USE IN THE WASSERMANN SYPHILIS REACTION.

(A. AND M. ZIMMERMANN, 3, LLOYD'S-AVENUE, LONDON, E.C.)

WE have received from the above firm specimens of the reagents used in the Wassermann reaction which are prepared under the supervision of Professor Wassermann himself and independently examined by Dr. Meier. The reagents represent the same as those used by Professor Wassermann in his own clinic. The series sent to us comprised 1 cubic centimetre of hæmolytic amboceptor, 1 tube (5 sera) antigen (alcoholic extract of syphilitic liver), 1 positive standard serum, 1 negative standard serum, 1 envelope hæmolytic amboceptor, and 7 cubic centimetres sheep's blood corpuscles. Instructions for use are issued from the bacteriological and serological department of the Pharmaceutical Institute of Ludwig Wilhelm Gans, Frankfort-on-the-Main.

(1) IODOSTEM; AND (2) STEM.

(R. LANE HALL AND CO., 4, LLOYD'S-AVENUE, LONDON, E.C.)

Iodostem is a thick syrupy fluid obtained by the concentration of grape juice. It contains iodine combined loosely with tannin, so that the iodine is available for administrative purposes without the disagreeable effects of iodine in the free state. It has been employed in disorders of the lymphatic glands as well as in gout, rheumatism, and tubercular affections. Stem itself is a clear pure grape juice, a pleasant slightly acid liquid which forms an agreeable beverage when diluted with either plain or aerated water. On analysis the following results were obtained: Total solid matters, 18 65 per cent.; grape sugar, 15·20 per cent.; acidity reckoned as tartaric acid, 0·45 per cent.; and salts, 0·30 per cent. We could find no preservatives, while the iodoform test showed almost complete absence of alcohol.

GENUINE HOLLANDS (DE KUYPER'S).

(JOHN DE KUYPER AND SON, ROTTERDAM. LONDON AGENCY: 6 AND 7, GREAT TOWER-STREET, E.C.)

This spirit bears all the evidence of a correct description. It is stated to be distilled from genuine malt liquor with the juniper berry, the oil of which contributes to some extent to the peculiar flavour. There is an advantage undoubtedly gained by distilling the berry with the spirit; the resulting product is mellow and free from harsh flavour. A simpler method, of course, is to add the oil. On analysis the spirit gave the following results: Alcohol by volume, 47·13 per cent.; proof spirit, 82·59 per cent.; extractives, *nil;* mineral matter, *nil;* and volatile acid reckoned as acetic acid, 0·012 per cent. The secondary products in parts per 100,000 of alcohol present were as follows: Aldehyde, 8 parts; furfural, 9·3 parts; ethers, 67 parts; and higher alcohols 237 parts. The amounts of secondary products show that the spirit is produced in the classic pot-still, so that the volatile flavours of the materials are retained. On extracting the spirit with petroleum ether a definite quantity of juniper oil was obtained. It will be remembered that juniperi oleum is official in the British Pharmacopœia and is described as carminative, anti-spasmodic, and a stimulating diuretic, the last-named property constituting its chief medicinal value. In some text-books it is mentioned that juniper is conveniently given in the form of hollands or gin. De Kuyper's hollands is still made after a formula which is over 200 years old, and our analysis establishes the genuineness of the product.

NOVOFORM (HAYDEN).

(AGENCY, E. W. BLASIUS, 127, FENCHURCH-STREET, LONDON, E.C.)

Novoform is introduced as a new odourless antiseptic. We have examined a specimen, and find that it is a fine dull yellow powder quite free from smell and insoluble in water. It is a combination of bismuth oxide with tetra-pyro-catechin, an aromatic antiseptic containing bromine. We had no difficulty in expelling bromine from the compound or in identifying the presence of bismuth. Its important properties are that it is antiseptic and exsiccative, and is valuable, therefore, in suppressing or preventing suppuration. It is said to be non-poisonous, and is apparently an excellent substitute for iodoform for the reasons just stated.

VARIOUS BOTTLED FRUITS.

(D. E. TOWER, F.R.H.S., THE HILL FRUIT GARDENS, PERSHORE.)

The excellence of these preserved fruits shows that the simple process adopted is a success both from an æsthetic and a hygienic point of view. No time is lost in consigning the picked fruit, which has been selected as sound, to the bottle. There is thus very little opportunity of contamination or undesirable fermentative changes. The soft fruits are bottled direct from the trees or bushes; after bottling they are carefully pasteurised and then they keep (according to the excellent samples we received) in good condition. The natural colour is also preserved. The raspberries were particularly attractive in this direction. We could find no trace of metal or of chemical antiseptics.

SCOTCH WHISKY (THE HUNTING SQUIRE BRAND).

(WALTER BALLANTYNE AND SON, ST. BOSWELLS, SCOTLAND.)

The mellowness that comes from storage is a characteristic of this spirit. According to our analysis it is a blend, but possesses a marked flavour of malt. The results of analysis were as follows: Alcohol by volume, 44·78 per cent.; extractives, 0·230 per cent.; mineral matter, 0·01 per cent.; volatile acidity reckoned as acetic acid, 0·018 per cent.; and fixed acidity reckoned as tartaric acid, 0·015 per cent. The extractives are a little higher than is generally the case, owing, doubtless, to maturing in wood. The secondary products in parts per 100,000 of absolute alcohol were as follows: Aldehyde, 11·40; furfural, 1·13; ethers, 51; and higher alcohols, 140. When whisky is permissible for dietetic purposes a spirit of this smooth mature character is an advantage.

(1) FERROSAJODIN; AND (2) TUBERCULIN A. F. (ALBUMOSE-FREE TUBERCULIN).

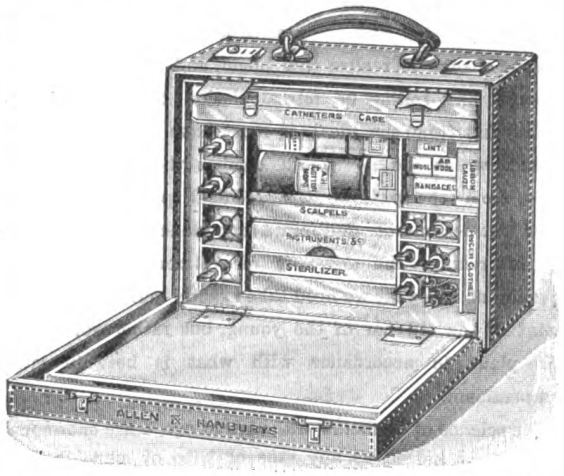
(MEISTER LUCIUS AND BRÜNING, LIMITED, 3, JEWRY-STREET, LONDON, E.C.)

1. Ferrosajodin is regarded as an advance upon syrupus ferri iodidi, inasmuch as both the iron and iodine in it are exhibited in forms which do not give rise to the objectionable disturbances common to ordinary iron and iodine compounds. Ferrosajodin is tasteless; it is without discolouring effect upon the teeth; is free from irritating effects upon the digestive tract, and keeps unaltered or unoxidised when exposed to the air. We have examined some chocolate tablets containing the compound. Ferrosajodin contains about 5·6 per cent. of iron and 25 per cent. of iodine. The iodine, we found, is readily expelled on treatment with nitric acid. Sajodin is the calcium salt of mono-iodobehenic acid (iodo-sebacic acid) and was described in our analytical columns in THE LANCET, May 5th, 1906. Its combination with iron suggests its useful application in the treatment of scrofula, chlorosis, anæmia, and cachectic conditions, and good results have been reported. 2. Tuberculin A.F. is prepared from the bacilli cultivated in a special nutrient medium consisting of inorganic salts and citrates, the sole nitrogenous food present being asparagin. There is no addition of albumose, peptone, or nitrogenous extractive matters derived from flesh or blood. It is stated that the advantage of Tuberculin A.F. over the older Koch's preparation consists in the strictly specific character of the reactions induced by it, and that anaphylactic symptoms are excluded in consequence of the absence of non-specific proteins. It may be used for both diagnostic and therapeutical purposes. We found that bromine water gave an opalescence but no precipitate. Alcohol did much the same thing, while when the fluid was saturated with zinc sulphate it remained clear. These results prove the absence of peptones and albumoses, as is claimed to be the case.

New Inventions.

ASEPTIC DRESSING CASE.

THE appended sketch displays a surgical dressing bag which will appeal to the majority of busy practitioners on account of its carrying capacity and general utility. It is evolved from the brief bag, into which instruments and dressings are often thrown at haphazard, but which has proved quite inadequate in these times when the principles of asepsis are understood by our patients no less than by ourselves. Use has proved it efficient; it enables the surgeon to dress cases or to perform minor operations aseptically. Essentially a metal case, for convenience carried in a leather attaché case, it is divided into compartments for bottles, dressings, and instruments, viz.: Four 3 oz. bottles for ether soap, lysol, sp. vini rect., lotio plumbi cum opio; five 2 oz. bottles for ac. carbolic, antiseptic cream, vaseline,



powder, and so forth; stoppered tubes for suppositories, tablets, adrenalin, argyrol (six of these occupying the space of one 2 oz. bottle); compressed dressings, bandages, at one side a narrow space for finger cloths; steriliser, 8 in. by 4 in. by 2 in. of usual pattern; metal box 8 in. by 4 in. by 2 in., holding instruments, needle box, tube of ligatures and sutures; and catheters, uterine and other long instruments in a case, 13½ in. by 3½ in. by 1 in., running the whole length of the bag. There is room in the central part of the bag for vaginal specula, battery, and head light, or extra dressings.

Messrs. Allen and Hanburys, Limited, of 48, Wigmore-street, London, W., have taken considerable trouble in making this case exactly to my instructions.

Folkestone. W. W. LINNGTON, F.R.C.S. Eng.

THE LANCET.

LONDON: SATURDAY, JANUARY 6, 1912.

A Nonagenarian.

DURING 1912 THE LANCET will enter upon the ninetieth year of its existence, and the temptation is strong upon us to suggest that we should not have lived thus long if we had not lived fairly well. Perhaps if we felt old some garrulous reflection upon bygone efforts would escape us at this date, though struggling to preserve modesty. But we have no sense of the weight of years. To the young the New Year is essentially a period of resolution, hope, and promise, and we are more in touch with this attitude. A newspaper which represents the vital interests of a progressive profession, so long as it represents them truly, can neither be called old nor young; whatever its actual years, it is the age of that profession, whose past it has to reckon with, whose present it lives by recording, and whose future it strives to assist. "Si la jeunesse savait, si la vieillesse pouvait," that most used tag by all who write, suggests the impossibility of attainment in human affairs to any working blend of youth and experience. A newspaper, which is itself part and parcel of a living and progressive section of human energy, has the chance to realise this blend, and however far short through any frailty or miscalculation of its conductors it may fall from the ideal, it must have as many circumstances which aid as which combat the ambitious aim. Thus from the past of the medical profession we can draw the lessons of deliberate experience, and from the present receive the messages of valorous hope. At the opening of this year we need take exactly neither the standpoint of the old nor of the young, but rather would make our plans in accordance with what is best in either temperament.

The science of medicine, although in one sense enormously old—as old indeed as any race or tribe of man—is not a very ancient branch of human achievement as we know it. Where the records of civilisation extend back we find always traces of definite and accurate medical learning, and some of these traces indicate extraordinary intellectual acumen on the part of those original votaries of our science. But the skill of this or that nation in this or that pathological direction was largely lost as a benefit to the world by the absence of common principles and the instability of basic knowledge. In the result, as all our readers know, the systems of ancient medicine stood still at certain points, and during many hundreds of years no man could say that general progress of any kind had been made. There was little continuity of attempt and almost no consensus of design, so that either by independent labour or by rediscovery of buried lore the nations of the earth arrived, and arrived again after vast intervals of time, at much the same station in the course. Then, and in comparatively recent days, great physical and physiological truths threw a light upon the learning of the past, revealing some of the most ancient procedures as justified by science, and exposing others, perhaps more venerated, as vestiges of vulgar superstition. The good has been kept and the falsehood has been rejected, and to such parts of the older learning as would stand the severe tests of real science vast stores of information have been added under the improved conditions. Partly by the insight of a few leaders has this been done; partly by the faithful work emanating from the body of medicine as a whole; and partly by the growing wisdom of the world, which, returning in a practical form to philosophic dreams, has begun to realise in the interaction of various branches of knowledge that there is not one wisdom of the chemist, another of the botanist, and another of the pathologist, but that the wisdom of all is one. The principal advances of medicine lately have been due to the fact that provinces near to the medical borders, which seemed to be required by the medical estate, have been assimilated, and that medicine has learned to rule them and has thriven out of their produce. Now much of such development of medicine has taken place within the life of THE LANCET, and during the whole period we have attempted to describe the actions of the leaders, to mirror the good work of the rank and file, whose general experience is sublimated into the essential quality of their leaders' exploits, and especially to chronicle the growth of medicine as an acquisitive science, making magnificent raids upon territories apparently allocated to other possessors, and retaining peaceful possession of the conquests. We can look back upon such labours from a respectable position of maturity, but we prefer to look forward to the countless opportunities that are unrolling themselves in which we may serve medicine in a similar manner through its majestic developments.

And as we have tried to record the scientific progress of medicine, so we have tried to record the position of those who practise it, their professional needs and aims. At this moment in the material history of the profession of medicine there is the greatest need—never has there been greater—for looking facts squarely in the face and for seeing that the action taken upon those facts shall be taken for the national good by a highly educated class, which is always forced by circumstances, as well as guided by disposition, towards altruistic endeavour. If this class is to discharge its high responsibility in accordance with the conception which it has always had of its duties, it must undergo a long, arduous, and expensive training, and, again, must have proper opportunities accorded to it for carrying on work whose routine is arduous, delicate, and complicated. It will be our duty in the struggle which seems imminent to keep the attention of our readers fixed upon the principles involved, to resist in their name social and political movements which threaten the scientific and material position of those who practise medicine, and to support the extending movement of the medical profession towards a common demand for justice.

Optimism in Medical Practice.

"I HAVE always observed," wrote the late Sir WILLIAM HARCOURT, "that good physicians are optimists," and the observation is at least equally applicable to good surgeons, no distinction probably having been intended. We do not use the word, nor presumably did Sir WILLIAM HARCOURT, in its philosophical sense, as indicative of a follower of LEIBNITZ, or even of POPE'S travesty of his doctrines, rather than of SCHOPENHAUER or of HARTMANN, but in the more obvious one which indicates a person whose disposition it is to hope for and expect the best, or to look on the bright side of things rather than on its reverse. We are all familiar, in daily life, with the wholesomely stimulating effect of the optimistic point of view; and, even granting that it may sometimes, or even often, lead only to disappointment, most people will clearly be the better for the effort which it induces them to put forth, and will be more capable of "trying again" when next the opportunity is afforded them. In the sick room, the optimism of the physician or the surgeon, as expressed in countenance and manner, conveys to the patient that most comforting of all assurances—the assurance that he is not merely to be looked at, but that something is about to be *done*, and that presently, for his relief; that there is to be no passive acquiescence in his suffering or his danger, but a well-directed effort to restore him to comfort and safety. To such an assurance, springing less from words than from a certain vigilant and ready manner which is more easily recognised than described, the patient will almost certainly respond by an increase of hopefulness which in itself is a wholesolme stimulant to any powers of recovery which he may possess; and few who are conversant with sick rooms will entertain any doubt of the frequent efficacy of conditions which appeal to favourable expectation and tend to the maintenance of, at least, comparative cheerfulness. To the practitioner himself, whether medical or surgical, the reasonably optimistic frame of mind is almost as valuable, from the point of view of his efficiency, as it is to the patient; because it at once directs his thoughts to practical issues, and diverts him from the contemplation of the urgency of danger by demanding all his energies for the devising of means by which that danger may be averted. The man whose first and instinctive impulse is to act, and to act with promptitude, will always, other things being equal, be more successful than he whose first impulse is to fear that his activity may only be in vain; and even in the worst conditions, when the hope of success is almost absent, the encouragement of that which may remain will be an essential aid towards the fulfilment of one of the first duties of the practitioner—to remain calm in the presence of adversity. How many cases of apparent death from drowning, for example, have been restored to life by men whose optimism has led them to persevere in effort even when it appeared that all hope must be abandoned?

There are, however, two distinct kinds of optimism to be considered, the optimism of the energetic and the optimism of the idle; and the latter is even more certain to be disastrous than the former is to be beneficial. The optimism of the energetic leads to the practical conclusion that the patient may be cured, or may recover, on the condition that every possible chance is given to him, and that nothing conducive to his restoration is forgotten or omitted. In such circumstances optimism is merely the recognition of what may be accomplished if the most favourable external conditions are maintained; and its practical outcome should be a determination to maintain them. The possibility of doing so will depend, obviously, in many cases, upon conditions over which the practitioner can exert but a limited degree of control; and his success will be largely governed by his power to assert his influence in the sick-room, and to compel attention to even the most apparently trivial of his directions. As regards patients in comfortable worldly circumstances this power has been enormously increased during recent years by the development of skilled nursing; and there can be no doubt that the results of treatment have in a corresponding degree become more successful. Even with the aid of this most valuable adjunct, the physician or surgeon who is optimistic in the favourable sense will not allow his vigilance concerning details to be relaxed, more especially in the many cases, occurring in middle-class houses, where the nursing strength is hardly adequate to the requirements of the patient, and is reinforced by members of the family or by friendly amateurs. We once knew a country practitioner who ascribed much of his undoubted success in serious cases of illness to his habit of paying surprise visits to them at all hours of the night or early morning, and of thus learning from direct observation how far the conditions which he had prescribed had been fulfilled. He was an optimist of the first order, always cheerful, always hopeful so long as hope was possible, but fully recognising the necessity of means for the fulfilment of ends, and resolute, so far as his power of controlling events extended, that the means should be there, and should be applied in accordance with his directions. It is in this form, and perhaps in this form only, that optimism in the sick room is to be unreservedly commended. It must be guided by a realisation of one of the first results of modern scientific inquiry—of the fact, that is, that no condition capable of adversely modifying the chances of the sick is so small that it can safely be regarded as trivial. It is only when this knowledge is fully acted upon that room is afforded for the true foundation of medical or surgical optimism, which is based on another fact, that is, that only a few diseased conditions, save towards the natural decline of life, are so necessarily fatal as to exclude the hope of dealing with them successfully.

The optimism of the idle, even assuming them to be only intellectually idle, is a quality of quite a different order, and is necessarily productive of very different consequences. It is founded upon an implied belief that everything is for the best in this best of all possible worlds, and that affairs in general will come round if they are left alone. When expressed in guarded language by medical men, it is not infrequently made the foundation of wholly erroneous ideas on the part of the public; and it is usually associated with very convenient lapses of memory concerning facts calculated to shake its very foundations. Even lately it has led some people to believe that a mere period of residence in a sanatorium would "cure" most cases of pulmonary

phthisis, and that the uncured patients who came out would at once commence the diligent practice of troublesome precautions for the protection of those around them. Laziness and selfishness and dirty habits were to be cured, even when the phthisis itself resisted treatment. In the domain of surgery the optimism of the idle tends to the conclusion that this or that "will do," and hence to the neglect of the small precautions on which, in so many instances, success is dependent; while in an analogous fashion it invalidates the results obtained from a large number of so-called observations of various kinds of phenomena. In its relations to the general public it is perhaps in no way more hurtful than in its tendency to lead to hasty or mistaken diagnosis, to the belief that things are always what they seem, and that first impressions may be continuously trusted without revision or re-examination. In a word, it is the antithesis of caution, and caution is the essential condition of the ascertainment of truth, and of its detachment from the many errors which may lurk under its disguise. As FARADAY long ago pointed out, it is necessary to know all the conditions under which phenomena occur before it is possible to form a sound judgment of their nature or of the causes producing them; and the intellectually idle optimist is one who neglects this precaution, and who announces a conclusion based upon his knowledge of some of the conditions only. Such a conclusion, for example, was at the root of Sir JAMES SIMPSON'S denunciations of "hospitalism" in the early "sixties" of the last century, when he had correctly observed the occurrence of septic conditions in crowded wards, but had not observed that they might occur even in isolated patients, and that the ward, although favourable to their production, was not the true cause to which they were eventually traced by LISTER, and, indeed, did not fulfil the scholastic description of a cause, "præsens facit, mutata mutat, sublata tollit." The optimist, even when he is a man of genius, requires to be especially upon his guard against the intellectual sin of hasty generalisation, and against the practical errors which indulgence in it is almost certain to entail.

The National Insurance Act.

IN the first number of the New Year it is right that we should look ahead and endeavour to forecast the future prospects of the medical profession in its relations to the public under the National Insurance Act. This duty is an extremely responsible one, because in gauging the future we must lean to one side or the other in very arguable circumstances, and the weight of deliberate opinion, based upon or reinforced by such wide communication as we have been able to maintain with the members of the medical constituency, and expressed in circumstances when so many conflicting views have their honest and keen supporters, may seriously influence the course of events. The National Insurance Act is now law, and the three questions which go to the core of the matter are the following: What is the best that can possibly befall the medical profession under it? What is the worst that can happen? And what can be done to favour the former and prevent the latter?

The best is that under the Act the medical profession should be placed in a proper position to administer faithfully and for the public weal the benefits promised to that public. Now the Act as it stands does not secure adequate or willing medical service for insured persons; there are loopholes everywhere for the extension of abuses under which the profession has long suffered, and for injustices which have sorely tried many of our readers. As Sir JOHN TWEEDY has pointed out in our columns, it abrogates the tacit agreement of the State that those who have devoted time, money, and thought to the acquisition of professional knowledge and skill, and who have secured a legal right to practise, shall be entitled to dispose of their services as they choose. But the Insurance Commissioners have been given very wide powers, and it is claimed that they can make the Act acceptable to the medical profession. The best that can befall the profession, and therefore the public, now that the moving finger has written its message and made the Act law, is that the Commissioners should fearlessly face the situation, and so frame their regulations for medical benefits that the minimum demands of medical men are safeguarded for all time. They must be fearless, for they will have to act against the expressed views of many voters whose idea of gain for themselves appears to mean loss for medical men. If the Commissioners cannot or will not do this, then the Act stands condemned from the medical point of view. But we believe that union within our ranks in the coming months can produce an impression upon the Commissioners sufficient to ensure the adjustment of the Act to the requirements of medical men before in any locality men are asked to accept service. This is the best that the future holds in store. The worst is that an Act which is generally unacceptable to our body should none the less be accepted by individual members of the medical profession, with the result that some third-rate State medical service should be generated, which, while perpetuating and exaggerating professional evils that now exist, should afford the country no real safeguard in the intended directions. Between the best and the worst there are gradations of misfortune. But the disaster above all would be for a great and honourable profession, upon which the public depends for progress and happiness, to split up at this critical time into groups and factions. If divided counsels persist during the present year, and disunion continues, we shall look in vain to the Local Insurance Committees or to the Commissioners for satisfactory terms. The after-effects of such a defeat are too painful to contemplate.

If the best is to come to pass the profession must make ready as though for an inevitable fight, and must take its stand upon one policy. The British Medical Association is the most obvious organisation by which the profession may secure its ends. Throughout the passage of the Bill we reported and discussed the course taken by the Association, and it was apparent that we did not see eye to eye with it at every point. But in the general interest we criticised as little as possible,

our view here being exactly that of the President-elect of the Association, Sir JAMES BARR, who has since pointed out that to criticise the leaders of the Association during their work of negotiation would have been intrusive. For this reason we did not publish many ventilations of opinion received by us, which might have embarrassed the action of the Association and spread disaffection in its ranks, though we considered it right to point out, from the beginning and throughout the discussions on the measure, how great was the risk lest the profession should find itself committed to all the old abuses of contract practice. But the position became profoundly changed, when it was clear that the measure was going to pass into law without containing in a satisfactory manner the minimum safeguards to obtain which so much work and diplomacy had been employed. Thus the position of the Association became the subject of comment both within its own ranks and outside. At present there are two main policies before the profession; we shall be understood if we call them respectively the policy of the Council of the British Medical Association and the policy of Manchester. The Council would work the Act as it is and trust the Commissioners to set right any wrong. The National Medical Union would refuse to accept any appointment under it without far better safeguards than the Act offers, and a Reform Committee of the British Medical Association has now been started in London with a similar objective. It is probable that on each side there is a large body of supporters which will not fight under the flag of the other; while there are also some practitioners who will not fight at all. But we believe that the great mass of the profession wishes to stand up for its rights, being able to do so on the highest public grounds, and if they can make a fairly common cause any minority will become a negligible factor. We have always declined to associate ourselves with those critics of the policy of the Council who weaken their case by personal abuse, or who spread discord by imputing base motives to those whose opinions are at variance with their own. But we hold still, as we did after the last meeting of the Representative Body, that the Council erred in judgment. It is true that its policy was endorsed by majorities at the Representative meetings; but there is evidence that some at least of the representatives were swayed in their voting by the advice of the leaders, and it is certain that for some time past the policy of negotiation and conditional approval of the Act has been steadily losing favour with the profession, while the assurance of the Council that the Act contains no legal barriers to the fulfilment of the six-fold demand of the Association has provoked much hostile comment.

Whatever may have been the merits of the plan pursued by the Council when the Bill was before Parliament, in the present pass we place our confidence in the braver of the two policies. We feel that it reflects better the considered attitude of the profession, and believe that the Commissioners, on learning the refusal of the profession to entertain the notion of local bargaining, will realise that their duty is to save the Act by ensuring justice for medicine from the outset. The policy of the Council encourages the notion in the public mind that the profession is at bottom satisfied with the Act and is merely bluffing from commercial motives; and by its faith in the Commissioners this policy commits the profession so deeply that subsequent refusal of service on an effective scale may be impossible. Neither of the reforming organisations is a clique bent upon the disruption of the British Medical Association; each numbers many among it who would take the view that the Act could be worked by the medical profession, provided that the regulations framed by the Commissioners included from the beginning explicit guarantees against the degradation of our standards of practice, against any confirmation of the worst abuses of the club system, and against conditions of livelihood which will curtail the supply of recruits to our ranks and worsen the material from which these are drawn. We recognise that the official policy of the Association has still many adherents who are not likely to approve the forcible proposals of the National Medical Union. For the sake of that united action which is now so urgently needed the official view had better be modified, for it stands in the way of union. The National Medical Union has for its object the strengthening of the hands of the British Medical Association, and if what we have termed their policy succeeds we might arrive at the position that through the executive organisation of the British Medical Association the Government and the Commissioners could learn that the medical profession will take no further part in accepting service under the Act until it has seen the regulations proposed for the administration of medical benefits. For, as Sir ALFRED PEARCE GOULD points out in our columns this week, until the regulations have been drafted and approved, the Act lacks all definition. He desires that such definition should be formulated by the medical profession, and if the great professional corporations would lend the assistance suggested in his letter, a circumstance already realised in Scotland, the course would be welcomed. But the Act is law, and we lean, in the urgency of the circumstances, to his second proposal, which is the same as that we have already put forward—viz., that the regulations should be produced for the consideration of those who have to provide the medical benefits. This is not a wholly *non possumus* attitude, and we commend it to the serious attention of our readers.

Annotations.

"Ne quid nimis."

THE NEW YEAR HONOURS.

ONLY a few weeks have passed since the issue of the Durbar honours, and it was generally expected that the New Year's list would not be a long one. Now that the list has been issued it is seen that it is indeed much shorter than the lists which usually appear at this time of the year. The medical profession has, however, been kindly treated, as six new knights have been created in our calling and one Companion of the Bath has been added to the list. The new knights are: Mr. John Hawtrey Benson, M.D. Dub., F.R.C.P. Irel., L.R.C.S. Irel.; Mr. Robert John Collie, M.D., C.M. Aberd.; Mr. James Mackenzie Davidson,

M.B., C.M. Aberd.; Mr. George Henry Savage, M.D. Lond., F.R.C.P. Lond., M.R.C.S. Eng.; Mr. Bertram Coghill Alan Windle, M.D., B.Ch. Dub.; and the Hon. Charles Kinnaird Mackellar, M.B., M.S. Glasg. Mr. Arthur Newsholme, M.D. Lond., F.R.C.P. Lond., is the new Companion of the Bath. Sir John Hawtrey Benson is the President of the Royal College of Physicians of Ireland and consulting physician to the City of Dublin Hospital and to Monkstown Hospital. Sir Robert John Collie is medical examiner to the London County Council, chief medical officer to the Metropolitan Water Board, and examiner to a large number of insurance offices. He is a well-known authority on the subject in which he has specialised and has made a particular study of injuries in relation to accident. Among his writings on accidents and their medico-legal aspect is "Observations on 17,000 Consecutive Medical Examinations Conducted Chiefly for the Public Service." Sir James Mackenzie Davidson is consulting surgeon to the Roentgen Ray Department of Charing Cross Hospital and of the same department in the Royal London Ophthalmic Hospital. He has done some important work with regard to Roentgen ray investigation and particularly in the direction of localisation. Sir George Henry Savage is consulting physician to Guy's Hospital and to Earlswood Asylum for Idiots, and is a well-known authority on mental diseases. He was formerly physician and superintendent at the Bethlem Royal Hospital, President of the Medico-Psychological Association of Great Britain and of the Neurological Society, and is the late editor of the *Journal of Mental Science*. Sir Bertram C. A. Windle is a late member of the General Medical Council for the University of Birmingham, and is now President of University College, Cork. He is a Fellow of the Royal Society and of the Society of Antiquaries and a member of the Royal Irish Academy. He is Pro-Vice-Chancellor of the National University of Ireland, Chairman of the Standing Committee of Irish Technical Education, and a Commissioner for Intermediate Education in Ireland. The Hon. Sir Charles Kinnaird Mackellar is a Member of the Legislative Council of New South Wales and President of the State Children's Relief Board. Dr. Arthur Newsholme, who has been made a Companion of the Order of the Bath, is the medical officer to the Local Government Board, examiner in public health to the University of Cambridge, Crown nominee on the General Medical Council, and Ex-President of the Society of Medical Officers of Health and of the Epidemiological Section of the Royal Society of Medicine. He is a member of the Council of the Imperial Cancer Research Fund. His public work is well known to the members of the medical profession and needs no detailed mention from us. To each of these gentlemen we extend hearty congratulations in the name of the profession to which they belong. The name of Rider Haggard, so well known as a novelist, will also be recognised as that of an authority on the economic and social conditions of rural England. Sir Henry Rider Haggard has done useful public work as chairman of the Reclamation and Unemployed Labour Committee and of the Royal Commission on Coast Erosion and Afforestation. His report on the Salvation Army's colonies in the United States and at Hadleigh, England, which he issued, together with a scheme of National Land Settlement, in 1905, as British Government Commissioner, should be remembered for its valuable suggestions in support of the self-evident proposition that a healthy family on the land forms better national material than a sick family in a slum.

DECORATIVE SURGERY.

OPERATIONS may be usefully divided into two classes—into those which are required for the life, for the health, or for at least the comfort of the sufferer, and those which are performed merely to improve the personal appearance of the patient, if we may employ here a word which connotes suffering, though no physical pain be present. For suffering there often is, and it is none the less real though it does not happen to be physical. The distinction between the two classes of operations cannot always be drawn very clearly, for there are cases which lie on the border-line. An operation for strangulated hernia is undoubtedly an operation of necessity, and equally certainly an operation for the cure of a saddle-back nose is an operation undertaken merely in order to improve the personal appearance of its owner. In these two cases the distinction is obvious. But is the cure of a hare-lip to be considered an operation of necessity or an operation performed merely for the purpose of improving the patient's looks? A cleft palate may demand an operation for the purpose of improving the nutrition of an infant, but we doubt if any will be found to assert that a hare-lip of a moderate extent interferes with feeding. If the hare-lip is of the most extreme form, even though it is not associated with a cleft of the palate, it may certainly prevent a child from taking the breast well, but it will scarcely endanger the child's life. Yet what surgeon will hesitate to perform an operation for the cure of hare-lip? There can be no doubt that physical malformations which interfere in no way with the well-being of their possessor may yet cause an immense amount of mental torture to those who have them—an amount of mental pain which can hardly be imagined by those who are formed normally. A slight hare-lip, a nose with a sunken bridge, a nose with a bulbous end, the presence of a large mole on the face, even an overgrowth of hair on the face of a woman, may, harmless though they may be in themselves, be sufficient to make the lives of their owners intensely miserable, and may in only too many cases lead to a disinclination to appear in public, which in time will become absolutely morbid. It is easy but useless for the surgeon to tell such sufferers that the malformation of which they complain is of no importance, and that it is not worth while for them to have an operation performed. These statements, sound though they may be and supported with excellent arguments, are utterly without avail, for the sufferers know and feel that the deformity is still there and that it is obvious to others. They are, indeed, often too sensitive to the opinions of others, and they think that other people notice their malformation as much as they do themselves. It is easy to smile at this morbid sensitiveness, but it is important to recognise how vital a matter it is to those who are so afflicted. Even from a pecuniary point of view these deformities are not without importance. In several occupations a young woman will find a deformity of the face a very definite bar to employment, and she may be compelled to accept a lower rate of wages in consequence. It is certain that a servant with a hare-lip or an extensive growth of hair on the face will experience no little difficulty in obtaining employment, certainly most employers will be less willing to engage such a servant than one not so disfigured. The absence of a nose may not in the least interfere with the working powers of man, but he will undoubtedly find that it will militate against his power of getting work. This diminution in the earning capacity of those who have facial deformities is very real, and the knowledge of it, and the concomitant recognition of the fact that many people have an involuntary shrinking from those who are deformed, must

act prejudicially on the mind of the victim, and if there is the least mental instability it may suffice to upset the mental equilibrium; or if it should not go so far as this it may be enough to embitter the whole life of the sufferer, and to render him a much less useful member of society than he would otherwise be. Attempts to cure, to remove, or, at least, to mitigate, all facial deformities must be regarded as a very important part of the work of a surgeon, not so important indeed as the relief of an obstruction of the bowel, or the removal of a malignant growth, but surely as important as the remedying of a knock-knee or the excision of a lipoma. Decorative surgery is not only justifiable but is really essential for a large number of people if they are to pursue effectively the business of their lives, and we have only to determine what limits there are, if any, to surgical practice in this direction. The greatest care should be taken that the operations which may be included under the heading of decorative surgery should be conducted with all the precautions that modern science has shown to be necessary. The fact that these operations are not performed with life dependent upon them, and, strictly speaking, need not be performed at all, must not persuade the surgeon to relax his watchfulness. But the responsibility of assisting the public by cosmetic operations is upon the medical profession. If surgeons will not undertake the manifold operations belonging to this class the unqualified practitioner will step in and will carry out inefficiently the work neglected by the surgeon. Without training and without due knowledge of the conditions and of the risks that are run in operating and of the precautions that should be taken, unqualified operators do grievous harm. Already they venture to undertake much that is pure surgery, and the evil is growing. It is true that the surgeon is willing to operate on hare-lips and a few of the more striking deformities, but many of the malformations he will not touch. In skilled hands the risk and danger are small, and with practice the results may be very good. The work must be undertaken as a real and important part of surgery, and when carried out with care much misery will be saved and many men and women will be rendered more capable of earning a livelihood.

THE DECLINE OF PERSONAL HONESTY.

THE Penal Reform League, in its fourth annual report which has just been issued, takes up seriously the dictum of the head constable of Liverpool that there is "a general decline of personal honesty in many relations of life." That personal honesty is widely lacking, the report states, is well known, but whether it is generally declining there are no means of knowing. In any case, considering the prevalence of social and economic injustice, the unequal distribution of wealth, party strife in economics, politics, and religion, unfit parents and homes, and the stunting effect of schools, what right, it asks, have we to expect anything else? As signs of an awaking conscience in these matters, the report refers to the National Conference on the Prevention of Destitution, held last summer, the First International Congress on Children's Courts, and various other congresses touching cognate subjects. The tours of inspection of the secretary of the league, Captain Arthur J. St. John, lead him to comment on the over centralisation in this country, as compared, for instance, with the methods in vogue in America. He especially urges that children's places of detention should be under the charge of gentlewomen of exceptional attainments. He reviews the prevailing conditions in English, Scotch, and Irish prisons, and concludes that "neither the British Public nor their magistrates have yet grasped the whole meaning and possibilities of probation or of the juvenile court," which in his opinion should be not "a police court with children instead of adult offenders, but an aggressive child protecting agency." It is urged that the intelligent acceptance of Mr. Edmond Holmes's thesis, that "the function of education is to foster growth," must lead to a peaceful revolution in our ideas and our common life that in time will transform our whole criminal procedure and result in the disappearance of prisons. In two appendices are published certain suggestions for penal reform, of which the following seem to be the more important: Inebriates, mental defectives, and debtors should not be imprisoned, but treated or cared for; the replacing of imprisonment by probation or training for offenders under 23 years, the principle of probation being better organised and more widely extended; organisation of prison industries with a view to giving instruction in methods of gaining a livelihood, clothing prisoners better, and the training of character; the establishment of carefully organised parole or after-care system, and of prison farms and colonies; the holding of juvenile courts quite apart from other courts, in juvenile houses of detention and under special magistrates; and a change of *personnel* in prison administration, in respect of an improved method of selection of officials and a marked improvement in the conditions of life of prison officers.

GENERAL INFECTION WITH THE COLON BACILLUS PRODUCING DOUBLE PNEUMONIA AND PURULENT BRONCHITIS.

IN recent years it has been recognised that the colon bacillus may infect various parts of the body, producing inflammation. Infections of the urinary tract are the best recognised and may take the form of nephritis, pyelonephritis, pyelitis, or cystitis. Of lesions in other parts little is yet known. In THE LANCET of Oct. 30th, 1909, p. 1269, Dr. J. Charlton Briscoe reported several cases of matting together of the pelvic viscera by an exudate showing caseous changes and suggesting tuberculosis, but microscopic examination showed that the lesions were due to the colon bacillus, which was also found abundantly in the urine. In the *Boston Medical and Surgical Journal* of Nov. 30th, 1911, Dr. R. C. Kemp has reported a case of general infection with the colon bacillus in which double pneumonia and purulent bronchitis were produced. A man, aged 44 years, was operated on in the New York Hospital for right inguinal hernia on March 2nd, 1910. He was in perfect physical condition and his organs were found normal on examination. Though he took much exercise he was subject to constipation, for which he used olive oil and other simple remedies. On the afternoon of the day of operation catheterisation was necessary. On the next day there was some irritation of the bladder, which was washed out. On the following day there was pain in the left renal region and the urine contained pus. Pyelitis was diagnosed and urotropine was given. In three or four days the pain disappeared and then the right kidney was affected, but not so severely as the left. The pain on the right side soon disappeared, but pyuria and slight pyrexia continued. On March 11th he complained of pains in the right side of the chest, and on the 12th dry pleurisy was found. On the 14th a small pneumonic area was found at the right base. On the 16th there was an alarming attack of heart failure with a fall of temperature. Under digitalin, strychnine, hypodermic injection of camphor in olive oil, hot stupes, and inhalation of oxygen he rallied. On the 24th there was a rigor, and the temperature rose to 104° F. As there was still evidence of pyelitis this suggested infection with the colon bacillus, which was found in the urine in large numbers. Resolution of the lesion in the right lung was very slow. There was little sputum, but in it abundant colon bacilli were found

Early in May a sharp attack of colitis occurred. Subsequently, an attack of pneumonia at the left base with mild symptoms took place. The colon bacillus was again found in the sputum. In May a sudden attack of acute purulent bronchitis occurred. So thick was the pus that a pulmonary abscess was feared. On culture enormous numbers of colon bacilli and some streptococci were found. As there was still pneumonic expectoration it seemed that the bronchitis was due to infection from the pneumonia. Under autogenous vaccines the bronchitis improved, but the colon bacilli persisted in the urine. In June an exacerbation of the pyelitis occurred, and coincided with a second attack of colitis—a very suggestive fact. Ulcer of the colon was suspected, but examination of the stools for pus or occult blood was negative. In July the bacilluria with a few pus cells still persisted, and the evening temperature was 99° to 99·5° F. On August 7th the urine was found free from colon bacilli. It remained so until October, when the patient returned to business. Against advice he did a full day's work. About the fourth day he had a chill and rise of temperature, and colon bacilli reappeared in the urine, but not in great numbers. He was then sent to the South of France. In December he wrote that only a few colon bacilli could be found in the urine and that his temperature was normal. Throughout the illness urotropine and sodium benzoate were given, at one time 80 grains of each daily.

THE EVIDENCE FOR THE SUPERNATURAL.

No one goes far along a medical career (or any other, for that matter) without being asked whether he believes in telepathy, or ghosts, or clairvoyance, or some other allied manifestation of supernatural forces. Whether sceptic or believer he will meet with most circumstantial histories in support of such manifestations, yet almost never at first hand. However sceptical he be, he can hardly fail to be struck by the perpetual recurrence of supposed examples of supernatural manifestations and by the firmness of conviction which these histories engender in people apparently well balanced, and he may wonder how it is that, if there be no truth in the business, such beliefs have not long since shared the fate of witchcraft and necromancy. Those who wish to find a solution to these questions may be recommended to read a book by Dr. Ivor Tuckett,[1] the title of which we have borrowed for this annotation. In it they will find a cool and critical review of the evidence both for and against the supernatural, by one who has had no personal part or lot in procuring the evidence, who has no first-hand knowledge of séances and the like, but has simply set himself to a detached survey of the recorded evidence of experimenters in this field. Undoubtedly the witness of such a critic is entitled to more weight than that of actual participants in the proceedings analysed, especially in such a hazy matter as this, wherein sober judgment is continually threatened by subjective traps and pitfalls. It is sometimes rashly assumed that a scientific training is a sufficient qualification for the investigation of these subtle subjects, and that if a scientist of high standing in his own line announces his belief in spiritualism, let us say, the case for spiritualism at once receives a backing proportionate to the scientist's pre-eminence in physics or what not. This is not the least important of the many fallacies which envelope this elusive subject; for the adhesion to supernatural beliefs of men so eminent as Sir Oliver Lodge and Sir William Crookes has undoubtedly influenced many waverers. Yet it is obvious that those who by training are well accustomed to be critical with regard to experiments conducted under laboratory conditions, conditions whose first element is constancy of the items forming the experiment, may be poor critics of experiments whose circumstances are always vague and never twice identical. It is true to say that a practical knowledge of conjuring in all its branches, combined with training in psychology, is a better endowment for the investigator in these paths than any other scientific equipment, be the latter never so ample. Those who read this book will find in it a temperate and balanced estimate of the evidence for supernatural interference in the daily affairs of men. It is not everyone who will relish its conclusions all along the line, but it is decidedly a book to be read by all who are interested in human psychology; and every practitioner of medicine ought to place himself in this category.

[1] The Evidence for the Supernatural. By Ivor Ll. Tuckett, M.D. London: Kegan Paul. 1911. Pp. 399. Price 7s. 6d. net.

THE OPHTHALMOSCOPE IN GENERAL PRACTICE.

IT is a commonplace of the text-books that the ophthalmoscope can often bring light upon the diagnosis of extra-ocular diseases, and its use for this purpose was greatly increased by the pioneer work of Hughlings Jackson and Gowers in this country. At the same time it is open to doubt whether this instrument is so generally employed as a routine agent in the diagnosis of obscure cases in the general practice of medicine as its value and importance would indicate. From the character of the information it affords, it is worthy to rank with the stethoscope and the thermometer, and indeed it may afford in many instances information which is either pathognomonic or highly suggestive in regard to diagnosis. It is, moreover, in comatose cases and those from whom no history is obtainable that the ophthalmoscope may be of special value. In illustration we may mention some of the conditions which it is easy to recognise with a very little practice and experience in the use of the ophthalmoscope. The appearance of optic neuritis and papillitis in cerebral or cerebellar tumours is well known as one of the most significant signs of these conditions, but it may be doubted whether the ophthalmoscope is generally employed as it should be in all cases of persistent headache, in all forms of convulsions or fits, and in cases with marked neurotic or hysterical manifestations. The mistaking of a brain tumour for hysteria is by no means an infrequent occurrence, and the diagnosis is often only determined by ophthalmoscopic examination. The various forms of neuro-retinitis may also be of importance in diagnosis and lead to the discovery of chronic nephritis and diabetes. It is said that albuminuric neuro-retinitis occurs in from 15 to 20 per cent. of all cases of chronic nephritis, especially of the interstitial variety. The discovery of syphilitic choroiditis on examination of the fundus may serve in an obscure case of visceral disease or of nervous lesion to indicate its nature and suggest a more hopeful prognosis and a specific line of treatment. The recognition of optic atrophy may be an important link in the diagnosis of some chronic diseases of the central nervous system, such as locomotor ataxy, disseminated sclerosis, and general paralysis of the insane, or may serve to suggest the occurrence of lead poisoning as an explanation of obscure nervous symptoms. The vascular conditions of the retina may also be of great importance, and the finding of retinal hæmorrhages may throw light upon the nature of some chronic anæmias, or suggest the presence of chronic nephritis. Embolism of the central artery in a difficult case of chronic fever may reveal the malignant character of the endocarditis causing it. Other examples may be mentioned in the pulsation of the retinal arteries in aortic disease and the so-called "silver-wire" arteries of chronic interstitial nephritis. The occurrence of tubercles in the choroid in general miliary tuberculosis may also be of great importance

XVIIth International Congress of Medicine.

LONDON 6th–12th AUGUST, 1913.

January, 1912.

DEAR SIR,—We beg to inform you that the XVIIth International Medical Congress will be held in London from August 6th to August 12th, 1913, inclusive.

His Majesty King George V. has graciously accorded his patronage to the Congress.

In the name of the Organising Committee of the Congress we beg leave to invite you to take an active part therein. The Rules, which you will find annexed, will give you all the necessary preliminary information.

The programme of the Congress and of its various Sections, including the arrangements for general meetings and for the general discussions in the Sections, will be published not later than September 30th, 1912, and will be forwarded to all those who shall at that time have inscribed themselves as members of the Congress.

We beg to append a form of application for membership and should be glad if you would inscribe your name as a member of Congress at the earliest possible opportunity.

An appeal will shortly be made to the profession for funds to meet the necessary expenses of the organisation of the Congress, which, it is estimated, will be not less than £8000, exclusive of the subscriptions of members.

We have the honour to remain, dear Sir, yours obediently,

THOMAS BARLOW, President.
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Vice-Presidents.—Professor Sir Charles Cameron, C.B., M.D., F.R.C.P.I., F.R.C.S.I.; Professor Sheridan Delépine, M.B., C.M., M.Sc.; Professor Edward W. Hope, M.D.; W. Leslie Mackenzie, M.D., F.R.C.P. Ed., F.R.S. Ed.; Sir Shirley F. Murphy, F.R.C.S., Sir George Newman, M.D., F.R.S. Ed.; Edward C. Seaton, M.D., F.R.C.P.; T. J. Stafford, C.B., F.R.C.S. I.; Sir Arthur Whitelegge, K.C.B., M.D., F.R.C.P.
Secretaries.—A. S. Arkle, M.R.C.S., L.R.C.P.; J. C. G. Ledingham, D.Sc., M.B., Ch.B.; G. F. McCleary, M.D.; W. G. Willoughby, M.D.

Section XIX.—Forensic Medicine.

President.—Professor Harvey Littlejohn, M.B., C.M., F.R.C.S. Ed., F.R.S. Ed.
Vice-Presidents.—Professor John Glaister, M.D., F.F.P.S., F.R.S. Ed.; Professor Matthew Hay, LL.D., M.D., F.R.C.P. I.; Professor R. J. Kinkead, M.D.; Professor John Dixon Mann, M.D., F.R.C.P.; David Nicolson, C.B., M.D.
Secretary.—W. A. Brend, M.B.

Section XX.—Naval and Military Medicine.

President.—Surgeon-General Sir James Porter, K.C.B., M.A., M.D., K.H.P., Director-General Medical Department, R.N.
Vice-Presidents.—Surgeon-General Sir Launcelotte Gubbins, K.C.B., M.V.O., M.B., M.Ch., K.H.S., Director-General, A.M.S.; Surgeon-General Sir Charles P. Lukis, K.C.S.I., M.D., F.R.C.S., Director-General, I.M.S.
Secretaries.—Naval: Fleet-Surgeon G. T. Collingwood, M.V.O., M.R.C.S., L.R.C.P., R.N.; Military: Major C. E. Pollock, M.R.C.S., L.R.C.P., R.A.M.C.; Indian Medical Service: Captain A. P. G. Lorimer, M.B., I.M.S.

Section XXI.—Tropical Medicine.

President.—Colonel Sir David Bruce, C.B., LL.D., M.B., C.M., F.R.C.P., F.R.S.
Vice-Presidents.—Lt.-Col. Sir W. B. Leishman, M.B., C.M., R.A.M.C., F.R.S.; Professor Sir Ronald Ross, K.C.B., LL.D, F.R.C.S., F.R.S.; F. M. Sandwith, M.D., F.R.C.P.
Secretary.—Arthur G. Bagshawe, M.B., B.C.

Section XXII.—Radiology.

President—Sir J. Mackenzie Davidson, M.B., C.M.
Vice-Presidents.—W. Deane Butcher, M.R.C.S.; C. Thurston Holland, M.R.C.S., L.R.C.P.; H. Lewis Jones, M.D., F.R.C.P.; Hugh Walsham, M.D., F.R.C.P.
Secretary.—G. Harrison Orton, M.D.

RULES OF CONGRESS.

ART. 1.—The Seventeenth International Congress of Medicine will be held under the august patronage of His Most Gracious Majesty George V., King and Emperor.

ART. 2.—The Congress will be opened on 6th August, and will close on 12th August, 1913.

At the time of Congress the Central Bureau will be located in the Royal Albert Hall, Kensington Gore, W., and will be opened for the inscription of Members on Tuesday, 5th August, at 10 a.m.

ART. 3.—The object of the Congress is exclusively scientific.

ART. 4.—The Members of the Congress will be: (*a*) Qualified members of the medical profession, who have made formal application, and have paid the subscription hereinafter fixed; (*b*) scientific men who have been nominated by a National Committee or by the Executive Committee, and have paid the same subscription.

ART. 5.—The subscription is: £1 sterling; 25 kroner (Austria); 25 francs; 20 marks; 15 rupees; 20 kroner (Norway); 5 dollars (United States or Canada).

The wives and daughters of Members of Congress desiring to profit by the advantages accorded to them must pay half the subscription fee.

Subscriptions should be sent by postal order or cheque payable to the Treasurers, XVIIth International Congress of Medicine, and the Section in which each member wishes to be inscribed must be indicated. In the case of any country in which there is no system of international postage exchange the services of a banker must be employed. No one can be enrolled as member of Congress before the receipt of his subscription.

An applicant when sending his subscription should enclose his visiting card indicating his medical qualifications and titles and his full postal address. Any change of address must be immediately notified. Cards of Membership will be sent out from the Central Office of the Congress within eight days following the receipt of the subscription.

ART. 6.—Members of Congress will receive the volume of the Transactions recording the proceedings at the general Sessions, as well as the Transactions of the Section in which they have been inscribed.

ART. 7.—The Sections of the Congress are 22 in number, besides which three subsections are established, namely:—I. Anatomy and Embryology; II. Physiology; III. General Pathology and Pathological Anatomy; III*a*. (Subsection) Chemical Pathology; IV. Bacteriology and Immunity; V. Therapeutics (Pharmacology, Physiotherapy, Balneology); VI. Medicine; VII. Surgery; VII*a*. (Subsection) Orthopædics; VII*b*. (Subsection) Anæsthetics; VIII. Obstetrics and Gynæcology; IX. Ophthalmology; X. Diseases of Children; XI. Neuropathology; XII. Psychiatry; XIII. Dermatology and Syphilography; XIV. Urology; XV. Rhinology and Laryngology; XVI. Otology; XVII. Stomatology; XVIII. Hygiene and Preventive Medicine; XIX. Forensic Medicine; XX. Naval and Military Medicine; XXI. Tropical Medicine; XXII. Radiology.

ART 8.—The organisation of the Congress is in the hands of the Organising and Executive Committees.

ART. 9.—There will be two General Meetings of the Congress, the Inaugural Meeting and the Closing Meeting.

At these meetings the speakers will be the Government Delegates who have been invited by the Organising Committee or designated as such, and these alone. At the Closing Meeting the President will announce the city in which the next Congress will be held. This will be determined by the Permanent Commission which will sit during the Congress.

ART. 10.—The scientific work of the Congress will consist in:—(*a*) general sessions; (*b*) sectional sessions; (*c*) combined sessions of two or more Sections.

ART. 11.—The number of general sessions and the number of speakers will be fixed by the Executive Committee. There will be no debates in the general sessions.

ART. 12.—The sessions of the Sections will be occupied in formal discussions on the Reports (*rapports*), also by the reading and discussion of papers on subjects chosen by individual members of Congress. The work ot the Sections is dealt with in separate regulations.

ART. 13.—Two or more Sections may hold combined sessions.

ART. 14.—Members of Congress may take part in the proceedings of Sections other than that in which they have been inscribed.

ART. 15.—The speeches delivered at the Opening and Closing General Meetings, as well as the Reports opening formal discussions, will be published in full. As to communications on subjects selected by individual members, only those papers will be published which the authors have personally presented to the Congress, and the Executive Committee, after consultation with the Sectional Committees, has decided to publish.

ART. 16.—The manuscripts of speeches delivered at the General Meetings must be sent to the General Secretary. The manuscripts of remarks made in discussions and papers read by individual members at the Sectional Sessions must be delivered immediately (*see* Art. 14 of the Sectional Rules) to the Secretary of the Section concerned.

ART. 17.—The Central Office of the Congress will use the English, French, and German languages for international business. In the General Meetings Italian may be used as well as these languages.

ART. 18.—All correspondence should be addressed to the offices of the Congress, as follows:—

The Hon. Gen. Secretary,
XVIIth International Congress of Medicine,
13, Hinde-street, London, W.

On the envelopes of letters relative to the scientific work of the Sections, the Section to which they refer should be specified.

ART. 19.—Information concerning the reductions in fares granted by railway companies, hotel and boarding accommodation, excursions, &c., will be published before the 30th April, 1913.

RULES OF SECTIONS.

ART. 1.—The Sections will meet at 9.30 a.m. and at 3 p.m.

ART. 2.—The first Session of each Section will be opened on Wednesday, 6th August, at 3 p.m.

ART. 3.—The President of the Section will be responsible for the conduct of the discussions, for the application of the rules, and for the punctual accomplishment of the work of the Secretaries. If the President is prevented from being present at any Session of his Section, his place will be taken by one of the Vice-Presidents or by a Member of the Council of the Section.

ART. 4.—There will be no Honorary Presidents of Sections.

ART. 5.—The Sessions will be conducted according to the Parliamentary regulations in general usage.

ART. 6.—The Sessions will include discussions on the Reports and the reading and discussion of papers on subjects selected by individual Members.

ART. 7.—Reports (*rapports*). In each Section the morning Session will be reserved for the discussion of important questions which have been previously selected by the Council of the Section. Each discussion will be introduced by one or two Reporters chosen by the Council of the Section with due regard to the International character of the Congress. The definite programme of the discussions will be published on September 30th, 1912. The manuscripts of the Reports must be typewritten, and must be sent to the Central Office

Cut here.

XVIIth INTERNATIONAL CONGRESS OF MEDICINE.

LONDON, AUGUST 6th-12th, 1913.

No. _____

SECTIONS:

i. Anatomy and Embryology.
ii. Physiology.
iii. General Pathology and Pathological Anatomy.
(Sub-Section) Chemical Pathology.
iv. Bacteriology and Immunity.
v. Therapeutics.
vi. Medicine.
vii. Surgery.
(Sub-Section) Orthopædics.
(Sub-Section) Anæsthesia.
viii. Obstetrics and Gynæcology.
ix. Ophthalmology.
x. Diseases of Children.
xi. Neuropathology.
xii. Psychiatry.
xiii. Dermatology and Syphilography.
xiv. Urology.
xv. Rhinology and Laryngology.
xvi. Otology.
xvii. Stomatology.
xviii. Hygiene and Preventive Medicine.
xix. Forensic Medicine.
xx. Naval and Military Medicine.
xxi. Tropical Medicine.
xxii. Radiology.

To the HON. GENERAL SECRETARY.

Dear Sir,

I beg to ask you to inscribe my name as a member of Congress in the _____ *th Section, and to forward my subscription of* _____ *by Postal Money Order.*

Date _____

Name in full _____

Medical Qualifications _____

_____

Other Titles _____

Full Address _____

Kindly attach your visiting card, and please write distinctly.

I beg also to forward subscriptions for:—

1. MY WIFE—*Name in full* _____

Address _____

2. MY DAUGHTER—*Name in full* _____

Address _____

This application should be returned to The General Secretary, XVIIth International Congress of Medicine, 13, Hinde-street, London, W. Subscriptions (see Rules of Congress, Art. 5) are payable to the Treasurers, and must be enclosed with the application.

of the Congress by February 28th, 1913, at the latest. The Reports of each Section will be printed and distributed three months before the opening of the Congress, to all members of the Section who have then been enrolled. (See Rules of Congress, Articles 4 and 5.) The reports will not be read *in extenso* at the session. Each reporter will, however, be allowed a maximum of 15 minutes for an opening *résumé*, and 10 minutes for a reply at the end of the discussion Other speakers taking part in the discussion will be allowed a maximum of 10 minutes only for their remarks.

ART. 8.—Members of Congress who desire to take part in the discussion of any Report may enter their names before the Congress by giving written notice to the General Secretary. During the Session they must communicate directly with the Secretary of the Section.

ART. 9.—Speakers will be called upon by the President according to the order of their inscription on the Agenda.

ART. 10.—Independent Papers. The afternoon Sessions will be devoted to the reading and discussion of independent papers. The titles of such papers ought to be announced to the Central Office of the Congress by the 30th of April, 1913 The Council of the Section has the right of selection from among the papers offered, and of declining any that they do not consider desirable. The Council of the Section will arrange the order in which the selected papers shall be read. Any papers offered after the 30th of April, 1913, will only be placed upon the agenda after the discussion of those which have been announced before this date and have been chosen by the Council of the Section. No paper will be accepted unless the text has been received by the Secretaries of the Section before the 1st of July, 1913. A maximum of fifteen minutes will be allowed for the reading of a paper, and five minutes for each speaker who takes part in the discussion. The author of the paper will be allowed five minutes for a reply.

ART. 11.—Speakers will receive two intimations from the President as to their time limit; notice will be given two minutes before, and at the moment of expiry of the period allowed.

ART. 12.—For certain communications of particular importance and general interest, the President may, with the consent of the Section, prolong by five or ten minutes the periods already indicated.

ART. 13.—If a speaker wanders from the subject under discussion, or indulges in personalities, the President may call upon him to sit down. If several members ask to speak upon a paper, and the hour is late, the President may on his own authority, or upon the proposition of a member, defer further discussion upon that paper to the end of the Session, if time permits.

ART 14.—The text of the remarks made in the course of discussions will only be inserted in the Transactions of the Congress if the speaker sends it in writing, condensed into 20 lines of print, to the Secretary of the Section before the end of the Session. (Block note-sheets will be placed for this purpose at the disposal of members by the Secretaries.) Those who omit to conform to this regulation will lose the right to have their remarks published in the Transactions.

ART. 15.—The Executive Committee reserves to itself the right to abridge the report of any discussion, and to omit any remarks of a personal character.

ART. 16.—Private resolutions can only be proposed after previous notice given to the President, and when the business on the Agenda has already been disposed of. For the proposal of any special resolution a maximum period of five minutes only will be allowed. The President will authorise only such resolutions as come within the limits of the work of the Section.

ART. 17.—No vote may be taken, nor any resolutions passed, upon questions of science or theory, but only on such questions as possess a practical or administrative character. On such questions the sense of the meeting will be taken by the majority standing or remaining seated. The President will transmit such resolutions as shall be passed, through the General Secretary, to the Permanent Commission of the Congress. The Commission will decide whether the resolutions in question ought, or ought not, to be put to the vote at the Closing Meeting of the Congress.

ART. 18.—The Secretaries of each Section will send an account of its transactions for the daily journal. This account will mention in chronological order the subjects of the Reports and discussions, the papers read, the names of the speakers, and any resolutions submitted to the Section.

and be pathognomonic in an otherwise obscure case of acute illness in childhood. Although all these conditions and their indications are known to many students preparing for examination as well as to practitioners, there is little doubt that they are not as generally applied as they should be. The ophthalmoscope is not a difficult instrument on which to acquire a sufficient facility for all ordinary purposes; the question of a suitable light is readily solved by any of the simple and cheap portable electric lamps now available, and in difficult cases dilatation of the pupil can quickly be obtained by a little homatropine. The opportunities given at hospitals and in post-graduate courses to learn the use of the ophthalmoscope are now abundant, and the time and trouble spent in this way are amply repaid.

THE PROGRESS OF SCHOOL HYGIENE IN PORTUGAL.

A CORRESPONDENT, writing from Lisbon, informs us that the Portuguese Government has determined on the medical inspection of superior upper schools and lyceums until such time as it shall be possible to extend the practice to all primary schools. Medical inspection is further about to be organised for certain private establishments. An important movement also, having for its aim the diffusion of new methods of education, which will result in considerable progress in both public and private teaching, is on the point of establishment. The Portuguese Society of Pædagogic Studies, founded Jan. 15th, 1910, has taken the lead in the movement for making known what are the scientific data and practical foundations of a sound educational system. As a beginning, the members of the society will hold a series of public conferences at which the following subjects will be discussed: the scientific basis of education; the psychology of the child; the medical inspection of schools; manual training in schools; sexual ethics; the struggle against alcoholism in the primary school; pædagogic methods; the coöperation of the family with the school in education; art in the school; children's gardens; interchange of school amenities; school fêtes and excursions. Next April a Congress of Pædagogy—the third in Portugal—organised by the National League for Instruction, will take place at Lisbon, and its second section will be devoted to school hygiene. The method of primary instruction will be entirely reformed on a plan to be established, on the proposition of Dr. Ladislau Piçarra, senator, after consultation with the Society of Pædagogic Studies.

ANCIENT HINDOO REMEDIES.

NERVOUS instability, amorousness, and mental fatigue would seem to be Hindoo characteristics, to judge by the newspaper announcements of the remedies of a certain Mr. Kaviraj Keshab Lall Roy. These are described as "some of the best specifics ever found out in the system of Ayurveda"—i.e., medicine. We ought, perhaps, to accept this statement as being made in good faith. There is, indeed, reason to suppose that the domestic medicine of Hindustan is still in the Vedic stage, and that a quack medicine in India is probably a traditional one, a descendant, indeed, of the pharmacopœia of the early Sanscrit philosophers. The ancient Hindoo pharmacy and therapeutics have of late years been illustrated by two notable publications. Of these, the first, published in 1905 by the University of Harvard, is Whitney's translation, with notes by Lanman, of the famous "Atharva-Veda." The second is the revised translation of the "Bower Manuscript" of the "Nâvanîtaka" (a Sanscrit work on medicine), published in 1909, under the editorship of Dr. Rudolf Hoernle, by the Archæological Survey of India. The Atharva-Veda is mainly concerned with prayers, incantations, and charms. The "Nâvanîtaka," on the other hand, is a vast handbook for the legitimate practitioner or for the self-medicating individual. It deals with diseases known to antiquity and chiefly prescribes vegetable remedies or simples, such as clarified butter. Thus chyavanaprâsa, or medicated ghee, so called after the famous sage Chyavana, is frequently referred to and perhaps reappears as the chyavanpras, recommended in cases of debility by Lall Roy. Impotence is for obvious reasons regarded as a particular calamity in the East, and thus we find an important section of the book devoted to aphrodisiacs, some of which are terrific enough. The medicine known as "the Sarasvati Clarified Butter" is for a Râjarshi who desires to beget a son. "Juice of Gôkshuraka (Tribulus terrestris), clarified butter, and milk of both a goat and a cow, together with one prasrita of honey, makes a prescription capacitating a man, &c." Another simple mixture, made into boluses, increases this capacity, and ensures "favouritism" among members of the other sex! Emblic myrobolan creates an erotic monster, and we are in the region of Orienal exaggeration with a vengeance. Signaturism plays a large part in the concoction of these mixtures. Thus "sparrow broth" and pig's fat are frequently recommended to the voluptuary, as also red rice, goat's milk, and the flesh of a cock. There is usually, however, some herbal ingredient, such as Ipomœa digitata, in any given medicine, which probably has a certain efficacy, even though it be only purgative.

THE CARE OF THE COMING RACE.

FEW public duties are of farther reaching importance than that of providing for the proper bringing up in sound health and adequate development of the future citizens of the Empire. While undoubtedly a considerable part of the present defective stamina of children, especially among the poorer classes, is due to unsatisfactory environment, quite a large part also is dependent on the ignorance of those on whose care the upbringing of the little ones devolves, an ignorance of how to make the most of those possibilities they possess, and how to ameliorate existing disadvantageous conditions. It was to combat this ignorance that the National League for Physical Education and Improvement was incorporated in 1905. Among the work done by this league was the establishment of infant consultation centres and of schools for mothers. During the past two years there has been a rapid increase in this work, and it is thought that the time has come for a further development of the organisation in relation thereto. We learn, accordingly, that it has been decided to form a special department to coördinate the work and to promote the formation of new centres. With this end in view, the Association of Infant Consultations and Schools for Mothers was inaugurated recently in a well-attended meeting, the chair being taken by Alderman Broadbent, of Huddersfield, whose name is so well known in relation to the cause of infant upbringing. At this meeting the constitution of the association was decided upon, and a strong provisional executive committee was formed to carry on the work until the first meeting of the representative general council can be held. The medical profession has accorded the movement generous countenance, and is to be represented on the governing bodies in equal numbers with non-medical delegates from the 34 affiliated societes. Alderman Broadbent, in his remarks, drew special attention to the happy combination of municipal and voluntary effort already effected in certain districts. The attention of the association is directed towards the establishment of a uniform method of keeping records and statistics, a necessary factor in all successful collaborative work. By this means, newly forming

societies can receive guidance and help to direct their efforts aright by the light of the failures and successes of their predecessors. All interested in the formation of societies of kindred aim can obtain valuable guidance by applying to the league at 4, Tavistock-square, London, W.C. There are now to be obtained from the league a leaflet of suggestions for the formation of consultation centres, medical case papers, and recording charts, while a series of coloured wall charts setting forth hygienic truths is in course of preparation. The first deals with the dangers of long-tube feeding-bottles. Others will pictorially demonstrate the dangers of unguarded fireplaces, the use of push carts, and similar matters. The stimulation of public interest in this subject is the function of the league, and the coördinating of the organisations that must necessarily result from such stimulus will be undertaken by the association. The work is surely worthy of support.

COLD ABSCESS OF THE ABDOMINAL WALL.

M. Savariaud opened a clinical lecture at the Trousseau Hospital recently by saying that the first thing essential to a correct diagnosis of certain morbid conditions is that the practitioner must be aware that such conditions do somel times exist. The remark is peculiarly apposite in relation to the relation between tuberculosis and primary cold abscess of the abdominal wall. Dr. Savariaud said that although tuberculosis is exhaustively studied, and so fully described in text-books, in its relation to most organs, there is general silence as to its occurrence in this position. Nevertheless, he has himself seen three cases in children within two years, and he quotes, in *La Semaine Médicale*, reports from other surgeons which bring the total number of recorded cases up to 21. Among these every age is represented. As a rule, the disease of the abdominal wall is not preceded by any other manifestation of tuberculosis. The abscess is most often situated laterally and rarely in the epigastric or umbilical regions; any of the various layers of the abdominal wall may be implicated, but the muscles and aponeuroses are the sites of election. The infection is usually blood borne, but it may reach the abdominal wall by the subperitoneal lymphatics, and M. Savariaud considers that it may begin as an invasion of the iliac lymph glands. The first symptom is pain, which, however, ceases as soon as the swelling has attained a certain size; it rarely becomes larger than an egg. It may have a solid consistence, or there may be a soft, fluctuating centre resting upon an indurated base. In either case it does not move with respiration, but hardens and disappears more or less completely during contraction of the abdominal muscles. The course of the disease is chronic, even exceeding a year in some instances. The possibilities of error in diagnosis are of two kinds: the swelling may be regarded as a new growth of the abdominal wall, or it may be mistaken for a lesion of the viscera within the abdomen. Indeed, in one of the cases reported by M. Savariaud the patient was thought to be suffering from cholecystitis up to the time of operation—in fact, until the first stages of the incision discovered pus in the abdominal wall itself. In these cases it is always necessary to take special care to exclude tuberculous lesions of the neighbouring bones (ribs, spine, pelvis), as spread of the infection from these may provoke the formation of intermuscular abscesses hardly distinguishable from those which arise primarily within the abdominal wall. The prognosis is good; open operation is nearly always successful in effecting a cure, the only troublesome sequelæ being fistulæ demanding further operative treatment and ventral hernia following the larger abscesses.

THE FEEBLE-MINDED AND THE LUNACY ACTS.

WE have received from the clerk to the guardians of Fulham a copy of a report by the workhouse visiting committee of that parish relative to the question of increasing the legal powers of compulsory detention of feeble-minded persons. The committee refer to the decision of the courts in the case of R. *v.* Shaw, as establishing the view that "imbecility and loss of mental power, whether arising from natural decay or from paralysis, softening of the brain or other natural causes, or intemperance, and though unaccompanied by frenzy or delusion of any kind, constitute unsoundness of mind amounting to lunacy" within the meaning of the Lunacy Acts. And they further quote the opinion of the Lunacy Commissioners, as stated in their reports for the years 1910 and 1911, to the effect that the powers conferred by Section 24 (3) of the Lunacy Act of 1890 would, if more liberally used, enable local authorities to certify and detain the weak-minded women and girls and the imbecile youths who have hitherto been allowed to live an in-an-out existence in the workhouses to their own detriment and with serious inconvenience and danger to the community. Accepting this view of the legal position, the committee deprecate the suggestion that there is any need to ask the legislature for further powers in order to deal effectively with these cases. While it is very gratifying to learn from this report that there are local bodies which take this broad view of their responsibilities, it must be borne in mind that the opinion which the Fulham guardians are putting forward has not hitherto been generally admitted, and it is tolerably certain that, even if it were recognised as sound in principle, it would be acted on by only a very small number of Poor-law authorities. Moreover, the insane wards of the workhouses, however admirably managed, are obviously unsuited for the permanent detention of the congenitally defective persons who form the large majority of the feeble-minded class. The continuous treatment with industrial occupation which these cases require can only be provided in institutions organised for their specific needs. While, therefore, it is eminently desirable that the fullest use should be made of the powers available under the existing law, it must be clearly understood that such powers are entirely inadequate to deal with the problem and that their value is merely that of a temporary expedient pending the adoption of a complete and thorough method for controlling this social evil.

THE Registrar-General desires to intimate to medical officers of health that they will be furnished about Feb. 1st with particulars of transferable deaths registered during the last quarter of 1911. At the same time will be supplied to them the numbers of births to be added to or deducted from those furnished them by registrars in order to correct for lying-in institutions in accordance with the announcement made in a footnote to Table I. of the Local Government Board. A copy of the Registrar-General's "Manual of Causes of Death" will, it is hoped, be sent to every medical officer of health during the latter part of the present month.

Dr. Sun Yat Sen, whose election to the Presidency of the new Republic of China is reported in the *Times*, studied medicine at Tientsin, and subsequently joined the staff of the Alice Memorial Hospital in Hong-Kong. Before engaging in politics he practised for a time in Canton.

THE Lord Chancellor has appointed Mr. Barnard Thornton Hodgson, barrister-at-law and secretary to the Commissioners in Lunacy, and Dr. Charles Hubert Bond, medical superintendent of the Long Grove County of London Lunatic

Asylum, to be Commissioners in Lunacy; and Mr. Oswald Eden Dickinson, barrister-at-law and secretary to the Lord Chancellor's Visitors in Lunacy, has been appointed, with the approval of the Lord Chancellor, secretary to the Commissioners in Lunacy, in the place of Mr. Hodgson appointed a Commissioner in Lunacy.

THE committee of organisation of the Seventh International Congress of Dermatology and Syphilography (Rome) has fixed as the date of the Congress April 8th–13th, 1912, immediately preceding the International Congress against Tuberculosis, which will take place on April 14th–20th. The final programme of the Congress of Dermatology will be printed during the latter half of the present month, and fresh communications can still be inserted up to Jan. 15th.

Mr. Robert Denman, M.R.C.S. Eng., L.S.A., D.P.H. Cantab., Director of the Medical and Health Department of Mauritius, has been nominated a Member of the Council of Government of the Colony of Mauritius.

WE regret to announce the death on Dec. 30th, 1911, at the age of 57, of Dr. John Francis Sutherland, Senior Deputy Commissioner in Lunacy for Scotland.

DONATIONS AND BEQUESTS. — The late Dr. Kershaw, formerly medical officer of health of Royton, has left his estate, of the value of £40,000, for hospital purposes for the town of Royton. It is proposed to erect a hospital at the estimated cost of £11,000 and an estimated upkeep of £2100 per annum. Under this scheme the hospital would have 30 beds, which would mean that the council would have to raise £1100 annually.—Under the will of the late Mr. John Roderick, of Staffordshire, the testator left £50,000 to the Birmingham General Hospital, £10,000 to the Queen's Hospital, Birmingham, £1000 to the Birmingham General Dispensary, and £1000 to the Birmingham Skin and Urinary Hospital. The estate duty on the property will absorb about £40,000, and after payment of this duty and the above bequests there will be a balance remaining of about £185,000, which will be reduced by payment of legacy duty at the rate of 10 per cent. on the various bequests to about £153,000, and this balance he left as to one-half to the Birmingham General Hospital, one-fourth to the Queen's Hospital, Birmingham, and one-fourth to the Birmingham General Dispensary.—The late Mr. Alfred John Heath, of Putney, has left the following legacies on the death of his mother:—A sum sufficient to endow a bed to be called "The Alfred and Clara Heath Bed" in each of the following hospitals: The London Hospital, the Middlesex Hospital, the Charing Cross Hospital, King's College Hospital, St. Mary's Hospital, Paddington, the Cancer Hospital, Fulham-road, S.W., and the Miller Hospital and Royal Kent Dispensary, Greenwich-road, S.E., and to the Hospital for Sick Children, Great Ormond-street, a sum sufficient to endow a cot to be called "The Cissy Cot," in memory of his sister, Clara Elizabeth Heath. All other his property he left to King Edward's Hospital Fund for London. The amount available for these charitable objects is about £17,000.—The late Mr. Joseph Withers has left by will £5000 to the Victoria Park Hospital, on condition that that hospital provides the mayor of the borough of West Ham with letters for the use of the poor.—The treasurers of the Middlesex Hospital have received a donation of 1000 guineas from Mr. J. D. Bland to endow a bed in memory of his wife.

PRESENTATION TO A MEDICAL PRACTITIONER.—Mr. Duncan R. Macdonald, L.R.C.P., L.R.C.S. Edin., has been presented by his friends and patients in Dunbar with a cheque for £348 for the purpose of purchasing a motor-car. This kindly act has been prompted by the desire of Mr. Macdonald's friends to conserve as much as possible his strength. The presentation was made in the parish church hall, Dunbar, on Dec. 27th, 1911, in the presence of a large and representative gathering of subscribers.

ON PULQUE AND PULQUE-DRINKING IN MEXICO.[1]

BY JOHN BLAND-SUTTON, F.R.C.S. ENG.,
SURGEON TO THE MIDDLESEX HOSPITAL.

THROUGHOUT the world men have discovered means for obtaining alcoholic beverages by the fermentation of starchy matter and saccharine juices obtained from the vegetable kingdom. The starch of cereals yields beer, whisky, and saké; from the juices of grapes, berries, apples, sugar-cane, pine-apples, bananas, and other fruits men obtain wine, brandy, cider, rum, and the like.

During a visit to Mexico I have had opportunities for studying pulque, an alcohol drink obtained from the fermentation of the sap of the maquey (Agave Mexicana).

The cultivation of this plant is an important industry on the Mexican tableland, and the maquey plantations are very extensive aud as numerous as cornfields in England. The maquey, or pulque-plant, is interesting as well as useful. When full grown it may be 10 feet high and possess 30 to 70 thick fleshy leaves arranged in rosette fashion on a stout fleshy stem, which is usually so short that the leaves appear to spring from the root. The leaves are thick, long, and terminate in a formidable spine, two inches or more in length, sharp and strong enough to penetrate leather. The edges of the leaves are armed with strong barbs, so that when a number of agaves are planted close together, the spiny armature of their leaves constitutes an impenetrable fence against man and beast.

The plant is propagated by means of shoots which spring from the roots of adult plants after flowering. These shoots are carefully planted in rows of about a hundred plants to the acre. The hole made for the reception of the plant is about a yard square and filled with good loose soil. In about seven years the maquey matures, and a single stalk or *mast* grows from the centre of the rosette, and may attain a height of 20 feet, and at the base it sometimes measures a foot in circumference. At a distance a flower column looks like a telegraph pole, and the upper end bears a huge pyramidal inflorescence not unlike a candelabrum, for it consists of branches carrying discs composed of hundreds of yellow flowers. These are in due course replaced by seeds, and as soon as the seeds ripen this enormous flower-stalk and the leaves die. Then shoots arise from the roots. Although the flower column or *mast* appears as bare as a telegraph pole, on close inspection rudimentary paper-like leaves will be found on it.

The maquey is trained to yield pulque in the following way. After planting it requires no attention until the flowering period, which happens between the seventh and tenth years; at this time the middle of the plant consists of a number of leaves closely compressed like the heart of a cabbage, but forming a sharply-pointed cone. An examination of the apex of this cone affords indications to the husbandman when a maquey is about to flower. The cone is then cut out, and the soft tissue at its base is scooped out of the short fleshy stem immediately above the root, leaving a cavity about six inches in diameter and four in depth. The soft tissue is scraped away by a scoop-shaped tool known as the raspador (Fig. 1, B). The removal of the central apical bud is called castration of the plant. The immature leaves from the cone are bright yellow, and after the cutting the husbandman sticks some of them on the spikes of the surrounding leaves to let the collector (tlachiquero) know that the plant has been cut. At the same time the edges of some of the leaves are stripped off to save him from being scratched (in spite of leathern clothes) by the lateral barbs when collecting the sap which oozes into the artificial cup scraped in the stem. A piece of leaf is usually placed over the hollow to keep out rain water, and on some farms the leaves are interwoven in such a way as to form a roof over it.

As soon as the plant is treated in this way the juice accumulates in the cavity, and twice daily a man or boy visits it and sucks up the fluid known as "aguamiel" (honey water) by means of the acocote. This instrument is a flask-shaped gourd from which the pulp has been extracted and the rind dried; at the narrow end a piece of an ox-horn

[1] A lecture delivered at the Middlesex Hospital.

is adjusted to serve as a spout, and the broad base of the gourd is perforated (Fig. 1, A).

This crude instrument is used in the following manner. The horn spout is introduced into the cup-like hole in the maquey and the man sucks the air from the gourd by applying his lips to the hole in the base; when the air is in this way withdrawn from the gourd the fluid rushes into it (Fig. 2). The aguamiel is then emptied from the acocote into a pigskin, which the man carries on his back or which is borne on the back of a donkey (Fig. 3).

After removing the fluid from the plant the man gently scrapes the cavity with his raspador. The scraping is a very necessary act in the management of the maquey; it comes about that each daily scraping enlarges the cavity in all directions, and in a large plant it may eventually have a capacity of 3 or 4 litres or more. If the scraping be carelessly or injudiciously performed the maquey quickly dies. A good plant well managed will yield 10 litres or more sap daily and furnish this amount for 20 weeks. As the plant fades, green shoots sprout from its roots in all directions and are in due course transplanted.

FIG. 1.

The implements of the tlachiquero for collecting the aguamiel from the maquey. A, The acocote made out of a gourd; its spout is a piece of ox-horn. B, The raspador or scraper. C, A piece of steel for sharpening the raspador.

The aguamiel as it exudes from the plant is a sweet, pale yellow fluid with a pleasant taste, and very attractive to insects. As soon as the tlachiquero has filled his pigskin he takes it to the hacienda, and the fluid—after being strained to free it from insects and chips of the agave—is poured into shallow receptacles made of ox-hide stretched on frames. In these it is allowed to ferment; this process is hastened by the addition of "madre" or mother pulque. The preparation of the madre requires care and experience, for the quality of the pulque depends in a large measure upon it. Fermentation proceeds so rapidly that it is complete within 24 hours; thus pulque cannot be transported in a condition fit for drinking beyond a journey of a few hours. When ready for consumption the pulque is placed in barrels and regularly conveyed in trains to Mexico city, in the same fashion that milk is brought to London daily in special trains.

The agave is useful to Mexicans in other ways than supplying pulque. An alcoholic extract known as mescal is distilled from its leaves and roots. Mescal is colourless, bitter, and possesses a peculiar aroma. It contains 20 per cent. of alcohol. Fibre from the leaves of the agave is used for rope-making and paper. The Aztecs used paper made from the finer kinds of fibre for writing and painting. The famous picture-writing was executed on paper of this kind. Agave leaves are used for thatching huts, and the stems and roots serve for firewood.

FIG. 2.

The tlachiquero collecting aguamiel from the maquey by means of the acocote. A pig-skin lies on the ground.

Pulque is a milky fluid with a specific gravity slightly less than water. Its milkiness is due to the presence of suspended particles and yeast cells; when these are precipitated by the centrifuge pulque becomes clear and transparent. According to O'Gorman and Allen, the species of yeast found in it are Saccharomyces cerevisiæ agavicia, S. ellipsoideus, Bacterium aceti, Bacillus viscosus, and B. acidi lactici can be obtained on cultivation. Pulque has a peculiar sour and offensive odour, resembling that of rotten eggs or cheese, or a combination of rotten eggs and sour milk.

The composition of pulque obtained by O'Gorman and Allen is the following (in parts per 1000): Solids, 17·90; alcohol, 44·50; volatile acid, 0·90; carbonic acid, 0·30; water, 936 40. The solid constituents consist of gum,

albuminoids, phosphoric acid, potash, phosphate of magnesia, and calcium.

The proportion of alcohol in pulque is a little less than that found in alcoholic drinks which come under the title of beer. For example, London porter contains 6 per cent. of alcohol; Munich lager beer, 5 per cent.; and pulque, 4·45 per cent.

The shops (pulquerias) where pulque is sold resemble in many points the old-fashioned beer-shops in England. They are easily detected by their odour, decorations, and groups of loungers. Pulque-shops, like beer-houses, have signs, some of which are picturesque, but the majority are gaudy. The walls may be painted with curious symbolic pictures replacing our old-fashioned sign-posts and in others the hangings consist of brightly coloured paper.

In relation to the pulque shops Flandrau, in his interesting book "Viva Mexico," refers to the constant amusement foreigners derive from reading their signs. "A foul little corner calcimined sky-blue with a life-sized lady reposing in a green bower painted on its finger-marked exterior is entitled El Nido de Amor, or a pink hole in the wall that can be seen for a block and smelled for two, is named Las Flores de Abril." Other and more appropriate names are El Infiernito (the little hell), La Seductoria, and Las Aves de la Noche (The Night Birds).

The names and signs of pulque shops appear to have an irresistible attraction for almost all who visit Mexico city. Many of the signs in use are those adopted by drinking-shops in London or any English town; among others, we find "The Three Graces," "The Gladiator," "Adam and Eve," "The White Rose," "The Toad in the Hole." One sign, "La Hermosa Xochitl" (Beautiful Flower), has an interest in relation to the discovery of pulque. It is believed that pulque was discovered in the latter half of the eleventh century by Papantzin, a kinsman of the Toltec king, Tepancaltzin. Papantzin sent his daughter Xochitl with a sample to the king, who appears to have been pleased with the fluid and charmed with the messenger, for he retained Xochitl and placed her in his harem. From their union a child was born and named Meconetzin, or Child of the Maquey. This legend is illustrated by a picture in the National Picture Gallery of Mexico, in which Xochitl is represented presenting a vessel of pulque to the king. (Fig. 4.)

FIG. 3.

Pig-skins on a donkey's back; they are filled with aguamiel.

FIG. 4.

Xochitl presenting pulque to the King.

It is a fact that the Aztecs were addicted to pulque-drinking at the time of the Spanish Conquest—1519. The Aztecs acquired it from the Toltecs. It is said that pulque-drinking led to the downfall of the Toltecs, for it caused them to neglect agriculture, in which they were proficient, and they became deficient in the art of war. Their decadence led to the loss of their possessions, for they were driven away by the first war-like tribe that came against them.

Pulque is described as the national drink of Mexico, and the Mexicans drink it as freely as English labourers, husbandmen, and artisans drink beer. It is not uncommon for a man to swallow five or six litres daily, and it is cheaper than beer, for it can be bought for 1*d.* a litre.

Pulque-drinking is chiefly confined to the working classes; men, women, children, and babies drink it freely, and with the same sociological and physiological effects which are the sequence of beer-drinking in England. Most of the acts of violence committed in Mexico city and Puebla—two cities in the centre of the pulque industry—are attributed to pulque drunkenness. The fact that pulque cannot be exported limits its sphere of influence; in order to supply the drinkers special trains convey the fluid to the cities, and when a fresh supply is delivered at the shops the fact is announced for the benefit of the customers, as in a German beer garden the bier-kellner shouts *wird gezapft* to inform the guests that he is about to tap a fresh barrel. Many unsuccessful attempts were made to abolish the traffic in pulque by the Spanish viceroys and archbishops during the seventeenth century. In 1692 an edict for this purpose led to a formidable riot; the archbishop's palace was stoned and an infuriated mob set fire to several public buildings. The Mexican peons are so devoted to pulque that they regard it as a "liquor divine, which angels in Heaven prefer to wine." Pulque shops are under the control of the law and are closed at 6 o'clock. In times of political excitement these shops are closed for the safety of the city. Taken in moderate quantity the drink produces excitement; the drinkers then become quarrelsome and dangerous. Intoxication produced by a large quantity is followed by heavy sleep. The effects of excessive pulque-drinking on the system

have been carefully studied, and they appear to be such as are seen in the habitual drunkard in Europe. Aguamiel has been used as a remedy for inflammatory conditions of the urinary organ by Mexican physicians for centuries. To-day American physicians send patients with Bright's disease to take an aguamiel cure in Mexico. The aguamiel obtained from the maqueys plain of Apam has the greatest reputation.

The pulque industry to-day is mainly in the hands of a powerful trust company, and though the abolition of pulque-drinking is impossible it can be in a measure controlled. This company has initiated scientific investigations to ensure cleanliness in its manufacture and with the object of depriving the fluid of some of its deleterious products. In this way pulque will be rendered more wholesome and its production placed on a scientific basis like beer-brewing in England.

Brook-street, W.

MEDICINE AND THE LAW.

Culvert Gases: Carbon Monoxide or Sewer Gas?

Mr. Justice Lush recently heard a case in which there were raised questions of very great interest both to scientists and medical jurists. The Rochdale corporation sued the trustees of the Rochdale Markets Company in the following circumstances. On the morning of June 6th, 1910, three men, named Harris, Clegg, and Collins, were engaged in the construction of a culvert. After they had been in the culvert for about an hour Harris came up and said, "It was rather strong down there." The other men also came up and were told not to go down again. Harris died at 6 o'clock, after being taken home in a cab. Clegg also died, and Collins, after a severe illness, recovered. It was alleged that the men had been what is called "gassed." The plaintiffs paid compensation, which they now sought to recover, on the ground that the men had been poisoned by carbonic oxide and other noxious fumes which had been conveyed into the culvert by a pipe connected with a gas engine used by the defendants. Dr. A. G. Anderson, medical officer of Rochdale, was of opinion as a result of a post-mortem examination that the death of Harris was caused by the inhalation of a dangerous quantity of carbon monoxide, though that was not the full explanation, because there was evidence that he had inhaled some other noxious gas. The condition of the lungs denoted the presence of other gases. He failed to discover any trace of sulphuretted hydrogen. Dr. H. S. Heap found a large amount of carbon dioxide and also some carbon monoxide in the culvert. He knew of nothing except carbon monoxide which could produce the cherry red appearance of the blood, which he found was saturated with from 12 to 15 per cent. of carbon monoxide. Professor S. Delépine, after experimenting with gas engines of a similar make to that used by the defendants, said that the symptoms suggested poisoning by irritant gases as well as by carbon monoxide. Sulphuretted hydrogen had nothing to do with causing the deaths. In his opinion death was due to the combined effects of the carbon monoxide and such gases as might be emitted by a gas engine. The defence submitted that no case of negligence had been made out, and it was further submitted that the plaintiffs had been guilty of contributory negligence, as they knew that the defendants turned the gas from the exhaust pipe into the culvert and sewer, and yet allowed their workmen to go into that which they now charged against the defendants as a death chamber. The blood drawn from the man who recovered, according to Dr. W. Ross, showed absolutely no indication of carbon-monoxide poisoning. Dr. J. S. Haldane, of Oxford, said he thought the cause of death was poisoning by sulphuretted hydrogen, and that carbon monoxide had nothing to do with it. In his experience of carbon-monoxide poisoning it was unknown that persons who had died from that cause had been able to walk about after being "gassed"; yet in this case the men climbed out of the manhole without assistance, went to breakfast, and were considering about doing another piece of work. Dr. F. Craven Moore corroborated the view of Dr. Haldane. The judge said he had to reconcile two almost irreconcilable themes advanced by eminent men. Judgment was reserved.

The Case of Charles Louis Lumley.

At the last sessions at the Old Bailey a man named Charles Louis Lumley was tried for the murder of a woman named Gorringe through the performance of an illegal operation upon her. Gorringe was a married woman living apart from her husband and employed as a draper's assistant. She had been with a man with whom she had cohabited to consult Lumley, who was formerly upon the Medical Register, but whose name had been removed in 1900 on a charge of a different character from that upon which he has now been convicted. Mrs. Gorringe became very ill and died, the medical evidence being directed to proving this to be the result of an attempt to procure miscarriage, the only question being whether what had taken place had been the act of the woman herself or of someone else, before she visited Lumley. The prisoner protested his innocence throughout, saying that the woman had been very ill when she came to him, and that he had done the best he could for her. The jury convicted him of manslaughter, and the police gave evidence to the effect that although he had never been before charged he had long been an object of suspicion, and that patients whom he had attended had died on previous occasions when there had been reason to believe that they had been the victims of illegal operations. Mr. Justice Avory, in passing a sentence of seven years' penal servitude, told the prisoner that it was only by a lenient interpretation of the facts that he had not been convicted of murder, and that the evidence showed him to have been perfectly ready to adopt the course which he undoubtedly did adopt with regard to Gorringe.

Revolvers Again.

In THE LANCET of Oct. 21st, 1911, p. 1144, reference was made to the trial then pending of a gang of ruffians, many of them habitually armed with revolvers, whose violence had culminated in acts which had led to their arrest. They were tried at the Old Bailey before Mr. Justice Avory with the result that four were convicted of inflicting grievous bodily harm upon a man with whom they had quarrelled, and whom they attacked chiefly with broken glass as a weapon, one of shooting at a person unknown, one who pleaded guilty of an assault, and two, also pleading guilty, of being concerned in a riot. All received long sentences of imprisonment with hard labour, to which penal servitude for three years was added in two instances, and the man convicted of shooting received a sentence of three years' penal servitude. In one of their fights among themselves a lad not connected with their quarrel had been severely injured. At the conclusion of the trial Mr. Justice Avory, whose experience of the revelations of criminal trials is second to none, made the following comment: "I wish to say before I leave this case that the condition of things disclosed by this evidence, that a portion of London should be infested by a number of criminal ruffians armed with loaded revolvers, is a state of things which ought not to be further tolerated, and if the existing law is not strong enough to put a stop to it, some remedial legislation is necessary." THE LANCET has protested for many years against the unrestricted sale, and unhindered carrying, of pistols, which are now far more dangerous weapons and much easier to obtain as such for a small price than they were 10 or 20 years ago. It should be made a serious offence to carry such a weapon on the person in any public place or to possess one without a licence. This should not be obtainable without close investigation of the applicant's character and of the uses to which he is likely to put it, and a heavy duty, to be remitted where remission is desirable, should further restrict the sale of such weapons. In support of these views we may point out that another prosecution for carrying a loaded revolver without a licence has taken place. We hope that Mr. Denman's weighty plea for effective legislation against this evil, then made, will not fall on deaf ears.

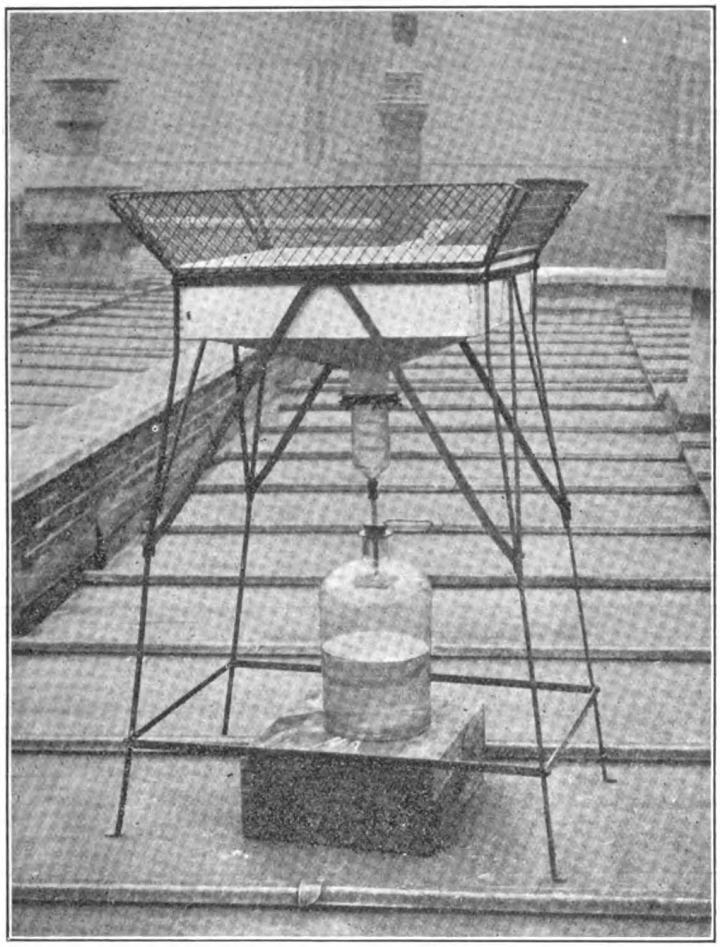
Dr. R. Murray Leslie, senior physician to the Prince of Wales General Hospital, Tottenham, has been specially presented by the French Consul-General to M. Cambon, the French Ambassador, who personally conferred upon Dr. Leslie the decoration of Officier de l'Instruction Publique et des Beaux-Arts, recently awarded to him by the French Government.

THE SOOTFALL OF LONDON:

ITS AMOUNT, QUALITY, AND EFFECTS.

AN APPEAL FOR SOOT-GAUGE OBSERVATIONS.

THE positive readings of the soot-gauge disclose the defects of the coal fire. The black carbonaceous deposit is an evidence of faulty combustion and wastage of fuel; it means also the emission of products injurious to health, corroding to building fabrics, and often enough opaque in the aggregate to the sun's radiations, so reducing day to the darkness of night. The revelations of the soot-gauge are therefore of the utmost significance in regard to public health, comfort, and convenience. In great towns and cities an importance might reasonably be attached to the regular recording of sootfall equal to that of rainfall, but the soot-gauge so far has not been included amongst the instruments at the stations where meteorological observations are made. The present investigation shows that such observations would be valuable, and their record would most probably lend the greatest assistance to the pleadings for a clean, unsullied air. At present the readings of the soot-gauge merely prove the existence of a serious evil amongst us, and also that there is every reason why this evil should receive regular registration and treatment. It is to be hoped that the time will come, however, when the soot-gauge will be an entirely superfluous instrument as an auxiliary in weather observing stations, an obsolete apparatus the use of which would be ludicrous in improved conditions. The following account of some observations made in this direction shows, however, that that fortunate time is not now.



The soot-gauge on a roof in Westminster.

A JUSTIFICATION FOR THE APPEAL

In the early part of 1910 Dr. H. A. Des Vœux, honorary treasurer of the Coal Smoke Abatement Society, and Dr. J. S. Owens, A.M.I.C.E., consulted our Laboratory Commissioners in regard to making some experiments in the direction of estimating the matters deposited from London atmosphere at regular intervals over a period of a year at various stations in the metropolitan area. A scheme was eventually formulated and the first serious experimental observations were made on June 13th, 1910. Three stations in London were chosen: A, situated in Buckingham Gate, S.W.; B, situated in Horseferry-road, S.W.; and C, in Old-street, City. To these a station, D, on the borders of the metropolitan area at Sutton, Surrey, was added, which it was thought would furnish results enabling an interesting comparison to be made with the results obtained at the foregoing stations. The apparatus employed to catch the deposit is shown in the accompanying illustration which is reproduced from a photograph. It represents a kind of hopper or wide funnel measuring at the top 2 feet square, terminating in a narrow tube below, connected with a capacious bottle. At first the plan consisted in using glass wool filters to keep back the deposit, but the rain percolating these filters was found to reduce their original weight considerably, and so it was decided to catch both rain and deposit without the intervention of a filter in the same apparatus and separate them subsequently by filtration in the laboratory. It is obvious that in the event of rain occurring the deposit collected would yield up its soluble parts to the rain water, and so whatever its original weight may have been it would fail to be recorded if a filter were used. The bottle containing the rain and the collected deposit were sent as far as could be conveniently arranged at intervals of a month to THE LANCET Laboratory for examination. The interval July 14th to July 28th was a shortened one owing to a heavy fall of rain. The observations lasted over a period of a year, commencing on June 13th, 1910, and ending June 13th, 1911. One or two irregular periods could not be avoided, but the totals represent an accurate period of one year's fall. In one case, however, an observation was prevented from being made through an accident to the bottle. This was at Sutton, Surrey, during the period November – December, 1910, so that the total deposit recorded for that station is for 11 months instead of 12, as applies to all other cases.

The table speaks for itself, and the results will repay a detailed study. The observations during each month are summarised for the year in the last four lines of the table, and a calculation based on the local experiments made appears in the last column but one, giving some idea as to the enormous deposit that probably occurs over the entire administrative area (117 square miles) of the County of London during a month and the total for a whole year respectively.

A SUMMARY OF THE RESULTS.

Summarised, the results, as indicated in the table, are as follows:—

Total deposit.—This is greatest in the City area, amounting to about 650 tons per square mile per year. In the S.W. district the average amount was 460 tons per square mile per year, while on the same calculation the fall immediately outside the metropolitan area was 195 tons per square mile per year. The maximum fall in the City district was in the period October–November when there were local fogs; the maximum fall in the S.W. district was in July–September, but the deposit contained autumn leaves. Without leaves

LONDON'S COAL SMOKE DEPOSIT.

Station.	Period.	Rain volume (area 4 square feet).	Total deposit (area 4 square feet).	Insoluble deposit (soot, &c.).	Total solids dissolved in the rain.	Soluble volatile solids.	Soluble fixed solids.	Sulphate (SO_4)	Ammonia (NH_3).	Chlorine in chlorides (Cl).	Lime (CaO).	Total deposit per square mile.	Total deposit on administrative County of London and City, 117 square miles.	Remarks.
		Litres.	Grammes.	Grammes.	Grammes.	Grammes.	Grammes.	Grammes.	Grammes.	Grammes.	Grammes.	Tons.	Tons.	
A. Buckingham Gate, S.W....	June 13th to July 14th, 1910.	24·5	5·076	2·920	2·156	0·490	1·666	0·271	0·612	0·245	—	35	4,095	
B. Horseferry-road, S.W. ...		25·7	4·347	2·600	1·747	1·028	0·719	0·326	0·257	0·205	—	30	3,511	
C. Old-street, E.C.		22·8	4·750	3·200	1·550	0·460	1·090	0·271	0·456	0·228	—	33	3,861	
D. Sutton, Surrey		29·0	2·872	0·900	1·972	1·160	0·812	0·058	Trace.	0 145	—	19	—	
A. Buckingham Gate, S.W....	July 14th to July 28th.	7·4	3·310	2·430	0·880	0·288	0·592	0·451	0 222	0·081	—	23	2,691	
B. Horseferry-road, S.W. ...		15·4	2·210	0·670	1·540	0·616	0·924	0·244	0·154	0·077	—	15	1,755	
C. Old-street, E.C.		10·8	4·596	3·300	1·296	0·648	0·648	0·363	0·216	0·086	—	31	3,627	
D. Sutton, Surrey		8·0	1·244	1·220	1·024	0·576	0·448	0·048	Trace.	0·041	—	8	—	
A. Buckingham Gate, S.W....	July 28th to Sept. 6th.	19·4	6·667	4·650	2·017	0·776	1·241	0·349	0·485	0·213	—	46	5,382	Deposit contained leaves.
B. Horseferry-road, S.W. ...		20·0	8·010	2·090	5·920	4·720	1·200	0·354	0·800	0·160	—	56	6,552	
C. Old-street, E.C.		18·6	9·074	6·090	2 984	1·865	1·119	0·652	0·186	0·179	—	63	7,371	
D. Sutton, Surrey		29·0	4·095	0·615	3·480	2·320	1·160	Trace.	Trace.	0·121	—	28	—	
A. Buckingham Gate, S.W....	Sept. 6th to Oct. 1st.	4·9	1·555	0·615	0·940	0·480	0·460	0·175	0·062	0·110	—	10	1,170	
B. Horseferry-road, S.W. ...		4·3	1·694	0·920	0·774	0·430	0·344	0·184	0·107	0·086	—	11	1,287	
C. Old-street, E.C.		5·4	2·550	1·340	1·210	0·396	0·814	0·079	0·055	0·121	—	17	1,989	
D. Sutton, Surrey		9·2	1·537	0·430	1·107	0·369	0·738	Trace.	Trace.	0·055	—	10	—	
A. Buckingham Gate, S.W....	Oct. 1st. to Nov. 1st.	20·3	8·210	4·950	3·260	1·630	1·630	0·780	0·203	0·849	—	57	6,669	Local fogs during the month.
B. Horseferry-road, S.W. ...		20 6	6·380	3·500	2·880	0·410	2·470	0·762	0·618	0·424	—	44	5,145	
C. Old-street, E.C.		16·3	14·960	9·090	5·860	1·630	4·230	2·167	0·326	0·433	—	104	12,168	
D. Sutton, Surrey		27·4	3·758	0·470	3·288	1·754	1·534	Traces.	*Nil.*	0·389	—	25	—	
A. Buckingham Gate, S.W....	Nov. 1st to Dec. 3rd.	33·7	5·920	3·230	2·690	1·350	1·340	0·650	0 337	0·754	—	41	4,797	Fog during the month.
B. Horseferry-road, S.W. ...		33·3	5·520	2·190	3·300	2 000	1·330	1·028	0·333	0·705	—	38	4,446	
C. Old-street, E.C.		32·4	5·370	2·780	2·590	1·300	1·290	1·458	0·810	0·518	—	37	4,329	
D.* Sutton, Surrey...		—	—	—	—	—	—	—	—	—	—	—	—	
A. Buckingham Gate, S.W....	Dec. 3rd to Jan. 12th, 1911.	32·0	7·620	3·140	4·480	2·304	2·176	0·864	0·320	0·416	—	53	6,201	Fog during the period.
B. Horseferry-road, S.W. ...		24·5	5·770	2·640	3·130	1·760	1·370	0·806	0·367	0·686	—	40	4,680	
C. Old-street, E.C.		30·5	7·340	3 200	4·140	1·220	2·920	1·250	1·220	0 730	—	51	5,967	
D. Sutton, Surrey		37·0	4·150	0·600	3·550	1·480	2·070	0·240	Trace.	0 550	—	28	—	
A. Buckingham Gate, S.W....	Jan. 12th to Feb. 12th.	3·0	7·690	6·510	1·180	0·390	0·790	0·435	0·300	0·366	—	54	6,318	Local fogs during the month.
B. Horseferry-road, S.W. ...		2·9	5·534	4·560	0·974	0·348	0·626	0·313	0 261	0·301	—	38	4,446	
C. Old-street, E.C.		3 0	10·868	9·260	1 608	0·580	1·128	0·906	0·600	0·312	—	75	8,775	
D. Sutton, Surrey		1·2	0 543	0·310	0·233	0·100	0·133	0·042	0·031	0·068	—	3	—	
A. Buckingham Gate, S.W....	Feb. 12th to March 13th.	20·3	7·557	4·950	2·607	1·711	0·896	0·611	0·509	1·140	—	52	6,084	Snow fell later part of the month.
B. Horseferry-road, S.W. ...		19·3	6·798	4·560	2·238	1·080	1·158	0·521	0 386	0·521	—	47	5,499	
C. Old-street, E.C.		10·0	9·630	6·770	2·869	1·380	1·480	0·754	1·000	0·330	—	67	7,839	
D. Sutton, Surrey		19·0	2·320	0·500	1·820	1·060	0·760	*Nil.*	*Nil.*	0·228	—	16	—	
A. Buckingham Gate, S.W....	March 13th to April 24th.	15·4	8·340	5·820	2·520	1·350	1·170	0·736	1·386	0·816	0·271	58	6,786	Snow fell later part of the period.
B. Horseferry-road, S.W. ...		8·0	4·500	2·860	1·640	0·708	0·932	0·595	0·723	0·445	0·147	31	3,627	
C. Old-street, E.C.		14·1	17·280	8·390	2·890	1·140	1·750	0·957	1·843	0·496	0·212	78	9,126	
D. Sutton, Surrey		18·7	1·633	0·810	0·823	0·524	0·299	0·120	*Nil.*	0·265	*Nil.*	10	—	
A. Buckingham Gate, S.W....	April 24th to May 24th.	14·4	7·220	5·320	1·900	1·100	0·800	0·475	0·432	0·518	0·417	50	5.850	
B. Horseferry-road, S W. ...		13·3	5·955	4·200	1·755	1·011	0·744	0·509	0·798	0·358	0·266	41	4,797	
C. Old-street, E.C.		18·5	6·494	4·200	2 294	1·110	1·184	0·432	0·740	0·370	0·222	44	5,148	
D. Sutton, Surrey		16 4	3·164	1·180	1·984	1·088	0·896	0·193	0·160	0·208	*Nil.*	21	—	
A. Buckingham Gate, S.W. ...	May 24th to June 13th.	5·8	2·820	1·800	1·020	0·470	0·550	0 220	0·145	0·191	0·185	20	2.340	
B. Horseferry-road, S.W. ...		4·7	3·621	2·700	0·921	0·414	0·507	0·300	0·329	0·126	0·192	25	2,925	
C. Old-street, E.C.		9·6	5·911	3·300	2·611	0·922	1·689	0·754	0·090	0·230	0·825	41	4,797	
D. Sutton, Surrey		15·6	2·578	1·330	1·248	0·375	0·873	0·191	0·156	0·093	0·296	17	—	
Total for the year.														
A. Buckingham Gate, S.W. ...	1 year.	201·1	71·985	46·335	25·650	12·339	13·311	6·017	5·013	5·699	0·873	500	58,500	
B. Horseferry-road, S.W. ...		192·0	60·339	33·490	26·849	14·525	12·324	5·942	5·133	4·094	0·605	420	49,140	
C. Old-street, E.C.		192·0	92·813	60·920	31·893	12·651	19·242	10·043	7·542	4 033	1·259	650	76,050	
D.* Sutton, Surrey		210·5	27·894	8·365	19 529	10·806	8·723	0·892	0·347	2·163	0·296	195	—	

* This sample was lost owing to the breaking of the bottle. The results under "total for the year" represent therefore the deposit of 11 months in the case of the sample from Sutton.

the maximum deposit in the S.W. district was in October–November when local fogs occurred. The maximum deposit in the area just outside the metropolis was in the autumn months and December–January period.

The minimum fall of total deposit in the City area was in the period between Sept. 6th and Oct. 1st; in the S.W. district the minimum fall was in September; in the area just outside the metropolis the minimum fall was in July and between January and February, in spite of fogs during the last period.

Insoluble deposit (soot, &c.).—The greatest amount of insoluble deposit (soot, &c.) fell in the City between Oct. 1st and Nov. 1st and Jan. 12th and Feb. 12th when fogs were prevalent; the smallest fall was between September and October. In the S.W. district the insoluble deposit, on the whole, was less than that which fell in the City district, the maximum fall being in the period January–February, and the minimum in the period September–October. In the suburban district (Sutton) the fall of insoluble deposit (soot, &c.) was about a sixth of that falling in the metropolitan area, the maximum fall being, curiously enough, in the summer months, May, June, July, while the minimum fall occurred in the period January to February.

Soluble matters contained in the rain.—The soluble matters comprise ammonium and calcium salts, sulphates and chlorides, and some organic constituents. On the year's showing the City area leads again in regard to the amount of dissolved solids, the maximum amount occurring in the period October–November and December–January, the minimum appearing in September.

In the S.W. district the maximum soluble matters appeared in December and the minimum in the summer months. In the suburban district (Sutton) the soluble matters in the rain amounted in the year to about three-fourths the quantity found in the metropolitan area, the maximum fall being in July and the minimum in January, which is exactly the reverse of the metropolitan occurrences.

Soluble volatile solids.—These include ammonium salts and organic matters. The E.C. and S.W. districts were about level in regard to the amounts of soluble volatile solids contained in the falling rain. The maximum in the City district occurred in August and October, the minimum in June and September, while in the S.W. district the maximum occurred also in August (heavy rains), and the minimum in June and September (a dry period). In the suburban district the total amount of soluble volatile solids was much the same as that falling in the metropolitan area, the maximum appearing in August and the minimum in January and June.

Soluble fixed solids.—These include common salt and sulphate of lime. The fall in the City area was greatest, and in the suburban area least, the amount in the S.W. district lying between the two. The maximum fall in the City area occurred in October and the minimum in the preceding month, September. In the S.W. district the maximum occurred in October and December, and the minimum in September. In the suburban district the maximum also occurred in October, but the minimum appeared in March–April.

Sulphate.—The figures in this column are of particular interest, inasmuch as most, if not all, of the sulphur found in the rain may be traced to the combustion of coal and gas. The City area receives a much larger amount of sulphates than the S.W. district—nearly double as much; while in the suburban area there were occasions when sulphates were present only in traces or were not present at all. The maximum fall in the case of the City area occurred in October, November, and December, when there was fog, while the minimum amount was in September and generally in the summer months. In the S.W. district the maximum occurred in the same autumn and winter period, and the minimum again in the summer months. In the suburban district the maximum fall of sulphate occurred in December, while there were only traces present when elsewhere the fall was considerable.

Ammonia.—This is an interesting column, because ammonia is a product of the faulty combustion of coal, while coal gas, which is free from ammonia, yields none on combustion, even when this has been imperfect. The City area again receives the largest amount of ammonia in the rainfall; the S.W. district comes next with about three-fourths the quantity, while in the suburban area over the year the amount was about 1-20th of that which fell in the metropolis. The maximum fall in the city district occurred in March–April, when there were snow showers, but the figure was also high in the foggy period, November–December. The minimum occurred in September. In the S.W. district the results were much the same, while in the suburban district on eight occasions the amount of ammonia was inappreciable, even when there was snow. The purifying effect of snow upon the air has been practically demonstrated by analyses made of London's snow fall in THE LANCET Laboratory on several occasions (*vide* THE LANCET, Jan. 5th, 1907, and Jan. 2nd and March 6th, 1909).

It is interesting to note that as a rule the rain water falling in the metropolis is scarcely ever acid, in spite of its load of impurities. This point is of some importance since it is generally reported in regard to the rainfall of provincial cities such as Manchester, Leeds, and Glasgow that the water is invariably acid. London has no foundries, chemical works, or large power installations comparable with these places, and the inference is that the domestic coal fire keeps the rainfall of London neutral, or if anything slightly alkaline, with the ammoniacal tarry compounds of the smoke. In large manufacturing towns the blast furnaces of industry, in which the fuel is more or less completely burnt, swamp the alkalinity of the domestic fire with their acid emanations. Turning again to domestic heating, if gas were entirely substituted for coal in London the rain probably would be no longer neutral or slightly alkaline, but acid, because ammonia would then no longer be evolved from the domestic fire. This is an advantage in considering the effects of the soot-fall, a point on which there will be much more to say. It is not improbable that the presence of ammonium salts encourages rather than discourages the disintegration of building fabrics, since insoluble lime compounds—e.g., calcium carbonate—readily yield ammonium carbonate and soluble calcium sulphate, and ammonium carbonate attacks silica. Free sulphuric acid would also attack lime compounds, but would not affect the silica appreciably.

Chlorine in chlorides.—The presence of chlorides in the rainfall in London is a mystery. Both coal and gas are, at all events, free from chlorides. The amount in the London atmosphere is greatest during foggy or snowy weather, and the quantity washed out by the snow or rain or deposited moisture is much the same at the different stations. In the suburban districts the quantity through the year was about half that found at the metropolitan stations. Proximity to the sea, of course, accounts for an increased amount of chloride in seaside air, but in these experiments the amount was greater in the City and S.W. districts than it was in the suburban district (Sutton, Surrey), which is in a seawards direction from London.

Lime.—The presence of lime may be accounted for in the dust from building fabrics and in the ash of coal. It is present as sulphate in the rainfall, and sulphate of lime is a constituent of coal ash, but it is conceivable that ordinary carbonate of lime is the original constituent in the rain- and soot-fall, the carbonate being converted into soluble sulphate by interaction with the ammonia and sulphur in coal smoke. By an oversight the search for lime salt was only made on three occasions. It occurred in the greatest amount in the deposit taken from the City station, but it is interesting to note that there was more lime in the deposit at Sutton, Surrey, than at the S.W. stations in the metropolis.

THE QUANTITY AND QUALITY OF LONDON SOOTFALL SUMMED UP.

The last column of figures in the table deals with some stupendous facts. If we take the City station as the basis of our calculation as to the total amount of deposit falling annually upon the Administrative County of London, including the City, which is 117 square miles, this deposit amounts to no less than 76,050 tons, in which are present over 6000 tons of ammonia (NH_3), 8000 tons of sulphate (SO_4), 3000 tons of chlorine in chlorides, to say nothing of the carbon and tar.

If we take the S.W. metropolitan station as a basis the total deposit per year over the same administrative area would average 53,820 tons, in which are present over 4000 tons of ammonia (NH_3), about 5000 tons of sulphate (SO_4), and 4000 tons of chlorine in chlorides. The London rainfall in foggy seasons is also distinctly destructive to metal surfaces,

as decided traces of tin and lead were found in the specimens examined.

According to other figures in the table which refer to the suburban area the man who lives there would appear to enjoy something approaching an immunity from this appalling downpour of chemical substances.

Simultaneously with the inquiry respecting the soot-fall an investigation has been in progress to determine the nature of the deterioration of building stone, and to ascertain, quantitatively, the influence of the soot-fall in this direction. A number of difficulties have presented themselves at various stages of the inquiry, and although some valuable information has been obtained it is not considered sufficiently conclusive to justify any safe general inferences being made for the present.

VITAL STATISTICS.

HEALTH OF ENGLISH TOWNS.

IN 77 of the largest English towns, having an estimated population of 16,157,797 persons in the middle of the year 1911, 7795 births and 4911 deaths were registered during the week ending Dec. 23rd. The annual rate of mortality in these towns, which had been 15·7, 15·2, and 16·4 in the three preceding weeks, declined to 15·9 per 1000 in the week under notice. During the first twelve weeks of the past quarter the mean annual rate of mortality in these towns averaged 14·6 per 1000, and was 0·3 per 1000 above that recorded in London during the same period. The annual death-rates in the 77 towns in the week under notice ranged from 7·6 in Devonport, 7·9 in Bournemouth, 9·7 in Willesden, and 10·6 in Ipswich, to 23·0 in Burnley, 23·1 in Stoke-on-Trent, 24·0 in Bury, and 24·4 in Stockport.

The 4911 deaths from all causes in the 77 towns in the week under notice were 172 fewer than the number in the previous week, and included 291 which were referred to the principal epidemic diseases, against 238 and 305 in the two preceding weeks. Of these 291 deaths, 70 resulted from measles, 67 from diphtheria, 55 from infantile diarrhœa, 52 from whooping-cough, 25 from scarlet fever, and 22 from enteric fever, but not one from small-pox. The mean annual death-rate from these epidemic diseases was equal to 0·9 per 1000, against 0·8 and 1·0 in the two previous weeks.

The deaths attributed to measles, which had been 66, 52, and 71 in the three previous weeks, numbered 70 in the week under notice, and caused the highest annual death-rates of 1·4 in Stockport, 1·5 in Smethwick, 1·7 in Walsall, 2·2 in Nottingham, 2·4 in Burnley, 2·5 in Oldham, and 2·6 in Norwich. The deaths referred to diphtheria, which had been 57, 60, and 64 in the three previous weeks, further rose to 67, and included 24 in London and its suburban districts, 7 in Leeds, and 3 in Plymouth. The fatal cases of infantile diarrhœa, which had been 68, 45, and 68 in the three preceding weeks, declined to 55, and of this number 20 were recorded in London and its suburban districts, 4 in Manchester, and 3 in Wigan. The deaths attributed to whooping-cough, which had steadily risen from 16 to 53 in the seven preceding weeks, numbered 52; 9 deaths occurred in London, 6 in Birmingham, and 3 each in Portsmouth, Walsall, and Leicester. The deaths referred to scarlet fever, which had been 16 and 27 in the two preceding weeks, slightly declined to 25, and included 4 in Norwich, and 2 each in London, Birmingham, Manchester, Leeds, and Newport (Mon.). The 22 fatal cases of enteric fever were equal to the average in the six preceding weeks; 3 deaths were recorded in London, 3 in Sheffield, and 2 each in Manchester, Salford, and Rotherham.

The number of scarlet fever patients under treatment in the Metropolitan Asylums and in the London Fever Hospital, which had decreased from 2213 to 2041 at the end of the five preceding weeks, had further declined to 1912 on Saturday, Dec. 23rd, 1911; 182 new cases of this disease were admitted to these institutions during the week, against 248, 241, and 224 in the three preceding weeks. These hospitals also contained on Saturday, Dec 23rd, 1311 cases of diphtheria, 227 of whooping-cough, 90 of measles, and 71 of enteric fever, but not one of small-pox. The 1363 deaths from all causes in London were 27 fewer than the number in the previous week, and included 390 which were referred to diseases of the respiratory system, against numbers steadily increasing from 170 to 391 in the seven preceding weeks.

The deaths attributed to different forms of violence in the 77 towns, which had been 201 and 195 in the two previous weeks, further declined to 185, and 431 inquest cases were registered. The causes of 47, or 1·0 per cent., of the deaths registered in the 77 towns were not certified either by a registered medical practitioner or by a coroner after inquest. All the causes of death were duly certified in Manchester, Sheffield, Leeds, Bristol, West Ham, Bradford, Hull, Newcastle-on-Tyne, and in 41 other smaller towns. The 47 uncertified causes of death included 11 in Birmingham, 4 in Stoke-on-Trent, and 2 each in London, Warrington, Blackburn, Rotherham, Gateshead, and Swansea.

HEALTH OF SCOTCH TOWNS.

In eight of the principal Scotch towns, having an estimated population of 1,710,291 persons in the middle of the year 1911, 809 births and 609 deaths were registered during the week ending Dec. 23rd. The annual rate of mortality in these towns, which had been 16·8 and 17·9 in the two preceding weeks, further rose to 18·6 per 1000 in the week under notice. During the first twelve weeks of the past quarter the mean annual death-rate in these Scotch towns averaged 16·9, and was 2·3 per 1000 above the mean rate during the same period in the large English towns. The annual death-rates in the several Scotch towns during the week under notice ranged from 13·1 and 15·4 in Perth and Paisley to 22·0 in Aberdeen and 25·6 in Greenock.

The 609 deaths from all causes were 22 in excess of the number in the previous week, and included 69 which were referred to the principal epidemic diseases, against 58 and 59 in the two preceding weeks; of these 69 deaths, 38 resulted from measles, 10 from diarrhœal diseases, 10 from whooping-cough, 7 from diphtheria, 3 from scarlet fever, and 1 from enteric fever, but not one from small-pox. The mean annual death-rate from these epidemic diseases was equal to 2·1 per 1000, and was 1·2 per 1000 above the mean rate from the same diseases in the 77 large English towns. The deaths referred to measles, which had been 31, 23, and 32 in the three preceding weeks, further rose to 38, and comprised 25 in Glasgow, 8 in Aberdeen, 3 in Edinburgh, and 2 in Greenock. The deaths attributed to diarrhœal diseases, which had steadily declined from 19 to 8 in the five preceding weeks, slightly rose to 10, and included 8 of infants under two years of age; 5 deaths were registered in Glasgow and 2 in Aberdeen. The 10 fatal cases of whooping-cough were 2 in excess of the average in the three preceding weeks, and included 5 in Glasgow and 3 in Aberdeen. The deaths referred to diphtheria numbered 7, against numbers declining from 15 to 6 in the three previous weeks, and included 3 in Leith and 2 in Dundee. The 3 fatal cases of scarlet fever were equal to the average in the three preceding weeks; the death from enteric fever occurred in Glasgow.

The deaths referred to diseases of the respiratory system, which had increased from 113 to 126 in the four preceding weeks, declined to 118, but were 1 in excess of the number recorded in the corresponding week of 1910. Of the 609 deaths from all causes in the Scotch towns during the week under notice, 157, or 26 per cent., were recorded in public institutions, and 24 were attributed to different forms of violence. The causes of 15, or 2·5 per cent., of the deaths in the eight towns were not specified or not certified; in the 77 large English towns the proportion of uncertified causes did not exceed 1·0 per cent.

HEALTH OF IRISH TOWNS.

In the 22 town districts of Ireland, having an estimated population of 1,149,495 persons in the middle of the year 1911, 490 births and 401 deaths were registered during the week ending Dec 23rd. The annual rate of mortality in these towns, which had been 17·7 and 20·9 in the two preceding weeks, declined to 18·2 per 1000 in the week under notice. During the first 12 weeks of the past quarter the mean annual rate of mortality in these towns averaged 18·5 per 1000; in the 77 large English towns the mean annual death-rate during the same period did not exceed 14·6, while in the eight Scotch towns it was equal to 16·9 per 1000. The annual death-rates during the week under notice were equal to

19·9 in Dublin (against 15·7 in London), 18·1 in Belfast, 22·5 in Cork, 11·5 in Londonderry, 13·6 in Limerick, and 5·7 in Waterford; while in the 16 smallest of these Irish towns the death-rate did not exceed 17·2 per 1000.

The 401 deaths from all causes were 60 fewer than the number in the previous week, and included 39 which were referred to the principal epidemic diseases, against 25 and 35 in the two preceding weeks; of these 39 deaths, 16 resulted from whooping-cough, 9 from diphtheria, 6 from measles, 4 from scarlet fever, and 4 from diarrhœa, but not one from enteric fever or from small-pox. These 39 deaths from the principal epidemic diseases were equal to an annual death-rate of 1·8 per 1000; in the 77 English towns during the week under notice the mean annual death-rate from these diseases did not exceed 0·9, while in the eight Scotch towns it rose to 2·1 per 1000. The deaths attributed to whooping-cough, which had declined from 11 to 6 in the four preceding weeks, rose to 16, and included 8 in Belfast, 5 in Dublin, and 2 in Lurgan. The deaths referred to diphtheria, which had been 4 and 5 in the two previous weeks, rose to 9, of which 5 were registered in Dublin and 2 in Belfast. The 6 fatal cases of measles, of which 4 occurred in Dublin, were one less than in the previous week. The deaths referred to diarrhœal diseases, which had been 7 and 13 in the two preceding weeks, declined to 4, all of which related to infants under two years of age; 2 deaths were recorded in Dublin. Three of the 4 fatal cases of scarlet fever were registered in Dublin.

The deaths referred to diseases of the respiratory system, which had increased from 77 to 105 in the three preceding weeks, declined to 83. Of the 401 deaths from all causes in the Irish towns 145, or 36 per cent., were recorded in public institutions, and 9 were attributed to different forms of violence. The causes of 19, or 4·7 per cent., of the deaths in the 22 towns during the week were not certified either by a registered medical practitioner or by a coroner after inquest; the proportion of uncertified causes in the 77 English towns did not exceed 1·0 per cent., while in the eight Scotch towns it amounted to 2·5 per cent.

THE SERVICES.

ROYAL NAVY MEDICAL SERVICE.

THE following appointments have been notified:—Staff-Surgeons: R. S. G. T. Bond to the *Melpomene*, on recommissioning; A. K. Smith-Shand to the *President*, additional, for three months' special course at metropolitan hospitals, on the return of the *Natal* to England. Surgeon: Q. H. Richardson to the *Natal*, on return to England.

ROYAL ARMY MEDICAL CORPS.

Surgeon-General A. T. Sloggett, C.B., C.M.G., principal medical officer of the Sixth (Poona) Division, has been selected for appointment as Principal Medical Officer of His Majesty's Forces in India (vice Surgeon-General Sir F. W. Trevor, K.C.S.I., C.B.). Lieutenant-Colonel L. T. M. Nash, on return from Karachi, has been appointed to the medical charge at Hounslow, vice Lieutenant-Colonel C. A. Lane, who has been detailed for a tour of service with the Southern Army in India. Lieutenant-Colonel T. B. Winter has been selected for appointment as officer in charge of the Military Hospital at Colchester, and to command No. 9 Company of the Royal Army Medical Corps, vice Lieutenant-Colonel F. H. M. Burton, transferred to Warley. Lieutenant-Colonel N. Manders, on return from Ceylon, has been posted to the Curragh with a view of replacing Lieutenant-Colonel G. F. Gubbin, who is about to retire. Lieutenant-Colonel J. M. F. Shine, at present commanding the Military Hospital at Fyzabad, has been selected for the higher rate of pay under Article 317 of the Royal Warrant. Lieutenant-Colonel T. McCulloch, on return from Calcutta, has been appointed to hold charge of the Medical Division, Royal Victoria Hospital, Netley. Lieutenant-Colonel E. A. Burnside has embarked for a tour of service in India for duty in the Ninth (Secunderabad) Division.

Major F. E. Gunter has been appointed Specialist in Advanced Operative Surgery to the Eighth (Lucknow) Division. Major W. T. Mould, from the Military Hospital at Dover, and Major J. M. Sloan, D.S.O., adjutant of the Royal Army Medical Corps School of Instruction at Aberdeen, have embarked for a tour of service in India. Major L. F. Smith has been appointed to command the Station Hospital at Nowshera. Major H. Herrick has taken up the command of the Military Hospital at Naini Tal. Major A. A. Seeds, at present doing duty at the Military Hospital at Hounslow, has been placed under orders to embark next February for a tour of service in the Second (Rawal Pindi) Division of the Northern Army in India.

Captain R. H. MacNichol, from the military hospital at Colchester, has been selected for appointment as Specialist in Dermatology and Venereal Diseases to the Royal Herbert Hospital at Woolwich. Captain S. M. W. Meadows has taken over charge of the Military Families Hospital at Tidworth, in succession to Captain R. V. Cowey. Captain O. Ievers, on return from a tour of service at Wynberg, South Africa, has been ordered to join in Ireland for duty and will be posted to the Dublin District. Captain V. H. Symons, from Bloemfontein, has been appointed to the Belfast District. Captain J. J. O'Keefe has been appointed to hold Civil Medical Charge at Roorkee in addition to his duties at the station hospital. Captain R. E. Humphrey, from Jhansi, and Captain W. Benson, in charge of the Cantonment Hospital at Rawal Pindi, have been placed on duty with troops proceeding from Bombay on board the transport s.s. *Plassy* on Jan. 11th for Southampton. Captain R. G. H. Tate has been selected for appointment as Sanitary Officer of the Third (Lahore) Division. Captain R. H. Bridges has taken up duty at Manchester as Adjutant of the Royal Army Medical Corps School of Instruction to the East Lancashire Division in succession to Major L. Wood, whose tenure of the appointment has expired. Captain G. E. Ferguson, on return from duty in Cyprus, has been appointed to the Southern Command. Captain E. M. Pennefather has been transferred from Buttevant to Fermoy for duty at the Military Hospital. Captain B. H. V. Dunbar, from Belfast, has taken up duty at Enniskillen. Captain J. D. Richmond, from Piershill, has been appointed to Inverness. Captain C. Bramhall, from Woolwich, has taken up duty at Birmingham as Adjutant of the Royal Army Medical Corps School of Instruction to the Wessex Division, in succession to Captain F. A. Stephens, whose tenure of the appointment has expired. Captain J. A. W. Webster has been transferred from Fermoy to the Military Hospital at Cork. Lieutenant R. H. Nolan has been granted eight months' leave of absence home from India on the recommendation of a medical board.

Lieutenant H. F. Joynt, from Hounslow, has embarked for a tour of service in South Africa. Lieutenant W. P. MacArthur has joined for duty at Mauritius. Lieutenant A. S. Cane has been appointed to the Medical Charge of Troops at St. John's Wood.

INDIAN MEDICAL SERVICE.

Colonel J. Smyth has been selected for appointment as Principal Medical Officer of the Secunderabad Brigade. Colonel D. ffrench-Mullen, on the termination of his appointment as deputy to the Principal Medical Officer, His Majesty's Forces in India, has taken up duty as Principal Medical Officer of the Sirhind and Jullunder Brigades. Lieutenant-Colonel R. Bird, C.I.E., professor of surgery at the Medical College, Calcutta, and surgeon to the College Hospital, has joined the suite of His Majesty the King-Emperor during his stay in India as Extra Surgeon. Lieutenant-Colonel J. Crimmin, V.C., C.I.E., has been appointed Presidency Surgeon of the Third District, Bombay. Major F. S. C. Thompson, superintendent of the Central Jail at Alipore, has been granted one month's leave of absence. Major H. J. Walton, civil surgeon at Baharanpur, has been appointed an Ordinary Fellow of the University of Allahabad. Major E. L. Ward, superintendent of the Central Jail at Lahore, has been appointed to officiate as Civil Surgeon at Lahore during the absence on deputation of Lieutenant-Colonel W. Ronaldson Clarke. Major A. M. Fleming, civil surgeon of Raipur, has been granted leave of absence home from India for one year on the recommendation of a medical board. Major E. F. G. Tucker has been appointed to officiate as Presidency Surgeon of the Second District, Bombay, as well as Marine Surgeon and Superintendent of the Lunatic Asylum at Colaba. Major G. E. Stewart, superintendent of Mahableshwar Sanatorium, Satara District, has been appointed a Magistrate for the district under the Code of Criminal Procedure. Major R. K. Mitter has been granted three months' privilege leave of absence.

Major J. L. Majoribanks has been selected for appointment as Deputy Sanitary Commissioner of the Western Registration District, Bombay. Captain M. F. Reaney, at present employed on special duty at Pachmarhi, has been appointed Civil Surgeon to the Wardha District. Captain R. McCarrison, agency surgeon at Gilgit, has been granted one year and three months' leave of absence home from India. Captain W. M. Houston, on return from leave, has been appointed Assistant to the Civil Surgeon at Poona. Captain W. E. Brierley has been appointed Specialist in Advanced Operative Surgery to the Seventh (Meerut) Division. Captain D. Munro, Bengal Presidency, has been permitted by the Right Honourable the Secretary of State for India to extend his leave of absence home by three months. Lieutenant R. B. Lloyd, medical officer in charge of the 31st Lancers, has been granted six months' leave of absence home from India on the recommendation of a medical board. Lieutenants F. W. Hay, S. M. Hepworth, and C. A. Wood, on arrival at Bombay by the transport s.s. *Dongola*, have been posted to Bangalore Cantonment to undergo a course of instruction in Indian sanitation; Lieutenant K. G. Pandalai will be similarly posted on arrival.

THE NAVAL MEDICAL DINNER.

The Naval Medical dinner was held at the Criterion Restaurant on Dec. 19th, 1911, Surgeon-General Christopher Pearson presiding. There were present Sir James Porter (Director-General of the Medical Department of the Navy), Sir W. Watson Cheyne, Sir Dyce Duckworth, Professor W. J. R. Simpson, C.M.G. (members of the Naval Medical Consultative Board), and more than 50 medical officers on the active and retired lists. At a meeting held before the dinner it was decided to make the dinner an annual event and to form a committee to carry out the arrangements.

DEATHS IN THE SERVICES.

Surgeon Gordon Moir, R.N., suddenly, at Plymouth, on Dec. 26th last, in his thirty-sixth year, from syncope, following pleurisy and pneumonia. The deceased officer received his medical education at Guy's Hospital, London, and shortly after qualifying in 1903 was appointed house surgeon at the Hertford General Infirmary, and the year following he entered the Naval Medical Service. He served on the *Nightingale*, which was engaged on river service in China. He was surgeon to the Devonport dockyard for two years, and in October, 1911, he went to the Royal Navy College, Greenwich. He was to have joined the *Vivid* at Devonport on Jan. 1st. He was very popular in the "Three Towns."

MEDICAL MEN AND MUNICIPAL HONOURS.—Since publishing our article under this heading (*vide* THE LANCET, Vol. II., 1911, p. 1722), it has been brought to our notice that we had omitted to mention that Mr. Lee Fyson Cogan, L.R.C.P. Edin., M.R.C.S. Eng., who for 26 years acted as medical officer of health of Northampton, is now the mayor of that borough. Mr. Cogan's honour is a well-merited one because to him Northampton owes in a large measure its improved sanitary conditions. He received his medical education at Guy's Hospital and at Bristol, and after qualification in 1870 obtained a residential appointment at the Northampton General Hospital. After relinquishing this appointment he acted in partnership for five years and subsequently entered upon a practice on his own account. During his tenure of office as medical officer of the borough, in spite of considerable opposition, he inaugurated many improvements, which resulted in a great reduction of the death-rate. He did much good work in bringing about the demolition of insanitary houses and in sweeping away slum districts. Under his *régime* the voluntary notification of consumption was adopted and measures were taken to check the ravages of the disease. After resigning the medical officership Mr. Cogan was elected on the council in 1904, again in 1907, and in 1910. He takes an active part in all that concerns the well-being of the borough and holds many important public and semi-public positions. He has been medical officer for the prison since 1882, is a Fellow of the Society of Medical Officers of Health, and surgeon to the Royal Victoria Dispensary, Northampton.

Correspondence.

"Audi alteram partem."

THE MEDICAL PROFESSION AND THE NATIONAL INSURANCE ACT.

To the Editor of THE LANCET.

SIR,—The opening of a new year is a particularly convenient opportunity of reviewing our positions, of altering where necessary our plans, and of freeing ourselves from embarrassing entanglements. We shall all be glad to leave behind us the misunderstandings, the misrepresentations, and the failures of 1911. We have had our fill of criticism of the conduct of those who have been engaged for months past in framing and amending the Insurance Bill, and the time has surely come when we should turn aside from this easy and profitless task and devote ourselves to the harder task of constructive work.

The Insurance Act is now the law of the land and will become operative in a few months, and unless the medical profession is to be hopelessly belated it must at once come into line and decide how it will deal with the new social condition this Act will inaugurate. I am particularly anxious to say nothing that can be divisive or stimulating to those political passions that slumber in the breasts of all of us, and I shall not transgress if I say that we have to accept as a fact a compulsory and contributory scheme of national insurance for the wage-earning portion of our population, involving the provision of "medical benefit" for the insured. I submit that the inauguration of this scheme offers the medical profession a chance of regularising its services to the industrial classes such as may never again be presented to it, and the most urgent need just now is that we should all realise this fact and brace ourselves to the task that is presented to us. I need do no more than repeat such familiar expressions as "The Battle of the Clubs," "Club Tyranny," and "Hospital Abuse" to convince your readers that the problem of giving "medical benefit" to the wage-earning class has not up to the present been satisfactorily solved. Now is our chance of solving it. Whether we will it or not the old order is to be changed, and it will be our fault if the change is not for the better both for our patients and for ourselves.

We must not be misled into thinking—as some of your correspondents appear to believe—that the Insurance Act definitely formulates the kind of "medical benefit" that the insured are to receive. The Act is wide and vague, and until regulations have been drafted and approved definite detail will be wanting. Herein lies our opportunity. It is for us to secure that these regulations shall express the mind of those among us who are best qualified to determine how "medical benefit" can at the same time be the best attainable for the insured and consistent with the dignity and honourable remuneration of the profession.

The British Medical Association should take a chief part in evolving the needed new system, but it must not be obsessed by its "six cardinal points," or imagine that to secure those is all that is necessary. I have hoped that the Fellows of the Royal College of Physicians and the Council of the Royal College of Surgeons would also aid in the solution of the problem. Certain is it that those who are connected with the hospitals of the country will have to lend their aid. For it is clear that the "medical benefit" that has to be organised must include not only that rendered by private practitioners, but also that supplied by the cottage hospitals and by all our larger general and special hospitals.

More than once you have allowed me to express the hope that the system of "contract practice" would not be rendered universal and inevitable by the regulations under the Insurance Act. I know there is some difference of opinion as to the merits or otherwise of "contract practice," although nothing that I have heard or read on this subject has materially lessened my objection to it. But even the entire abolition of "contract practice" would not solve the whole problem of "medical benefit": that is something far wider and more complex. This "benefit" has to be rendered by every branch and order of the profession, and its organisation

and correlation demands the best thought of the whole profession.

But, Sir, I must not occupy more of your space to enlarge upon this, and I will close this letter, already too long, by indicating what, in my opinion, should be done.

I think the profession should at once free its mind from prejudice and suspicion, and, accepting merely the bare fact that the State has called upon it to render "medical benefit" to the wage-earners of the community, should form itself into a committee or committees to formulate the scheme, which, in the opinion of the profession, will give the most efficient "medical benefit," and under conditions consistent with the honour and dignity of a scientific profession. Such a scheme must include in its purview the prevention of disease as well as its mitigation and cure, it must recognise and provide for the increasingly scientific character of "medical benefit," and it must correlate all the varied agencies for affording "medical benefit," not forgetting the offices of trained nurses. When the medical experts have decided how and under what conditions the medical profession can best aid the sick workman the plan should be presented to the Insurance Commissioners and the Local Health Committees. The question for us now to answer is, Shall the scheme of "medical benefit" be formulated by these bodies and pressed on the profession or shall it be formulated by the profession and pressed upon these bodies? I urge the latter course.—I am, Sir, yours faithfully,

Jan. 2nd, 1912. ALFRED PEARCE GOULD.

To the Editor of THE LANCET.

SIR,—A second call is being made upon us. I have sent more, but also a letter expressing the hope that the British Medical Association will stiffen itself. Is it not apparent that there is really a cleavage in the profession? The upper ranks would profit by the extension of contract work and the resultant degradation of the general practitioner. I have talked to various consultants who wonder at our attitude. "Would you not like to be an officer of the Medical State service?" is the pet question. I do not believe there are enough medical men in England to work the Insurance Act. Does everyone realise that on the removal of fee visits country practitioners would be obliged to curtail their radius? What, then, would become of inter-areas which medical men could not work? Under the check of fees for visits people will walk miles in the country to save a visiting fee, and will attend at the surgery. Surgeons will have to be appointed in each rural parish, and days of attendance at stations fixed. Elderly practitioners will have to give up. There will be no possibility of cultivating private practice. The country doctor's lot will be more unenviable even than that of the rural policeman.

There is not half enough money to be earned in a workable area by a medical man in the country, and if there were enough people no one man could do the work. The public would soon find such medical attendances very inferior to what they have hitherto had. Whatever town practitioners may do, the Act is unworkable in the country. Only fair visiting fees will keep down frivolous visiting demands. In my opinion, the direct question should be asked every general practitioner, "Are you prepared to boycott the whole affair and let things remain as at present instead of taking a perilous gambler's risk, in which loss would be fatal and thousands of old practitioners would be swept away before things could be rectified?" "Slum" practices alone may benefit from the Bill; every decent practice will be seriously injured.

Another grave matter, not till now mentioned, is the arbitrary and excessive powers of Insurance Commissioners to remove a doctor's name from the panel. With the wholesale visits we should all be let in for, numerous cases of "proved neglect" would occur and the removal of the doctor's name would precede advertisement for his successor, which in a rural district would mean ruin for many a medical man. Lord Haldane asserts that the Bill would not increase illness. No, but it would vastly increase visits from the removal of the fee visit check. This little point shows how utterly superficial is the knowledge of the Government on this serious matter when they cannot see that the medical visits will be enormously increased once remove the fee check. In any case the Commissioners' powers are too great for us to submit to. When we know exactly the numbers and social position of insurable persons then only can we construct own terms (unitedly) but fee visits must never be given up.—I am, Sir, yours faithfully,

L. L THAIN, M.R.C S. Eng.

Ewyas Harold, Hereford, Dec. 28th, 1911.

To the Editor of THE LANCET.

SIR,—Allow me to point out an argument in favour of payment by work done and against the capitation fee as contemplated by the Insurance Act. Most of the domestic servants would be sent home during an illness, and in many cases their homes are at a great distance from their employers, or quite in another part of the country. In such cases a servant would naturally enter under a doctor where she works, and he would get the capitation fee; but when she is at home the country doctor cannot attend her for nothing, nor can the Government pay twice over for the same patient. On the principle of payment according to work done there will be no difficulty in paying both doctors according to the amount of their work. This argument applies also to journeymen labourers and others who often work at a different part of the country from their own homes. I am, Sir, yours faithfully,

Cambridge, Dec. 26th, 1911. U. K. DUTT.

To the Editor of THE LANCET.

SIR,—The outlook of the profession is bad because it wishes to negotiate terms of service without resort to the arbitrament of war. At present the nostrums on which we rely are: (1) pledges, and (2) guarantees. Both will do for spectacular but not for war purposes. A man's first duty is to his family and himself, and not to the profession that has undercut him and left him with a past of ineradicable scars. So much for the pledges. As to the guarantees, what business man would give the profession 15 per cent. of their face value for them? It is clear we must place no reliance on these weapons of tissue paper. Our powers of offence and defence must be independent of blacklegs, &c. If we are sure this cheap service is dangerous to the community it is our express duty to wreck it and demand a new service at the hands of the profession and the legislature. If the Chancellor does not see his way to pay due regard to our opinions and intentions and tries to force upon us the present measure we must, at the time we are called upon to carry out his plans, call out the honorary medical officers of all voluntary institutions—also all students—and at the same time call on general practitioners to boycott the panel. The question also here arises as to the expediency of calling upon wholesale chemists to support the legitimate claims of the profession. There still remains two important considerations. The doctors if defeated may treat patients, but they will be under no obligations to prevent malingering nor the prescription of good drugs if expensive. Those under the whip should retaliate according to their power. In war like this sentiment has no place until the battle is over. War is war, and our weapons must be dictated, not by choice, but by necessity.

> For when things border on impossibility
> Fine scruples have no place in men's alternatives.

The Chancellor must not be looked upon in any other light than as a man contending for a high ideal, but who is the custodian of the public purse.

I am, Sir, yours faithfully,

CHARLES WRAY, F.R.C.S. Eng.

Members' Mansions, Westminster, Dec. 29th, 1911.

To the Editor of THE LANCET.

SIR,—The following extract from "Notes for a Law Lecture," by Abraham Lincoln, July 1st, 1850, is, I think, interesting at the present moment in connexion with the question of contract medical practice:—

> The matter of fees is important, far beyond the mere question of bread and butter involved. Properly attended to fuller justice is done to both lawyer and client. An exorbitant fee should never be claimed. As a general rule never take your whole fee in advance nor any more than a small retainer. When fully paid beforehand you are more than a common mortal if you can feel the same interest in the case, as if something was still in prospect for you as well as for your client. And when you lack interest in the case the job will very likely lack skill and diligence in the performance. Settle the amount of fee and take a note

in advance. Then you will feel that you are working for something and you are sure to do your work faithfully and well.

I am, Sir, yours faithfully,
T. CUMING ASKIN, M.D. Dub.

Alderton, Woodbridge, Suffolk, Dec. 28th, 1911.

To the Editor of THE LANCET.

SIR,—As this Act enacts that Local Insurance Committees shall recognise medical committees and consult them on questions affecting "medical benefits" and the giving of treatment to insured persons, it will give the best constructive results if doctors at once form local medical committees to decide what terms they will accept when the Local Insurance Committees ask them. To aid this action I have drafted some suggestions *re* the terms to be accepted by doctors. I shall be glad to send a few copies to any person asking me for them, on receipt of 1*s.* to cover cost of printing and postage. Doctors must act at once, as the Local Insurance Committees must take action within six months.

R. R. RENTOUL, M.D.

78, Hartington-road, Liverpool, Dec. 30th, 1911.

To the Editor of THE LANCET.

SIR,—A correspondent in your last issue asks questions as to the attitude of "consultants" towards members of the profession who may be willing to work under the Act.

May I ask what is likely to be their attitude in the matter of hospital service under this same Act? They for the most part fill the positions of honorary physicians and surgeons in our voluntary hospitals, and as such will be called upon to work the Act in so far as it affects, or will affect, hospitals and dispensaries. The patients of such institutions are for the most part of the class to come under the provisions of the Act, and I think it may be said the Act contemplates the coöperation of hospitals and dispensaries for its purposes while failing to make provision for their maintenance, leaving it for the charitable to provide the bulk of the funds as heretofore. Still it does give power to approved societies or insurance committees to make subscriptions or donations, but we may be quite sure these will not be made *ad misericordiam* but for benefit to be received—a business arrangement purely. Should not the staffs of our hospitals make it clear to the management, and also to those responsible for the carrying out the provisions of this Act, that they, too, will absolutely refuse to serve? Indeed, are not those numbered among the protestants, as such, committed to such a course? Under no circumstances should they longer continue to serve under the provisions of this Act except as salaried officials of the hospitals.

I am, Sir, yours faithfully,
PROTESTANT.

Dec. 25th, 1911.

THE MORBID DIATHESES.

To the Editor of THE LANCET.

SIR,—The views of Mr. R. Clement Lucas expressed in his recent Bradshaw lecture at the Royal College of Surgeons of England respecting the medical diatheses are rather startling.[1] I have, however, reason to believe that they represent opinions which, if not generally avowed or expressed by the younger pathologists and surgeons, appear to be seriously held by not a few of them.

The line of argument adopted is that certain habits of body which have long been, and still are, recognised as specific and peculiar in respect of their intimate textural proclivities, and their reaction to disease, have no existence, and constitute but "fond imaginations" in the minds of the older physicians. These alleged constitutional habits are gradually being shown to depend exclusively upon specific microbic intrusions, and may therefore be dismissed from further consideration in the field of practical medicine. In short, the unit of pathogeny is henceforth to be completely expressed by a microbe. The soil, or textures, into which these vicious intruders penetrate and generate their toxins is to be regarded as quite immaterial; the *seed* alone is of any importance in the case. Human beings are all alike in tissue-tendency, albeit some are stronger and some are weaker, with similar constitutional reaction to all irritants and toxins, and with no special proclivities either to encourage or destroy any one of these. The older physicians are to be regarded as rather unwise men with feeble powers of observation. To-day we are living in the full light of noon, and are prepared to give rational explanations of almost all maladies and their progress, save a few for which as yet the specific microbes have eluded discovery.

Such views may possibly commend themselves to the minds of some modern surgeons and bacteriologists, but they do not happen to be in accord with careful observation and research in clinical medicine. Physicians, at all events, know full well that they have to deal with varieties of *soil* as well as of *seed*, and must regard both factors as of equal importance. Bacteriology, indeed, has abundantly tended to confirm the certainty of some of the diatheses described by our forefathers, and the old doctrine of the diatheses will never, as I venture to believe, be swept out of the field of scientific and practical medicine by any opinions or efforts of surgeons or bacteriologists.

I am, Sir, yours faithfully,
DYCE DUCKWORTH, M.D.

Dec. 27th, 1911.

[1] THE LANCET, Dec. 23rd, 1911, p. 1755.

THE DIAGNOSIS AND TREATMENT OF URINARY TUBERCULOSIS.

To the Editor of THE LANCET.

SIR,—Dr. Newman's criticism of my remarks on nephrectomy in urinary tuberculosis in his letter in THE LANCET of Dec. 16th, 1911 (p. 1735), suggests a greater difference of opinion between us than really exists. The physician and the surgeon necessarily look at the question from a somewhat different point of view. Even the material upon which their opinions are based is likely to be different, for there will be a natural selection of cases made, by which the operable cases will go to the surgeon and the inoperable to the physician. The truth will lie midway, and will be reached by a combination of the two experiences.

It is evident that on the main points both are generally agreed: 1. That in advanced cases, where the disease is bilateral or the bladder involved, nephrectomy is out of the question. 2. That where the disease is unilateral and the bladder not affected, operation is desirable and that with as little delay as possible. The only question, then, is as to the ease and certainty with which unilateral renal tuberculosis can be diagnosed in its early stages, or, in other words, the other kidney be regarded as sound.

The early diagnosis of renal tuberculosis is not so very difficult in the present day if full advantage be taken of all the recent improvements in method. But there remains the question whether the disease is limited to one kidney, and the answer given to it is of the greatest importance, for it determines the advisability or not of the operation. Post-mortem evidence shows that both kidneys are affected in not less than 30 per cent., and that even in quite early cases the affection is not infrequently bilateral. It also shows that the disease may exist in the opposite kidney in so early a stage that it could not give any direct evidence of its presence.

Another set of statistics is furnished by the results of operation, in which the number of cases cured is recorded. Unfortunately this line of inquiry often proves unsatisfactory, because while most of the successful cases are recorded the unsuccessful ones are not. The figures do not sufficiently distinguish between the immediate and remote results of operation. The mortality of the operation has nothing to do with the problem. It is no doubt small. The question is not whether the patient died or recovered from the operation but what the ultimate result was, and whether the patient was cured of the disease. Walker's statistics as quoted by Dr. Newman are not clear, but it may be noted that out of the 210 cases only 20 are described as "cures." I do not wish, however, to labour this point. There are, no doubt, some cases, more it may be hoped than we think, in which the operation has been completely successful and the patient has remained healthy for years. No doubt with improved methods his percentage of such cases will increase.

But after all we come back to the degree of difficulty in being certain in any given case that the one kidney is sound. Those most skilful in diagnosis will make fewest mistakes, but I suppose that not even the most skilful and experienced would deny that there is a fair chance of error, and therefore risk; in less skilful and experienced the greater the

chance of error. The very ease of operation increases the temptation to the surgeon. Considering that nephrectomy reduces at one stroke the renal capacity of the body by one half, the caution I expressed is fully justified, and the conclusion warranted that nephrectomy is an operation which should only be undertaken after very serious consideration and with full understanding of the risks it involves.

I am, Sir, yours faithfully,

Wimpole-street, London, W., Dec. 29th, 1911. SAMUEL WEST.

To the Editor of THE LANCET.

SIR,—I am very pleased to see that in the issue of THE LANCET for Dec. 16th, 1911, Dr. David Newman has supported the surgical treatment of renal tuberculosis in reply to Dr. Samuel West's address to the Harveian Society. In the discussion which followed this address Mr. Hurry Fenwick and Mr. Thomson Walker brought forward the surgical aspect of the treatment of this condition, and I would add my own experience on this subject.

There is little doubt that the more recent methods of clinical observation have proved that renal tuberculosis is at first a unilateral disease, and is not so frequently bilateral as was concluded from the post-mortem evidence obtained from later stages of the disease. Further than this, it has been shown that in tuberculosis of the urinary apparatus the primary focus of the disease is in one or other kidney in the great majority of cases, whereas only a small percentage commence primarily in the bladder. Walker states (*Annals of Surgery*, 1907) that in a series of 279 cases of genito-urinary tuberculosis the kidney was first involved in 184 and the epididymis in 80.

In a recent article on "Primary Unilateral Renal Tuberculosis" in the *Guy's Hospital Reports*, Vol. LXIV., I have collected 92 cases of this disease, and in an appendix to the report have tabulated 13 cases which have been under my personal observation; to these I can now add two more recent cases, making 15 in all under my own care. Dr. Samuel West terminates his address with the remarks:—

> All that I wish now to do is to protest against regarding the removal of a tuberculous kidney as an operation to be lightly decided on. It is a very grave act, requiring the most serious consideration and in all cases involving grave risks. ..... The question is not whether the operation can be safely and successfully done, but what will be the condition of the patient afterwards and how far his chance of life will be altered for better or worse.

It is in reply to this question that I wish to place before the readers of THE LANCET the results obtained in these 15 cases under my own care. No surgeon with a knowledge of renal surgery would in the present day embark upon such an operation as nephrectomy without giving "serious consideration" in each individual case, without a complete examination of the functional activity and of the freedom from disease of the other kidney. Watson has shown that operative mortality of nephrectomy has fallen from 35 per cent. to 7·8 per cent. since these examinations have been conducted.

Of the 15 cases under my care, one refused operation, although seen in an early stage, and in spite of vaccine treatment gradually became worse, and died some two and a half years after. In the remaining 14 cases nephrectomy and complete ureterectomy was performed at one operation in 13 cases, and nephrotomy and erasion of a small focus in one. Of the 14 cases, one died as the result of the operation from suppression of urine and one has been lost sight of, having gone abroad some eight months after the operation. Two cases have only been operated upon during the last 15 months, and although both are doing exceedingly well since the operation, I exclude them, as sufficient time has not elapsed to speak of the result. Of the remaining 10 cases who have survived the operation for varying periods from two and a half to six and a half years, six cases can be stated to be definitely cured, whilst four are very greatly improved, although still troubled with slightly increased frequency of micturition. I hope that these figures, even though few in number, may help to convey a different impression than that left by Dr. West's address.

I feel strongly that the correct treatment for unilateral renal tuberculosis is nephrectomy combined with complete ureterectomy, and would mention the operation I have described in the *Guy's Hospital Reports* of a separate lumbar and ilio-inguinal incision, by which means a complete bridge of abdominal parietes remains between the two incisions to strengthen the resulting scar, and by which practically the whole length of the ureter can be removed intact with the kidney and renal pelvis by an extra-peritoneal operation. That vesical infection with tuberculosis is, unless very extensive, no contra-indication to the operation of nephrectomy I am certain, for I have seen not only very marked improvement in the general health and in the vesical symptoms in these cases after nephrectomy and ureterectomy, but I have cystoscopic evidence of the complete cicatrisation of tuberculous vesical lesions after the removal of the primarily affected kidney and the subsequent treatment with tuberculin.

Apologising for the length of this letter and the encroachment upon your valuable space,

I am, Sir, yours faithfully,

Wimpole-street, W., Dec. 30th, 1911. R. H. JOCELYN SWAN.

"UNICELLULA CANCRI."

To the Editor of THE LANCET.

SIR,—Sir Henry Butlin's lectures on the above subject, and the correspondence in your columns, have brought out very clearly a fundamental fact with regard to the cancer problem, and the mental attitude of the profession towards it. The profession has set out to define "the disease cancer" in particular, without first defining the meaning of "the disease" in general. Our science is at present sharply divided into two portions; in one "diseases" are scientifically defined, in the other they are undefined. I propose to show that "the disease cancer" lies at present in the latter category. Our defined diseases consist of four main groups. We all recognise "the diseases" of parasitism, of poisoning, of traumatism, and of incomplete development. Every one of these true diseases is "a mental conception, drawn from the observation of a series of symptom-groups of determinate and similar causation." For instance, in order to define "the disease typhoid fever" a series of cases has been observed, in all of which a certain microbe is parasitic, and in which a widely varying but characteristic symptom-group occurs. By thus correlating cause and effect in a sufficient number of cases we are enabled to derive a definite and reliable mental conception, to record a true disease. But it must be observed that the "cause" is the parasitism of the typhoid microbe, and this only. All antecedent conditions, leading to each individual attack, are absolutely excluded from our definition. The days of "predisposing and exciting causes" are over. Thus, when we speak nowadays of any true disease, such as typhoid fever, we imply distinctly that we possess definite knowledge of "the cause." A moment's reflection will convince any one that this does not apply to "the disease cancer." We speak, as a matter of fact, of "seeking the cause of this disease," whereas the definition of all true diseases rests on the antecedent correlation of cause and effect in a long series of cases.

The explanation of this extraordinary situation is not far to seek. It has been the custom in our profession from the earliest times to call every recurrent recognisable symptom-group "a disease," quite irrespective of the correlation of cause and effect. So that it is probably within the mark to say that for every true disease that is recorded in medical science there are to-day twenty spurious diseases. Bright's disease, Hodgkin's disease, Addison's disease, Graves's disease, diabetes, angina pectoris, myxœdema, pernicious anæmia, gout, asthma, insular sclerosis—these will serve as examples of recurrent symptom-groups from which we derive conceptions that are called, to our confusion, "diseases"; to our confusion, because they do not represent correlated cause and effect. No one will deny that "the disease cancer' belongs at present to the latter category; it does not coincide with the true diseases; it has not been proved to be due to parasitism, poisoning, traumatism, or incomplete development. The profession is halting between two opinions; either we do or we do not know what we mean by "a disease"; can we draw a distinction, for instance, between lead poisoning and Hodgkin's disease, or can we not? I say we can; because our conception of lead poisoning is founded on correlated cause and effect, while our conception of Hodgkin's disease obviously is not. If this be true, then cancer is merely a recurrent, recognisable symptom-group, of which the cause is still unknown. Modern research seems to me to have placed it almost

beyond doubt that the symptom-group called cancer is always due to one and the same cause; and that it is not due to parasitism, poisoning, or traumatism; in other words, that it is not due to a cause of extrinsic origin, to any interference from the environment. The manner of growth that characterises the cancerous tumour is, to my mind, to be accounted for only by some disturbance or dislocation, temporary or permanent, of the normal processes of growth; there is, as the older physician would have said, some constitutional flaw at work. The hopeful aspect of the situation lies in the fact that we already know a great deal concerning the antecedent conditions that lead to this constitutional dislocation in individual cases. It is enough to mention sweep's cancer, but of the "cause" we have as yet no positive knowledge. This ignoring of the constitution, of the intrinsic causes of disease, is not confined to the case of cancer; it has been a feature of modern medicine ever since "pathology" and its "organic diseases" took possession of our science. The search of our scientists is now for "the anatomical seat of the disease," to quote from the official "Nomenclature of Diseases," a phrase to which I defy anyone to attach a rational, not to mention a scientific, meaning.

In many cases of diabetes, asthma, epilepsy, insanity, hysteria, it is obvious to all that the cause of the symptoms shown does not arise in the environment of the patient; it must therefore arise in his constitution, it must be intrinsic in origin. Instead of recognising this fact, the cause is simply ignored in the definition of all such "diseases"; we call recurrent symptom-groups by the same name as our true diseases, with the result that one-half of our science is left unsystematised. An exception is made in the case of one group of diseases of intrinsic causation; incomplete development is recognised as a cause of disease on a par with parasitism, poisoning, and traumatism. The diseases of incomplete development are true diseases, because on the basis of correlated cause and effect we frame definite conceptions of them; how long will it be before the other intrinsic causes are recognised? If cancerous symptoms prove, as I believe they will, to be of intrinsic causation, it will not be possible to differentiate "the disease cancer" sharply from other conceptions, as typhoid fever is differentiated; it will merge insensibly into other diseases, such as keloid. There are always indefinite and arbitrary lines, and borderland cases, amongst constitutional diseases.

My case may be summarised by saying that three conditions, not one of which is at present recognised, must be complied with before the solution of the cancer problem can be reached; the definition of "a disease" as "a mental conception, drawn from the observation of a series of symptom-groups of determinate and similar causation," must be accepted as a definite and universal standard in medical science; the intrinsic causes of disease must be recognised as being on an equality, scientifically speaking, with the extrinsic causes. It is also essential that antecedent conditions—which belong to the individual, actual attack, and are variable—be clearly differentiated from the "cause," which is constant, and on the correlation of which with a recurrent recognisable symptom-group depends the recognition, the definition of every true disease. At its present stage the solution of the cancer problem demands, above all things, broad and clear thinking.

I am, Sir, yours faithfully,

Clevedon, Dec. 17th, 1911. SYDNEY W. MACILWAINE.

To the Editor of THE LANCET.

SIR,—Sir Henry Butlin—I think truly—says "students of cancer, research workers, biologists who have studied cancer, are all practically agreed that the cancer cell is derived from the cells of the part in which it takes its origin." At the same time I think the majority of scientists who are not in the above category feel that the parasitic theory of cancer falls more into line with the broader principles of medical knowledge. Personally I feel that the latter view is more likely to be correct, and welcomed Sir Henry Butlin's paper as supporting it. But after coming to the conclusion that the unicellula cancri is "an independent creature," it is a little surprising to find that he is obliged to bring in heterogenesis as the explanation of this. Surely one must make very certain that there is no other explanation possible before adopting a theory which is now almost universally discarded.

The ground on which he bases his belief that the cancer cell is formed within the body is the close resemblance of its appearance and reactions to those of the cells around. Cannot this, however, be explained as being an analogy in parasitology to what occurs in zoology in the case of protective adaptation to environment? In other words, may it not be that the cancer cell, by closely resembling in its reactions the normal cells around, escapes the vigilance of the phagocyte, and so is enabled to gain a footing and proliferate?

I am, Sir, yours faithfully,

Brook-street, W., Dec. 29th, 1911. J. BRUNTON BLAIKIE.

THE HEALTH SEASON IN EGYPT.

To the Editor of THE LANCET.

SIR,—Many people who are more or less invalids find it desirable to leave England during the winter months for some place where the climate is warmer and drier, and of these not a few naturally think of Egypt. I find that there is a more or less prevalent idea that there are reasons why, *this year*, Egypt should not be selected as a place of residence. So far as I can make out it is supposed that travellers run some risk: (1) from the war between Italy and Turkey; and (2) from the possibility of cholera breaking out in Egypt. As regards the war, a few minutes' consideration will convince any reasonable person that Englishmen run no risk whatever. Egypt, in spite of alarmist statements in some of the newspapers, has never been more tranquil than at present. The very slight disturbance in the lower quarters of Alexandria, which lasted for a few hours, some weeks ago, though much exaggerated in one of the London newspapers, was not to be compared for one moment with the riots which occurred in many English towns a few months ago and did not affect English residents or tourists at all. No other disturbance of any kind has occurred. The danger of any attack on life or property exists only in the minds of alarmists in England and is not seriously contemplated in Egypt.

As regards cholera, the precautions taken at the Egyptian ports are so stringent that an outbreak of cholera is practically impossible. I am pleased to find, too, from practical experience that the precautions are not confined to the ports, but that the address of every traveller who has touched at an infected port is taken and notified to the sanitary officer of the district or town he goes to. So that should a sporadic case by any chance pass the frontier it would be dealt with very quickly, and I believe effectively. Some discomfort—i.e., one or two days' detention on the steamer which has conveyed them—may be inflicted on tourists who have come from an infected port. But those coming from England by sea (not touching at an infected port) or those coming overland by Marseilles or by the excellent service *viâ* Trieste and Austrian Lloyd steamers would suffer no inconvenience whatever.

I am so convinced that residence in Egypt is as safe this year as any other year that I have brought out my wife and family, and I write these lines to do what is possible to dissipate the rumours I have alluded to.

I am, Sir, yours faithfully,

Helouan, Egypt, Dec. 11th, 1911. R. ACKERLEY.

THE EVOLUTION OF MODERN GYNÆCOLOGY.

To the Editor of THE LANCET.

SIR.—In the very interesting article on the Evolution of Modern Gynæcology, by Dr. Arthur E. Giles, in THE LANCET of Nov. 25th, 1911 (p. 1470), the honour of having performed the first complete extirpation of the uterus and ovaries by the abdominal route, and of having done the first successful hysterectomy for fibroid tumour, was given to Charles Clay of Manchester. Without desiring to minimise the remarkable achievements of Charles Clay in the early days of abdominal surgery, the above statement seems to demand some correction.

On Nov. 17th, 1843, Nov. 21st, 1843, and on Jan. 16th, 1844, Charles Clay opened the abdomen and removed fibroid tumours of the uterus. The third operation is the first recorded abdominal pan-hysterectomy. All of these operations were based upon the erroneous diagnosis of ovarian tumour, so that in no case was the operation started with

the intention of doing a hysterectomy. In 1842 Charles Clay had likewise made a similar mistake in diagnosis, but he abandoned the operation when he discovered the tumour was uterine.

The first deliberate hystero-myomectomy was that performed in June, 1846, by John Bellinger, of South Carolina, U.S.A. The patient, a coloured woman, died upon the fifth day from peritonitis. The first successful hysterectomy was performed by Walter Burnham, of Lowell, Massachusetts, on June 26th, 1853. This was not a deliberate operation, as Burnham considered the tumour to be ovarian. After the incision was made the patient vomited, forcing the uterus, the fibroid, and associated ovarian tumours out of the wound, and as Burnham was unable to replace the mass he did a supravaginal removal of the uterus, with ligation of the lateral arteries. A left ovarian tumour was removed and a right ovarian tumour also incised. The ligation of the ovarian and uterine arteries in the broad ligaments is similar to that of the modern operation. Burnham continued to do the operation from time to time, performing altogether 15 operations, but only three of his patients recovered.

The first deliberate and successful hysterectomy for fibroid tumour was performed by G. Kimball, of Lowell, Massachusetts, on Sept. 1st, 1853. Kimball had a clear concept of the diagnosis, and in his writings advocated the operation. Previous to 1856 Kimball operated four times for fibroid tumours of the uterus, with but one recovery. The successful operation of E. Koeberlé was not performed until April 20th, 1863. The first successful abdominal myomectomy is apparently that of W. L. Atlee, of Pennsylvania, performed on August 28th, 1844. This was not a deliberate myomectomy as the tumour was supposed to be ovarian, but the ovaries were found to be normal at the necropsy three years later.

The honour of having performed the first deliberate hysterectomies for fibroid tumour seems to belong to the following surgeons in the order named:—Bellinger, Kimball, Burnham, Clay, and Koeberlé. For a fuller discussion of the subject and a careful tabulated bibliography of the early operations for fibroid tumours, reference may be made to the article by Noble in the *American Journal of Obstetrics*, Vol. XL., No. 2, 1899.—I am, Sir, yours faithfully,

Philadelphia, U.S.A., Dec. 18th, 1911. W. WAYNE BABCOCK.

THE PRESCRIPTION OF TUBERCULIN.

To the Editor of THE LANCET.

SIR,—I can see nothing in Mr. Gamble's letter to modify my opinion. Whatever terms are used, and however explicit the physician may be to indicate his intentions, one comes back to the fact that he is ordering a specific fluid, and the dilution of that fluid must be calculated in measures. In my last communication I referred to Koch's bacillary emulsion, because at the time I was making dilutions of that fluid, but it applies with even greater force to Koch's new tuberculin T.R. 1 c.c. of this fluid contains the active bacterial matter of 10 milligrammes of tubercle bacilli, which represents 2 milligrammes of solid substance. I have seen the dose of T.R. indicated in decimals or fractions of a c.c. of that fluid, in fractions of a milligramme of tubercle bacilli, and in fractions of a milligramme of solid substance. Therefore it would be far better, and would avoid any possibility of confusion if it were always ordered in decimals or fractions of a c.c. of the original fluid. Personally, I prefer to work in decimals. I am, Sir, yours faithfully,

London, Dec. 19th, 1911. P. W. SQUIRE.

"GREEN" TEA.

To the Editor of THE LANCET.

SIR,—I have had a good deal to do with China tea, and therefore I am much interested in your annotation on p. 1786 of THE LANCET of Dec. 23rd. Your correspondent says that formerly Prussian blue was used for colouring the leaf in "green" tea. I should be very much obliged if you would ask him to supplement his interesting letter by stating what evidence there is of the former use of this pigment. The statement was freely made in this country some 35 or more years ago, and to it was largely due the disuse of green tea and the ruin of the trade in green tea in this country; but I do not think it was made on any sure basis of fact. For all that it may have been true, and I should be glad to know if your correspondent has any evidence to offer.

I am, Sir, yours faithfully,

Duchess-street, W., Dec. 29th, 1911. E. MUIRHEAD LITTLE.

SPONGE EDUCTION.

To the Editor of THE LANCET.

SIR,—In your issue of Nov. 11th, p. 1348, you have an annotation on "Sponge Eduction." This I read with much interest, but would point out that this is by no means a new form of treatment, and I do not think it had its origin in America, as you suggest. In 1889 Mr. A. G. Miller, surgeon to the Royal Infirmary, Edinburgh, regularly taught his students the advantages of applying prepared sponge for encouraging the growth of granulations. He termed his system "sponge grafting." His then house surgeon, Mr. Alexander Miles (now surgeon to the Royal Infirmary, Edinburgh), will doubtless recollect these successful experiments. In 1892 I was consulted by a lady with a large callous ulcer on her leg. She informed me that this had been present for over ten years and had resisted all treatment. Following the method taught by Mr. Miller, I sponge-grafted the leg, and in four months the ulcer had disappeared, leaving a firm cicatrix. I met my patient in 1908, and she informed me that the leg was in excellent condition and had given no further trouble. In numerous cases I have tried Mr. Miller's so-called "sponge grafting" to encourage growth of granulation tissue and invariably with good results.—I am, Sir, yours faithfully,

DAVID DONALD, M.D. Durh.,
L.R.C.P. & S. Edin., L.F.P.S. Glasg.

Victoria, British Columbia, Dec. 4th, 1911.

*** In this regard we may mention a letter in THE LANCET of Nov. 25th, 1911 (p. 1516), where the work of Professor D. J. Hamilton is quoted.—ED. L.

THE ACTION OF RADIUM ON MALIGNANT GROWTHS.

To the Editor of THE LANCET.

SIR,—Many explanations have been advanced as to how radium acts in cases of malignant growths. Some authorities, such as Wickham (Paris) and Finzi (London), maintain—and, I think, with good cause—that radium exercises a selective or specific action on cancer cells, while others, among whom may be mentioned Bashford (director of the Imperial Cancer Research) and Mansell Moullin, refuse to see any such selective action, and state the action of radium is merely that of a powerful caustic. Its action in such a case might be comparable to that of arsenic paste, zinc chloride, potassium bichromate, and other chemical caustics the application of which has occasionally given good results in cancerous growth.

A third theory, propounded by Deane Butcher, is that radium possibly acts as a vaccine, its rays exciting the leucocytes to the production of antibodies. In support of this it might be stated that the opsonic index has been found raised after applications both of X rays and radium.

Dominici,[1] in an interesting article, shows by means of microscropic sections the gradual retrogression of a case of sarcoma under the influence of radium. Briefly, the sarcoma is converted into a fibroma, which is eventually changed into scar tissue. The changes described are apparently of the same nature as those occurring in the "spontaneous or natural cure of cancer."[2]

Dominici, moreover, demonstrates that this fibroma is not made up of the vascular connective tissue which exists between the sarcomatous cells, but is a result of the transformation of the sarcomatous element itself. Briefly, this change, he says, is brought about in the following manner. 1. A metamorphosis of some of the protoplasma of the plasmodial elements as well as the sarcomatous cells into connective tissue fibres. 2. A transformation of the remainder of the protoplasma and of the nuclei of the sarcomatous elements into permanent fibrous tissue cells. 3. *The obliteration of the blood-vessels.* I have purposely

[1] Archives Générales de Médecine, Radium Number, July, 1909.
[2] Handley; Brit. Med. Jour., March 6th, 1909.

placed the last heading in italics, because here seems to me to be a possible explanation of the action of radium on new growths.

I have been using radium in my practice during the last two years, and the chief thing that has struck me about it is its wonderful influence on blood-vessels and lymphatics. The remarkable power that radium has in arresting hæmorrhage was referred to by several speakers at the last annual meeting of the British Medical Association. It may, in fact, be stated that its chief utility in therapeutics is its power of obliterating blood-vessels or spaces, as witness the way in which it removes various forms of nævi and angiomata. Now it seems to me that this action of radium on vascular tissues will equally explain to a large extent its beneficial influence in new growths. The obliteration of the blood channels which ramify in and supply the growth would in great measure tend to cut off its source of nutriment, which must eventually result in the death and disappearance of the growth.

I have been tempted to write the above not as anything new, the action of radium on blood-vessels being well known, but because as regards new growths this special property of radium seems either to be forgotten or kept well in the background.—I am, Sir, yours faithfully,

FERNAND L. DE VERTEUIL, M.D. Edin., M.R.C.S. Eng., L.R.C.P. Lond., Surgeon R.N. (ret.).
Vancouver, British Columbia, Dec. 17th, 1911.

MOTORING NOTES.

(FROM A SPECIAL CORRESPONDENT.)

The Advantage of Aluminium in the Construction of Pumps and Radiators.

AN unfortunate accident which took place recently through a low night temperature impels me to give this personal reminiscence, though it reflects in an adverse way on my care in automobile matters; still, my experience may be of service to others. My car is housed in an unheated shed, and to obviate the trouble of emptying and refilling the water-tank I have always added some 20 per cent. to 25 per cent. of glycerine—that is, 60 to 70 oz. of glycerine in each gallon of water used. When a recent seasonable temperature set in, I had only a winchester of glycerine in the house. This worked out at 36 oz. to the gallon, which I thought enough for one night's safety. That night the thermometer fell to 17° F., and, on inspecting the car on the following day, the pump was found to be frozen. With great care and gradual warm fomentations a thaw was effected, but a crack resulted in the water-pump casing. As chance had it, the casing was of aluminium instead of the more usual gun-metal. In this instance the lighter and softer substance proved an advantage. Without removing the pump the crack was thoroughly stopped by gently tapping with the end of a small hammer along the fissure. I think this shows the advantage of aluminium for radiators and pumps, for if a split occurs the careful use of a hammer will effect a cure. The moral, of course, is that when adding glycerine 70 oz. should be used for each gallon of water.

The Danger of a Flooding Carburetter.

I recently heard of a friend's car—it was an old 6 h.p. Wolseley—which, after a strenuous life of some eight years, finished its career by catching fire near Ladywell Bridge. An inquest revealed that as a result of wear, brought about by constant jarring, the needle-spindle of the carburetter just above the cone had worn, resulting in the formation of a slight exostosis or shoulder. This occasionally fouled and prevented the valve closing. The carburetter then flooded, the overflow pipe thus exuding petrol, and the mixture becoming too rich. In the case under consideration the exhaust pipe had become red hot and set fire to the escaping petrol. A little emery paper and elbow-grease on the carburetter valve-stem would have prevented this sad end of a noisy but capable and hard-working little runabout.

A Useful Petrol Filter.

Messrs. Brown Brothers, Limited, have placed on the market a filter which certainly separates every particle of foreign matter and water from the petrol. The petrol enters through a pipe from the upper part of the filter, and the pipe projects low down into the body of the filter. If there is any water or grit, this sinks to the bottom, whereas the petrol itself, being lighter, is forced up through a conical-shaped gauze strainer to the outlet, and thus to the carburetter. Beneath the filter a cock is fitted for draining off the impurities. Probably the commonest cause nowadays of a roadside stop is a choked jet, so this little accessory is worth considering by the owners of all cars on which a petrol-straining device is not fitted.

Regarding the Use of the Brakes.

When recently chatting with a repairer he was somewhat sarcastic regarding the lack of sympathy which many of his doctor clients had for the braking mechanism of their cars. The side brakes should be the chief ones to employ, as they do not cause any strain on the transmission. The trouble with most modern cars is that the side-brake lever is usually outside the body on most of the torpedo variety, and therefore rather difficult to reach, especially when the hood is up, thus fostering the bad habit of so many motorists, who chiefly depend upon their foot brake. The remedy would be for manufacturers to make the foot brake act on the wheels, and the hand one on the cardan shaft. This is done on one or two cars, and might be introduced with advantage on others. The engine itself is an excellent brake, and if the second, or on very steep hills the first, speed is slipped in, and the ignition turned off, most hills can be negotiated without using either brake. New shoes are, it is true, inexpensive. Still, they take a little time to fit, and by descending hills in this way the necessity for replacing these parts may be indefinitely postponed. Should the shoes wear, they can still be used if trued in the lathe and then covered with raybestos, which is composed of asbestos and brass wire and produces more friction than even metal to metal. It is supplied in varying thicknesses, so as to be adaptable to any worn drum or shoe. It should be fixed by countersunk rivets. It will also help to do away with the "chattering" that worn metal-to-metal brakes develop.

A Useful Step Mat.

At this season of the year all who desire to save the unpleasantness of having the interior of their car stained with muddy footmarks should fit some form of mat on the footboard. Fibre mats when thus exposed to wet are apt to rot, and therefore the Duco Leather Step Mat is an improvement. This is made of leather, and is impervious to petrol and grease, and is durable. It is supplied either with or without a brass bound frame, and does not in any way detract from the appearance of the car—in fact, it rather adds to it—and ensures that the interior of the car will, in spite of the mud on the road and pavement, always look clean.

Regarding Monobloc, Twin, and Single Cylinders.

A good many readers have written regarding the advantage or the reverse of the monobloc over the twin and single cylinders. Like most things in this world, each type of casting has its advantages and disadvantages. I have chatted on this subject with motor manufacturers, engineers, and founders. The general opinion seems to be that for motors of low power, such as are usually used by medical men—that is, from 12 to 18 horse power—there is much to be said in favour of the cylinders being cast *en bloc*. They permit of smaller engine length, are rigid, and though the cooling may not be as uniform, still it is enough for low powers, and the cost of construction and erection is less, and therefore the selling price is also lower. The cost for the pattern is a little more, but this is more than made up for by the reduced expense for machining. With the monobloc all four cylinders can be bored and the base planed and drilled at one operation. Of course, it means as a rule only three bearings for the crank, but the old adage, "One throw, one bearing," does not apply to low powered explosion engines, and as a matter of fact even two crank bearings have been found quite satisfactory. The only real disadvantage is that when they are dismantled for cleaning or repair, they are heavier to lift and more difficult to replace. Still, a pulley can generally be easily rigged up, and with a little care and a helper, the job can be done. On this point I speak from experience, as I have carried it out myself. A further objection is the expense of replacement, should one cylinder crack. Well, this may be dismissed, as if glycerine is added to the water in winter,

and the engine is kept oiled and cooled, it is unlikely to need replacement. If it does, it is the owner's fault for failing to safeguard against avoidable risks.

BRISTOL AND THE WESTERN COUNTIES.

(FROM OUR OWN CORRESPONDENTS.)

Lord Haldane Elected to the Chancellorship of Bristol University.

AT a meeting of the University Court on Dec. 20th the Right Hon. Lewis Fry, who presided, proposed the election of Lord Haldane to succeed the late Mr. Henry Overton Wills as Chancellor. He spoke of the strong impetus to the extension of university education which Lord Haldane had given by work and word, and referred to the great powers of organisation which he had shown at the War Office. He spoke also of the distinction he had attained as a student of philosophy, and said that there was no one who would impart greater honour to the University than Lord Haldane. The proposition, having been supported by Mr. G. A. Wills, Professor T. H. Warren (President of Magdalen College, Oxford), Sir Isambard Owen (the Vice-Chancellor of the University), and others, was carried unanimously. It is understood that Lord Haldane will address the University during 1912 if his engagements permit.

Bristol Medical Men and the Insurance Act.

On Dec. 19th over 200 members of the medical profession met in the small hall of the University under the auspices of the Bristol division of the British Medical Association to hear a report of the recent representative meeting from Dr. George Parker and to discuss the situation. All the unfortunate bitterness and useless spirit of faction which have been only too conspicuous at some such meetings in the country were happily absent. This was due in large measure to the statesmanlike speech of the chairman, Mr. H. F. Devis, who said that much as the present position was to be deplored it was unfair to throw all the blame on the Council of the Association, since they were only carrying out the policy to which they had been committed by the Association's representatives. He regarded the outlook as gloomy, the position being this: that the securing of reasonable terms under the Act depended entirely on the local strength of the profession and the pressure which could be brought to bear upon the Health Committees. Nevertheless, he felt hopeful that the federation scheme put forward by the Bristol division would be accepted by the Association and by the profession as a whole, and that if so there would be an organisation powerful enough to fight successfully all the public bodies with whom the profession would be brought into contact. The principles of the proposed federation were explained by Mr. G. Scott Williamson—viz., democratic control, financial guarantee against loss due to the action of the federation, coöperative powers, recognition of vested interests, full money-raising powers, and unrestricted control over its own funds. Each member would pay an entrance fee of £2 and an annual subscription of £1 5*s*. After signing the memorandum of federation, as each member would have to do, he would make himself thereby liable for £5 in the event of winding up, and only in that event. Resolutions urging the adoption of this scheme by the Council of the Association, authorising its advertisement throughout the profession, and resolving upon a provisional call to local practitioners, were unanimously agreed to.

The Bristol Anti-tuberculosis Dispensary.

Bristol stands committed to the support of a tuberculosis dispensary similar in most respects to those already at work in Edinburgh, Paddington, and elsewhere. A house has been taken and furnished in Redcliff-parade, close to the principal thoroughfare connecting the centre of Bristol with densely populated areas on the Somerset side of the Avon, and only five minutes' walk from Bristol Bridge. For the first year, at least, it will depend upon a large sum of money given to equip and start the work by a lady who felt that such an institution was needed in Bristol. A whole-time medical officer, with previous experience in a similar institution, has been appointed, and the work will actually begin early in the year. It is being administered in connexion with the Civic League of Personal Service, which has absorbed and replaced the Charity Organisation Society in Bristol. Bristol is to be congratulated on priority in one respect; this dispensary is the first, I believe, to make definite terms with the local profession before starting. Patients will not be received unless they come from a qualified medical practitioner. This should prove a useful precedent in the solution of the out-patient problem, which demands solution nowhere more urgently than in Bristol.

Jan. 2nd.

WALES.

(FROM OUR OWN CORRESPONDENT.)

Tuberculosis in the Rhondda Valleys.

IN a report to the Rhondda urban district council on the compulsory notification of pulmonary tuberculosis, the medical officer of health, Dr. J. D. Jenkins, expresses the opinion that if suitable measures are taken in conjunction with the notification, and if those measures are prosecuted with thoroughness, diligence, and tact, it may be possible to eradicate the disease. The average yearly death-rate from phthisis in the Rhondda during the past ten years has been 0·96 per 1000 of the population. Dr. Jenkins estimates, therefore, that there are at the present time between 400 and 500 cases in this district, which has a population of nearly 160,000 persons. He considers that the steps to be taken as the result of notification should include advice to the patient and friends by officers of the council, with general instructions for the prevention of infection; the establishment of a tuberculosis dispensary and of an observation station—these for treatment as well as for the purpose of education in the adoption of means designed to prevent the spread of the disease and to maintain and improve the patient's condition after return home; and the formation of open-air schools. The observation station recommended could most suitably be established as an annex to the council's isolation hospital, for reasons bearing upon management, administration, and facilities for treatment, and could most conveniently be run in close connexion with a tuberculosis dispensary, which would naturally form the out-patient department of the observation station.

Verminous School Children in Carmarthenshire.

It is to be regretted that in his determined efforts to improve the physical condition of the Carmarthenshire school children the school medical officer of that county, Mr. D. A. Hughes, is not receiving adequate support from the members of the local education authority. He reported some time ago to the authority that in particular schools there was present a large number of verminous children, but no action such as is possible under the Children Act was taken, so that the only course open to him was to exclude the children in question from school attendance. This action brought down the average attendance so largely that the chairman and other members of the authority raised a protest and appeared to consider that it was quite a normal condition for a child to be infested with vermin and lice. The school medical officer, said one member, had very excellent theories, but it was a question whether the country had progressed sufficiently to enable them to be put into practice. For hundreds of years the children had been taught in a dirty condition, and if they were going to take drastic measures to change the habits of the people they would only bring the authority into disfavour.

Cardiff Mental Hospital.

The latest report of the Commissioners in Lunacy on the Cardiff Mental Hospital bears testimony to the excellent research work that is being carried out in the pathological laboratories attached to the institution. Mr. R. V. Stanford, M.Sc., a few months ago was appointed research chemist to the hospital, and Dr. H. A. Schölberg, who has been acting temporarily as pathologist, has now been appointed permanently to that position. In 1910 the recovery rate of the asylum, as reckoned on the total admissions of the year, was 46·7 per cent., an increase of 11·3 per cent. on the rate of the previous year. As many as 81·5 per cent. of those who recovered were discharged within ten months of their admission.

Jan. 2nd.

SCOTLAND.

(FROM OUR OWN CORRESBONDENTS.)

Scotland and the Insurance Act.

THE attitude of Edinburgh towards the Insurance Act has been indicated in THE LANCET and in the letters communicated to the daily newspaper press by medical men, and quoted in THE LANCET. In Edinburgh, as elsewhere, there has been a difference of opinion as to the failure or not of the Council of the British Medical Association to act up to the expectations of the bulk of the members of the profession. There has also been a corresponding difference of view as to the action of the Council in regard to Mr. Smith Whitaker's appointment. To understand the attitude of Edinburgh it is necessary to know that Edinburgh and Leith form one division of the Edinburgh Branch of the British Medical Association, and that Edinburgh and Leith have a Medical Practitioners' Association which is made up mainly of men who are members of the British Medical Association. The result is thus somewhat confusing to the outsider, for the same persons may appear to-day as members of the British Medical Association Division, and to-morrow as members of the Practitioners' Association. As regards the action of the Edinburgh and Leith Division of the British Medical Association, the members passed, by a large majority, a vote of censure on the Central Council; they also, by a majority of two to one, passed a vote of boycott on the Act, meaning thereby that they disapproved of forming Local Medical Committees under the Act. When the same body met as the Practitioners' Association within a week later there was no motion of boycott proposed, the main motion then being to form a National Medical Union, presumably after the fashion of Lancashire. The newspaper writing referred to has shown the two sides or two drifts of opinion. The one side says boycott *now*—have nothing to do with the Act, and tell the Commissioners so, or tell them that if they do not incorporate the six cardinal points in their regulations the profession will not form Medical Committees or in any way recognise the existence of the Act in their medical work. The other view is that the Medical Committees ought to be formed, that they should formulate the conditions under which work under the Act can be done, and, if these cannot be granted, that the doctors in the area will decline to work under it. The persons in favour of the first of these policies are enthusiastic, and think Scotland only needs a lead to adopt their policy all over the country. They think that the Insurance Commissioners for Scotland will issue regulations to the insurance areas with regard to the terms of medical practice, and they seem to make no allowance for the possibility of the Commissioners asking the different insurance areas to send to them the proposed terms of medical service. The practical question, if the Commissioners adopted the latter method, would at once be, Are the doctors in the areas to abstain from stating their terms beyond parrot-like reiteration of the six cardinal points? A policy of boycott in the insurance areas at the moment they are asked to state their terms more definitely would not in ordinary business be regarded as reasonable; at all events, it would only be reasonable if the profession in Scotland were unanimously to decide that the Act was so bad that they now and for ever washed their hands of it absolutely and completely, and would have nothing to do with it, save to pay their share of the taxes imposed by it. The impossibility of such unanimity may be gathered from two recent meetings—one, held in Glasgow on Wednesday, Dec. 27th, where a policy of boycott at the present stage got 36 supporters, but was defeated by "an overwhelming number of votes"; the other, held in Stirling on Thursday, Dec. 28th, of the Stirling, Clackmannan, and Kinross branch of the British Medical Association with a large attendance. At this meeting the following was unanimously agreed to:—

> In order to carry on negotiations with the Scottish Insurance Commissioners immediate arrangements be made for the establishment of Local Medical Committees throughout the area of the branch, and the subsequent appointment of medical representatives on the Local Insurance Committees.

The secretary was instructed to inform the Commissioners that every medical practitioner in the three counties covered by the branch had signed an undertaking not to enter into any arrangement for the medical treatment of patients until the six cardinal principles of the policy of the Association had been embodied in the regulations of the Commissioners. The policy of national boycott, at this stage of the proceedings, would thus appear to be unattainable. The argument, which is regarded as strong in favour of immediate boycott, is that the profession will be beaten in detachments by the Commissioners. In Scotland I have no apprehension on this point. The tone of the resolution of the Stirling branch is the tone of rural and urban Scotland, and will become more and more pronounced as weeks pass. The Scot has become *dour*, and when that happens there will be no quarter given by the profession in Scotland, in any county, to the Act and its backers, or to the Commission. Whatever may be the position in England, Scotland has never dreaded the guerilla war which seems likely to be thrown upon it. Here many men seem to have readily adopted the change in strategy which became necessary, and are confident that they will either get their terms in the areas or absolutely block the Act. The guerilla war, indeed, promises to weld the rural, and probably the urban, practitioners very closely together in the different areas. The policy of boycott, as a general policy for Scotland, does not therefore appear to be hopeful, unless the Commission turns out to be more stupid or more autocratic than is probable. Many of us who think boycott at present unstatesmanlike would be much pleased if the Commission acted so as to secure such a boycott all over Scotland, and there are points regarding which Scotland will not parley. So much may be taken as fairly expressing the opinion of Scotland, although I have not attempted to conceal my own leanings and my own optimism, based on what I have seen and what I know of the temper of the Scottish doctor at the present time.

The Proposed Scottish Central Committee.

One other important development has just reached a stage at which it can be referred to publicly. It has been an open secret for some time that the three Scottish medical corporations have been considering for weeks past whether they could do anything at the present juncture to help the profession in Scotland, seeing that Scotland was to have a separate Commission to work the Act. The problem was an exceedingly delicate one, and Scotland may, I venture to say, be congratulated on the solution which has been offered. The three corporations suggest the formation of a Scottish Central Medical Committee, to consist of representatives from the three corporations, from the four Universities, of the Scottish Committee of the British Medical Association, and of a representative practically from each insurance area. The corporations also practically offer to take their full share of the expense of the scheme. A statement has been made, and a meeting of the Scottish Committee will, it is expected, be also held shortly, with a view to determine what its attitude is to be towards this scheme. Needless to say, it is hoped that the Scottish Committee will put no obstacle in the way of their cordially coöperating in it. Such a central committee can act partly as a headquarters staff and partly as a body upon whom the Local Medical Committees can fall back for support against the Local Insurance Committees or the Commission. So far as can at present be seen the areas will insist upon having local option—that is to say, that while one area may determine to refuse to have anything to do with the Act, another area will formulate the conditions on which they can work under it. The policies are not really inconsistent; the difference lies in one set of persons dreading the local conflict, while another set is resolved to insist on getting the terms suitable to their area or not working. It will be months before any further progress can be made, and meanwhile the profession will have to consider some of the problems that will soon have to be faced, and also to determine whether a canvass may not have to be made on the point of boycott at the present stage, or at the next stage—that is, through the Local Medical Committees acting in coöperation with the Central Scottish Committee. All the omens point towards the profession in Scotland giving an excellent account of themselves in the coming struggle: they are resolved to get their terms or not to work.

Edinburgh Royal Infirmary.

The report of the managers of the Edinburgh Royal Infirmary for the year 1911 has just been issued. The total

number of patients treated in the wards during the year was 12,610, as against 12,342 in 1910. The average daily number of children in the wards was 81, as against 85 in 1910. The average daily number of patients in the wards was 846, against 842 in 1910. The largest number of indoor patients on any one date was 882, and the average time each patient was under treatment was 24·9 days. Of the total 12,610 cases, 4299 were medical and 7515 surgical. There were during the year 577 deaths. Of these, 196 took place within 48 hours after the patients' admission and occurred mostly in cases of severe injury or of a hopeless nature when admitted. The percentage of deaths to cases treated was 6·9, or 5·4 if the deaths within 48 hours be excluded. The out-patients during the year numbered 38,871. The total ordinary income was £37,142 2*s*. 2*d*., an increase of £1012 18*s*. 3*d*. on that of the preceding year, and the highest ever recorded in the history of the institution. Of the total income £21,632 17*s*. 9*d*. were derived from voluntary contributions, and this source showed an increase of £520 5*s*. 9*d*. over the amount of the previous year. Advances are also shown under all the other heads of ordinary revenue, the increase in payments for hospital tickets alone amounting to £173 1*s*. The ordinary expenditure amounted to £54,851 17*s*. 2*d*., an increase of £633 11*s*. 10*d* on the expenditure of the previous year. Of this increase £307 2*s*. 11*d*. falls under the house steward's department and is mainly due to increased cost of provisions. The cost per occupied bed (including the cost of the out-patient department) was £64 16*s*. 7*d*., an increase of 8*s*. 9*d* over the cost in the previous year. Of this increase 5*s*. 7½*d*. was due to increased cost of maintenance and 5½*d*. to increase in medical expenditure. Legacies and donations of £100 and upwards to the general funds amounted to £25,265 15*s*. 6*d*. Extraordinary expenditure amounted in all to £4586 18*s*. The chief items under this head were new quarters for the nurses, extension of the nurses' dining-room, and Professor F. M. Caird's theatre. The average number of nurses and probationers on the staff during the year had been 263 5. There were 640 applications for admission to the training school during the year. Seventy-six trained nurses had left during the year. The period of training for nurses had been extended to four years. In addition to the usual courses of lectures for nurses in training the fourth series of lectures for trained nurses was also given during the winter, the attendance having been very large. The total number of patients admitted to the Convalescent House, Corstorphine, had been 1199, as against 1192 in 1910. The daily average was 64·46 Of the total number admitted 964 remained three weeks or more. The total income of the Convalescent House for the year was £2570 5*s*. 5*d*., of which £2096 12*s*. 3*d*. was extraordinary revenue, and the expenditure amounted to £2835 15*s*. During the year the financial position of the Convalescent House and its relation to the Royal Infirmary had been considered by the board, and it had been found on examining old records that the house had been originally gifted "on condition that it should become an integral part of the infirmary and be kept in connexion with it." The board had, therefore, decided (1) to discharge the overdraft on the bank account as at Sept. 30th, 1910, amounting to £10,795, by a cross entry against the general fund of the infirmary; (2) to charge any debit balance at the end of each financial year thereafter against the general fund of the infirmary; and (3) that in the event of there being surplus revenue in any year the same should be "ear-marked," retained, and invested for the endowment of the Convalescent House. The accounts will, as formerly, be kept separate from those of the infirmary. In July, 1911, the Royal Infirmary was honoured by a visit from Their Majesties the King and Queen. The wards visited were No. 7 surgical, under the charge of Professor Caird, and No. 30 medical, under the charge of Dr. Byrom Bramwell and Dr. G. A. Gibson. The experiment in the treatment of incipient cases of mental disease which had been undertaken for one year in response to an application from the parish council had proved so far successful. Sixty-five cases of this nature had been admitted (25 males and 40 females). Of these, 30 were sent home recovered, 14 were discharged as improved. 3 remained *in statu quo*, 13 were certified, 3 died, and 2 remained under treatment. The physician in charge of the ward for incidental delirium, where the cases were treated, stated in his report that while the experiment had worked satisfactorily he did not consider that this ward, owing to the nature of some of the other cases dealt with as well as to the want of opportunities for recreation and out-door amusement, was the most suitable place for such treatment. The parish council subsequently inquired whether additional accommodation could be furnished pending the acquisition by them of a suitable institution for the treatment of such cases. The managers were reluctantly compelled to reply that they were unable to provide extended facilities, but intimated their readiness to meet the wishes of the council should they have any male cases urgently requiring treatment. The infirmary during the year had sustained the loss through death of several medical men closely connected with the work of the institution. Of former members of the staff there had died Dr. Andrew Smart, Dr. Peter Hume Maclaren, and Dr. Joseph Bell, the two last of whom had also rendered valuable service to the infirmary on the board of management. The death of Dr. Alexander Bruce had occurred while he held the post of ordinary physician to the infirmary, and after years of service which began in 1885, when he was appointed pathologist to the institution. The managers also deplore the death of the late superintendent of the infirmary, Colonel W. P. Warburton, C.S.I., which took place less than three months after he retired from office. In succession to Colonel Warburton the managers had appointed Lieutenant-Colonel Sir Joseph Fayrer, Bart., M.D., R.A.M.C. (retired), who entered on his duties on August 1st, having been for a month before that in daily association with his predecessor in the various departments of the work. Finally, the managers express anxiety as to the effect of the working of the National Insurance Act, and appeal to their fellow citizens to see to it that the splendid work of the Royal Infirmary be not impaired should any voluntary contributions be diverted from its support in consequence of the passing of this Act.

Milk-supply Regulations.

In a recent lecture on Milk and Human Tuberculosis the veterinary surgeon to the corporation of Glasgow enunciated his views on the control of our milk-supply. He stated that the Government had done practically nothing to safeguard the public health from tuberculous milk. In 1899 the Local Government Board amended the Dairies, Cowsheds, and Milkshops Orders so as to include tuberculosis of the udder, but they did not empower local authorities to slaughter the animals found to be affected. The consequence was that a dairyman who found that one of his animals was diseased simply passed it on to his neighbour. If the public wanted a pure and wholesome milk-supply the matter lay entirely in their own hands. They must demand that the Government take the necessary steps, and they must keep pressing that demand. He summarised his proposals as follows: (1) Withdrawing the power at present possessed by local authorities to frame regulations under the Dairies, Cowsheds, and Milkshops Orders; and (2) establishing a central authority to promote and maintain a pure and wholesome milk-supply. The advantages of placing the supervision and control under a central authority were obvious. It would take this all-important matter out of the hands of indifferent and, it might be, interested local authorities, and at the same time every cowkeeper would be enforced to conform to requirements applicable to the whole country. These requirements must provide, in addition to others, for (*a*) the annual licensing of every building used as a cowshed or dairy; (*b*) the seizure of milk grossly contaminated with filth; (*c*) the frequent examination by a veterinary surgeon of every milch cow; (*d*) the compulsory notification by the owner, or person in charge, of every diseased cow; and (*e*) the immediate slaughter of every cow affected with tuberculosis of the udder.

Jan. 2nd.

IRELAND.

(FROM OUR OWN CORRESPONDENTS.)

Honours for Irish Medical Men.

TWO medical men in Ireland are included in the list of New Year honours, both of whom receive knighthoods—viz., Sir J. Hawtrey Benson, President of the Royal College of Physicians, and Sir B. C. A. Windle, President of University College, Cork.

The Medical Inspection of Schools.

The subject of medical inspection of schools in Ireland is attracting more public attention than hitherto. Mr. J. B. Story discussed it recently in a lecture before the Statistical and Social Inquiry Society of Ireland. With regard to diseases of the eye, he stated that on every day that he saw out-patients in the Eye Dispensary he saw one or more children with some contagious form of eye disease, and there was no officially-arranged method of excluding them from school. Indeed, except for his certificate, which he was under no obligation whatever to give, the parents would be prosecuted if the children did not attend school. Every oculist in Dublin who had studied the question must have seen persons whose sight had been permanently injured by disease contracted from their school-fellows in National, industrial, or charitable schools. He estimated that the medical inspection of Irish schools would cost about £23,000, which could be raised by a rate of three-eighths of a penny in the pound.

The Irish Branch of the British Dental Association.

The Lord Lieutenant, speaking at the annual dinner of the Irish Branch of the British Dental Association, stated that medical inspection of schools was absolutely needed. To obtain it, the essential thing was to create a public opinion in its favour, and the means would then be provided. Many of the other speakers spoke of the anomaly of the Legislature in exacting certain requirements of knowledge and skill for the efficient practice of dentistry and neglecting to secure that practice to those certified as possessing such knowledge and skill.

The Poor-law Service.

It is becoming an increasing difficulty to obtain suitable candidates for many of the Poor-law appointments in Ireland. At a recent meeting of the Gorey board of guardians only one application was received for the vacant medical officership of Camolin, advertised at £120 per annum, with the usual emoluments. The applicant wrote stating that he would accept the position only on the salary being increased to £150. When called before the board, he pointed out that he would have to pay in rent £20, to keep a horse and man £60, which would leave £40 to live upon. The private practice was worth about £50 a year. It was decided to advertise again. The way to compel the guardians to give adequate salaries is to let their medical vacancies go seeking candidates.

The Medical Libraries of Ireland.

It is a matter of difficulty to anyone engaged in scientific work to know where he can most readily obtain access to such records as he may wish to consult. Those in charge of the medical libraries of the two Royal Colleges in Dublin have done their best to make their stores available to inquirers, but neither library has funds sufficient to keep complete files of even the most important periodicals. A few years ago the librarian of the Royal College of Surgeons issued a list of the medical journals taken in the various libraries in Dublin. This prevented much loss of time in fruitless search. The registrar of the Royal College of Physicians, with the help of Mr. Phelps, the librarian of the College, to whose courtesy all medical readers in Dublin are indebted, has recently issued a complete list of all foreign medical periodicals taken at any of the medical libraries in Ireland. This list also gives notes of the back numbers preserved. As there are in all 12 public libraries which take medical journals, the list will prove very serviceable in showing where particular periodicals are to be found. The library of Trinity College files all journals published in the United Kingdom.

The School of Physic Celebrations.

The bicentenary celebration of the School of Physic, Trinity College, has been fixed for July 4th, 5th, and 6th, 1912. Guests from many universities and medical corporations are to be invited. A provisional programme of the celebration has been arranged. It includes various receptions, garden-parties, and banquets, as well as university functions, at which honorary degrees will be conferred on distinguished visitors. A representative committee of medical graduates to coöperate in the celebrations will shortly be appointed. A meeting of graduates will be held in Dublin at an early date. It is hoped to get together an exhibition of objects, documents, and books connected with the history of medicine in Ireland.

The Belfast Water-supply.

The Belfast water commissioners have announced their intention of introducing a Bill next session to obtain an extension of time—from 1913 to 1925—for the construction of the Silent Valley storage reservoir on the Kilkeel river in the Mourne mountains, and to provide the necessary borrowing and rating powers of £500,000 for the works. It is proposed to increase the available rating power from 1*s.* 8*d.* to 2*s.*

The Insurance Act.

At a meeting of the board of management of the old age fund of the Presbyterian Church of Ireland, held in Belfast on Dec. 21st, 1911, a committee was appointed to examine the provisions of the National Insurance Act, with the view of the formation of an approved society under the Act for members of the Presbyterian Church in Ireland.

Pomeroy Dispensary.

The Local Government Board has written to the Cookstown board of guardians adhering to its previous communication that the initial salary of the medical man to be appointed to Pomeroy Dispensary be £100, as fixed by the guardians' scale of December, 1909. The guardians had appointed Dr. W. J. F. Mayne some weeks ago, at a salary of £80 a year, on the understanding that a midwife would be appointed at £20. The board of guardians has decided to adhere to its action and to keep the salary at £80.

Sanitary State of Omagh.

The Local Government Board has sent to the Omagh urban council extracts from the report of the medical officer of health regarding the condition of the urban district which show that nuisances have not been abated and that the district is not in a good sanitary condition. Fault is found with the water-supply, which contains peaty matter due to defective filtration and dirty pipes. Many of the sewers are defective, and the streets insanitary. The medical officer of health stated that his recommendations to the urban council on important matters had not been carried out and that the sanitary by-laws were not enforced. The report has been referred to the public health committee for consideration.

Omagh Asylum.

Five further cases of typhoid fever have been reported from this institution.

Down District Asylum.

In his annual report of this asylum the medical inspector draws attention to the fact that the number of patients had fallen from 767 to 753 at his last visit, which shows that this institution was an exception to the general rule that the number of insane requiring care is increasing in Ireland. The asylum could provide for about 70 more than it at present contains.

Diphtheria at Larne.

At a meeting of the Larne urban council held on Jan. 1st special acknowledgment was made of the humane and thoughtful act of Lady Dixon, who on the breaking out of diphtheria last year instructed the chairman to inform the medical men that she would supply antitoxin serum for all patients not in a position to pay for it.

Jan. 2nd.

PARIS.

(FROM OUR OWN CORRESPONDENT.)

Rhythmic Respiration to Prevent Breathlessness.

AT the Academy of Medicine, on Dec. 19th, 1911, M. Manquat communicated a method for obviating the breathlessness that ensues from rapid or uphill walking. It consists in maintaining the rhythm and speed rate of respiration within physiological limits, by utilising the natural powers of control over the respiratory and expiratory muscles. The rhythm and physiological speed rate maintain the cardio-vascular circulation in proper condition. The respiration can be rhythmically adjusted to the pace, by prolonging the expiration over about twice as many paces as the inspiration, and making not more than from 18 to 20 complete respiratory cycles in a minute. This method is also an excellent educative and therapeutic

measure, for it makes it possible to modify the breathlessness whenever the latter is dependent on any cardio-pulmonary trouble; under such conditions, however, it should be utilised with much circumspection and in a progressive manner.

Threats of Death to a Medical Man.

A recent incident recalls a drama which in the spring of the past year saddened the French medical profession—I refer to the assassination of Dr. Guinard by a disappointed patient. Some time ago M. Bosc, a sufferer from emphysema, was admitted to the Hôpital de la Pitié in the service of Dr. Babinski. On his becoming convalescent the administration of the hospital, having a demand for the bed occupied by him, requested him to return home. M. Bosc complied, but with great dissatisfaction. He presently wrote a letter to Dr. Babinski, in which he gave vent to his discontent, and reminded him of the fate that befell Dr. Guinard. Dr. Babinski prosecuted him in the Correctional Tribunal, and M. Bosc has been awarded a long sentence.

The Sale or Lottery of Eatables in the Fêtes Foraines.

The prefect of police of the Seine has issued a decree relative to the sale or putting up to lottery of eatables at *fêtes foraines*. This decree, in view of the fact that the sale or lottery of eatables susceptible of spoiling or decay presents a danger to the public health, forbids the sale or raffling at the *fêtes foraines* of meat, chickens, fish, shell-fish, preserves, or any other eatables except confectionery or pastry. Offenders will be tried before the ordinary police tribunal.

Antityphoid Vaccination.

In a communication to the Academy of Medicine on Dec. 19th, 1911, Professor Chantemesse referred to the question of antityphoid vaccination, the great value of which has been demonstrated by the experience of the army of occupation of Morocco. There is no room any longer for doubt as to its efficacy. Vaccination against typhoid fever has attained the same status as that against small-pox, and, above all, the vaccines put forward as a consequence of the labours undertaken 25 years ago by M. Chantemesse and M. Vidal in the laboratory of Professor Cornil, have given us this precious discovery. From that time M. Chantemesse has employed as a vaccine a culture of typhoid bacilli killed by heat. The later modifications of this technique have consisted of little else than changes of temperature employed in the heating of the culture or the addition of an antiseptic. Moreover, the results obtained with the vaccine of M. Chantemesse or its derivatives have proved comparable with those in the Moroccan campaign, for instance, in which four different types of vaccine have been used. There is no need for further experiment. In the American army 43,000 soldiers have been vaccinated during the last 18 months. The reaction that followed the operation has usually been insignificant. It was noteworthy in only one case in a thousand. Out of 43,000 cases of vaccination there were in all only four cases of typhoid fever, all of which were cured. Quite recently 15,000 soldiers of the army of Texas, mobilised on account of the troubles on the Mexican frontier, have been compulsorily vaccinated. In all, two cases of typhoid fever occurred, and these were followed by cure. Vaccination against typhoid fever is now obligatory in the American army. M. Chantemesse has installed at the Hôtel Dieu a service of gratuitous vaccination, which medical practitioners, internes, students, patients, and the public frequent daily in large numbers.

Therapeutic Applications of Colloidal Rhodium.

M. d'Arsonval has reported to the Academy of Sciences that as the result of investigations conducted at the Hôpital de la Pitié M. André Lancieu has succeeded in preparing colloidal rhodium in a perfectly stable form, having also a constant composition and a granular structure almost uniform and of extreme minuteness. Electric currents of high voltage and high frequency were the means employed in producing it. This colloidal solution has been used with much success in the treatment of a number of cases, often apparently hopeless and all of them the result of infection, including cases of pneumonia, typhoid fever, puerperal fever, and malaria. The administration was always by small injections, the pyrexia always subsided very regularly, and no mishaps ever occurred.

Death of Professor Lannelongue.

Professor Lannelongue died on Dec. 21st last, on the day after he relinquished the presidency of the Academy of Medicine, at the age of 71. His death took place in three days from the onset of pulmonary congestion. Professor Lannelongue was not only a surgeon of great ability, he was also, in every sense of the word, a great man. Having attained at a very early age the rank of *agrégé* of the Faculty of Medicine and surgeon to the Paris hospitals, he took charge during the siege of Paris of the ambulance station at the Luxembourg, which was organised by Madame Remusat, who subsequently became his wife. A member of the Academy of Medicine at 43, a professor at 45, he was a member of the Institute, President of the Academy of Medicine, Deputy, and finally Senator. He presided in 1900 over the International Congress of Medicine, which was for him the occasion of the donation of an important prize, and in the same year he founded in his native town, to which he bequeathed in advance his own house for this purpose, a popular museum of art. He was essentially a man of ingenuity. The ideas that he was enabled to put into actual operation, the methods that he worked out, will perpetuate his name in history more even than his career in the professorial chair at the faculty or his service at the hospital. As a surgeon he was an inventor even more than a practitioner, while his unwearying and active benevolence, his dedication of himself daily to public work, necessarily alienated a large part of his time from the practice of medicine. He founded the Institution for the Protection and Rehabilitation of Young Girls, the Dispensary Hospital Marie Lannelongue, in memory of his admirable wife, and also the establishment for young convalescent girls at Epinay-sous-Sénart.

Jan. 2nd.

BERLIN.

(FROM OUR OWN CORRESPONDENT.)

The Mysterious Epidemic of Poisoning in Berlin.

ON the morning of Dec. 27th it became known that in the municipal shelter for the homeless (Städtisches Obdach) 15 men had suddenly died with symptoms of poisoning and that some 20 more had become so seriously ill with the same symptoms that they had to be conveyed to the Friedrichshain Hospital. The above-named shelter is a refuge for people having no abode, who are admitted there without any formality for the night. The shelter is opened at sunset, actually at 4 P.M., and there are beds and bathing accommodation, and an evening meal, consisting of soup and bread, is supplied. The shelter is destined for men only; for homeless families a municipal shelter exists in another building. Apart from the municipal asylum there is a shelter in another quarter of the city, supported by private means, which receives men and single women in separate wings under nearly the same provisions as the municipal shelter. The latter has an accommodation for about 4000 people, and is especially overcrowded in the winter season. In the neighbourhood of the shelter is a street traffic of cheap comestibles, which the people are accustomed to buy for their suppers in addition to the soup supplied by the authorities, and it was first believed that the poisoning was caused by food purchased by the men outside the shelter. But this traffic had been prohibited on Dec. 26th and the two preceding days, because of Christmas and Sunday, so that this suspicion was abandoned. It was stated, however, that on the evening of Dec. 26th a man had sold within the shelter a box of red herrings to his fellows, and it was suggested that this box was stolen by him in the central market hall, where it had been thrown away as unfit for sale because the fish was spoiled. The symptoms resembled those of grave poisoning. According to the daily papers the patient suddenly felt very ill, had general convulsions, and soon fell into a state of apathy which led to a fatal issue within a few hours. A post-mortem examination was performed in two cases by Professor Strassmann, director of the Institute of Legal Medicine, the result being that the cause of death could not be ascertained, only some hæmorrhage in the intestinal mucosa being found. The bacteriological research also proved to be without result, and

the presence of an epidemic disease, such as cholera or cerebro-spinal meningitis, was disproved. The shelter was therefore opened the following evening as usual and no further case was expected. The morning papers of Thursday, however, reported 36 cases of death and 70 cases of illness. The authorities then took energetic measures. Five medical men were put on night duty in the shelter, and two motor cars for the transport of patients to the hospitals were ordered to wait within the court of the shelter during the night. The event proved the necessity for these measures, for on the following evening also new cases happened. A rumour circulated in the city that the poisoning was due to the soup distributed on behalf of the authorities, and this was expressly suggested by the Fishmongers' Association, which drew attention to the fact that only inmates of the asylum had been taken ill, and that within its knowledge no epidemic of poisoning by spoiled fish had broken out hitherto in Berlin. But the municipal authorities showed that the evening meal had not been supplied until 8 P.M. as usual, whilst the first cases had occurred at 6 P.M. On the evening of Thursday there appeared to be a decrease in the number of cases, but, on the other hand, cases now began to be reported from outside the asylum. In the neighbourhood of Berlin, of three men who had spent the night in a barn two suddenly died with the same symptoms of poisoning. This event caused great alarm, because it was believed that an infectious disease had now spread from the shelter to the outside. It was ascertained, however, through the evidence of the third man that the deceased had spent the last night in the shelter. The same was the case with some other seizures which occurred in the streets or police stations. On Dec. 31st 137 cases were registered, of which 68 have since died, and a great number are in a hopeless state in hospital. Two pavilions in the Friedrichshain Hospital have been exclusively reserved for new cases. The police are on duty in the shelter to examine the patients as to where they spent the last few hours or days, whence they got their meals, and so on, but owing to the apathetic condition of the patients it is exceedingly difficult to get any trustworthy replies. Moreover, the men belong to the very poorest and semi-criminal class and are little inclined to give to the police full particulars as to their life. In a number of cases the deceased are totally unknown, so that they were photographed on behalf of the police, and dactyloscopy was used for purposes of identification. Specimens of foods also from the grocers in the neighbourhood of the shelter were taken and examined. But notwithstanding the work of the medical officers it has so far been impossible to ascertain the nature of the disease. Professor Gaffky is of opinion that it is caused by intoxication with the bacillus botulinus, but the source of the poisoning is still absolutely unknown. According to the papers of this morning (Dec. 31st) the authorities no longer believe that the poisoning was due to spoiled food, but attribute it to cognac spoiled by methyl alcohol. Whether this extraordinary and improbable statement is correct it is impossible at present to say, but so great is the interest in the events at the shelter that the wildest rumours get abroad. It must be hoped that the source of the poison may be discovered as soon as possible, so that this epidemic of poisoning—one of the most extensive on record—may be checked.

Vital Statistics and Public Health in Prussia.

The annual report on the health of the kingdom of Prussia has now been published by the medical department of the Government. According to an epitome which has appeared in the *Aerztliche Sachverständigen-Zeitung*, the report states that the number of births has again decreased, being 21,253 less than in the preceding year, the rate being 32 living births for each 1000 of the population; this is the minimum since 1901, when the decline in the birth-rate first began, and has continued ever since. In 1876 the birth-rate was 40·9 per 1000, but in 1901 it was 36·5 per 1000. It is worth noting that the eastern districts, especially those inhabited by Poles, have far the highest birth-rate, whilst the lowest birth-rate is in Berlin—namely, 22·5 per 1000. The number of marriages has remained almost unaltered, but the number of children of each marriage has fallen. The death-rate has decreased from 18·03 per 1000 in the year 1908 to 17·1 per 1000 in the year 1909, so that notwithstanding the decreased birth-rate the population has become greater by 581,258, being an increase of 15 per 1000. The over-population of Germany continues to be a serious problem for the country. The principal causes of death were senile marasmus, diseases of the gastro-intestinal canal, especially in infants, tuberculosis, pneumonia, and diseases of the heart and blood-vessels. Among the exceptional causes of death there were 8422 cases of suicide, 876 of murder or manslaughter, 14,534 of fatal accidents, and 1096 of death attributable to alcoholism. The mortality of infants was 30·6 per cent. of the general death-rate. The city of Barmen in Rhenish Prussia had the lowest death-rate for infants and Berlin had the highest. On the subject of infectious diseases the report states that scarlet fever and diphtheria were increasing to some extent, while enteric fever, dysentery, and cerebro-spinal meningitis were decreasing. Some cases of cholera were registered in places near the Russian frontier. Pneumonia and influenza were prevalent during the inclement season in certain districts. Compulsory disinfection worked fairly well, although disinfection was sometimes neglected for personal reasons. There were 409 registered disinfectors. Vaccinations and revaccinations were performed in 1,941,988 cases; 30 deaths occurred as a result of vaccination, 15 of them being caused by local infections, such as erysipelas or cellulitis, and by generalised vaccinia; in 113 cases slighter troubles happened, so that altogether there were only 7 unfavourable complications per 100,000 vaccinations. The prevalence of venereal diseases could, of course, only be estimated as far as hospital patients were concerned; the number of cases has remained almost unaltered, being 47,474 as compared with 46,327 in the preceding year. In Berlin the incidence of venereal diseases was considerably over the average, being 63·9 per 10,000 of the population. The death-rate from tuberculosis has decreased, being only 15·6 per 10,000, as compared with 26·7 per 10,000 in the year 1891. Of 100 deaths in the year 1891 there were 11·6 caused by tuberculosis, but in 1909 the corresponding proportion was only 9·11. There were 230 cases of hydrophobia with 8 deaths, the mortality therefore being 3·48 per cent., notwithstanding the Pasteur treatment. Appendicitis proved fatal to 2128 persons. The number of deaths by poisoning was 1387, of which 592 were cases of accident, 772 were cases of suicide, and 23 were cases of murder. Among the accidental poisonings 47 per cent. were due to the effects of carbonic oxide, and among the suicides 28·5 per cent. resulted from poisoning by lysol. Death was due to morphine in 25 cases of suicide and 15 accidental poisonings. In the section dealing with public hygiene the results of the supervision of the sewers, sanitary arrangements, and water-supply by the local medical officers of health are reported. Special importance is attached to the providing of hygienic and cheap dwellings, and philanthropic associations for encouraging the construction of such dwellings were supported by the local authorities. The inspection of the food-supply was one of the principal duties of the medical officers of health, who worked in connexion with the public laboratories. There were 83 State or municipal laboratories in which 226,425 samples of food, exclusive of drinking water, were examined. In 27,729 cases, being 12·2 per cent. of the total, the quality of the food was unsatisfactory. It is remarked that the extreme dearness of butcher's meat has led to the consumption of rabbits and of horseflesh in some districts. In several samples of so-called fruit-juice not a trace of fruit was present, whilst, on the other hand, some beverages described as non-alcoholic were found to contain up to 3·5 per cent. of alcohol. The dangers of alcoholic excess were illustrated by the fact that 7528 inebriates were conveyed to the public asylums. Inebriety is reported even in the case of schoolboys principally in Berlin, in some places in the east of Prussia, and in some factory districts. The temperance societies are commended as doing good work by establishing places for the sale of tea and coffee in factories, in mines, and in districts where over-indulgence in spirits was prevalent. On the whole, the abuse of spirituous liquors was steadily diminishing, but the excessive smoking of cigarettes was obviously on the increase, as already stated in the health report of the Imperial Navy. The number of hospitals was 3153, of which 2278 were general hospitals with 15,459 beds, where 1,222,063 patients were treated, the average stay in hospital being 30 days. The number of qualfied

medical men was 19,319; there were also 1789 qualified dentists and 4008 mechanical dentists (Zahntechniker). The nursing profession included 41,473 persons, 80 per cent. of them being women, who in the rural districts belonged for the greater part to ecclesiastical orders. It is stated that the latter class of nurses often engage in unqualified medical work. The number of pharmacies was 3453, all provided with licences arranged in three classes, and in addition to them there were 217 pharmacies established within and for the special use of hospitals. The report is a very elaborate one, and deserves the careful attention of all who are interested in public hygiene.

Legislative Proposals Relative to Unqualified Medical Practice.

After having been twice brought before Parliament the Bill relating to unqualified practice has again been dropped because of the closing of the Parliamentary session. It was after the first reading referred to a committee of the House, as mentioned in this column in THE LANCET of July 9th, 1911, and at this stage of its progress some members moved that if unqualified practice is done away with then medical men should be liable to punishment if they declined to attend patients who sought their advice. The Government disapproved of this proposal, but declared itself willing to ask the opinion of the medical chambers on that question. Obviously the above amendment was only intended to delay the passing of the Bill, and its Parliamentary opponents have succeeded so far that it will have to be reintroduced for the third time in the next session. In view of the forthcoming Parliamentary election, the *Deutsche Medizinische Wochenschrift* advises medical men to ask candidates whether they are favourable to the suppression of unqualified medical practice, and to vote only for candidates giving an answer in the affirmative.

Dec. 31st, 1911.

NOTES FROM SOUTH AFRICA.

(FROM OUR OWN CORRESPONDENT.)

The South African Memorial to King Edward VII.

THE appeal for subscriptions to establish an Order of Nurses in South Africa in commemoration of King Edward VII. is not meeting with the success that was anticipated. Nevertheless, a considerable sum has been received, and it is confidently expected that the committee presided over by Lady Gladstone will be in a position soon to bring forward definite proposals. A congress of Boer women, known as the "Zuid Afrikaanse Vrouwen Federatie," was recently held in the Transvaal, and Lady Gladstone took the opportunity of writing to the congress with the view to obtain its support for the scheme. The matter was discussed, and a resolution passed which seems to indicate that racial feeling cannot be eliminated in South Africa, even in connexion with a project for the alleviation of human suffering. The resolution was as follows:—

> The Zuid Afrikaanse Vrouwen Federatie feels the great necessity of such an institution for South Africa, more especially with regard to the country districts, particularly residents on farms, and would gladly give their hearty support to the establishment thereof, provided such institution be established in a true South African spirit with a purely South African Board, and this to be confirmed by a constitution. The Federatie expects all officials and nurses of the institution to be South African (Dutch and English), i.e., either born in this country or who have resided here for a period of not less than five years, and who are fully conversant with the nature, manners, and languages of the people. The Federatie strongly objects to imported nurses, since, in the absence of such knowledge, the relation between nurse and probationer or patient will be strained, and result in mutual dissatisfaction. The Federatie further takes exception to the following clause in the proposed constitution: "District nursing will constitute a subordinate part in the duties of the nurses," being of the opinion that nursing in towns is fairly satisfactory, though badly neglected in the country districts, resulting in the loss of many a valuable life.

The inferences to be drawn from the resolution are, first, that the Federatie objects to members of the Governor-General's family or staff being connected with the scheme, for at present the only two persons connected therewith not born in the country, or not having resided therein for five years, are Lady Gladstone and the honorary secretary, who is a member of the Governor-General's staff; and, secondly, that English-trained nurses are not wanted. The committee's reply to the Federatie has not been published, and, indeed, it is difficult to see what suitable reply could be made without administering a severe snub. It is quite certain that it will be impossible to comply with the wishes of the Federatie, for it is doubtful whether sufficient South African-trained nurses can be secured. Apart from this, it is certain that not more than 20 per cent. of locally trained nurses are able to speak the Dutch language. The last portion of the resolution is apparently due to a misunderstanding as to the meaning of "district nursing," the Federatie having taking it to mean nursing in the rural as opposed to the urban areas. The Federatie would doubtless place a knowledge of the Dutch language amongst the members of the nursing staff above a knowledge of professional work. It is to be sincerely hoped that this resolution will not deter Lady Gladstone from pressing on with the good work.

Proposed Hospital Legislation.

In addressing the guests of the Mayor of Cape Town at a luncheon given to the delegates to the Congress of Cape Municipalities the other day, Sir Frederic de Waal foreshadowed a provincial ordinance to reform the system under which grants by the State have hitherto been made to the public hospitals, to rectify other abuses that require attention, and particularly to direct public charity into a more reasonable channel. Considerable curiosity has been caused by this announcement; it is, however, generally welcomed, as for a number of years past it has been recognised by the profession and by hospital managers that the present system of financing and managing the hospitals of the province is most unsatisfactory.

Friction at the Johannesburg Hospital.

Mr. Rissik, the administrator of the Transvaal, has at length stepped in and and appointed a Commission to inquire into the friction which exists between the board of the Johannesburg Hospital and the honorary medical staff, and to report what action is required in order to end an unseemly squabble drawn out over a long period. The Commissioners consist of Dr. F. A. Arnold, the medical officer of health of the Transvaal, Mr. H. J. Hofmeyr, ex-mayor of Johannesburg, and Mr. M. Nathan. It would have been fairer had the medical member been drawn from some other part of South Africa, for presumably General Smuts consulted Dr. Arnold, who was then medical officer of health of the Transvaal, before he inaugurated the system which has been at the root of the present trouble. However, the appointment of any Commission at all is welcomed, and the medical staff have elected a committee consisting of Dr. G. A. E. Murray, Dr. H. H. Currie, Dr. Bauman, and Dr. S. Y. van Niekerk to present their case to the Commission. The findings of the Commission will be awaited with no little interest.

Ward v. Hertzog.

The first stage has been reached in the law courts in connexion with the libel action brought by Dr. A. B. Ward, President of the Orange Free State Medical and Pharmacy Council, against General Hertzog, the Minister of Justice. The defendant excepted to the plaintiff's declaration regarding certain alleged defamatory words uttered by him at two public meetings, one held at Smithfield and the other at Fauresmith, as bad in law and as disclosing no cause of action, and the grounds upon which he based this exception are: (1) that there was nothing in the words alleged that showed that they referred to the plaintiff; and (2) that the words themselves were not defamatory. The Judge President in the course of a long summing up disallowed the exception with costs, but leave to appeal was granted.

The late Sir Charles O'Grady Gubbins.

On every side regrets and sympathy are expressed for the death of Sir Charles O'Grady Gubbins, which took place recently at Newcastle, in Natal. The newspapers unite in paying a tribute to the personal affection inspired by the deceased Minister, whose death removes one of the most genial and attractive personalities from the arena of South African politics. Whilst he had a distinguished professional career in Natal, it is since the war as a politician that perhaps he is best known. He held for several years up to the date of Union the portfolio of Colonial Secretary of Natal and Minister in Charge of Public Health. It was largely due to his influence that Natal agreed to enter the Union. Since Union he has been a Member of the Cabinet, but without portfolio. Some weeks ago he became ill—a victim to internal cancer, but throughout his illness he maintained up to the last, in spite of his sufferings, his cheery Irish wit and humour. During the week before his death he was

visited by numbers of friends, most of whom in the heyday of his activities were associated with him in the politics of the country. Amongst these may be mentioned Senator Hitchins, the Hon. A. T. Oliff (late Colonial Treasurer of Natal), Colonel Greene (late Minister of Railways), Sir Frederick Moor (late Prime Minister), and the Hon. T. Watt, while only a few days before his death General Botha, the Prime Minister, journeyed specially to Newcastle to bid him farewell. His death was characterised by uncomplaining resignation, and his genial personality and restraining influence will be sorely missed in the Cabinet and in the Senate. When Sir Charles took to politics the medical profession gained in Natal prestige it never had before, and by his death at the present critical juncture it has lost the friend on whom it felt it could most surely rely in the Union Cabinet. The deceased graduated in medicine in Dublin in 1878.

The Defence Bill.

The long-expected South African Defence Bill has been published. Provision is made for practically universal training of Europeans and the complete assumption locally of responsibility for the defence of South Africa, a responsibility hitherto shared to a large extent with the Imperial Government.

Town Planning Bill.

A Bill to regulate the conditions under which townships may be established upon public or private property has been published. This Bill is apparently to be administered by the Minister of Lands. It is an absurd little Bill, and doubtless will never become law in its present form. It entirely overlooks the real objects which should be aimed at in such a measure—namely, the possibility of a good water-supply, easy means of drainage, suitability of soil, climate, &c. The Bill seems essentially a measure that should be introduced and given effect to by those in charge of the Local Government and health of the country, and in the absence of a properly constituted Central Health Department would far better have been left to the various Provincial Governments.

Conference of Government Health Officers.

A conference was held recently at Durban between the medical officer of health for the Union and the assistant medical officers stationed at Cape Town and Durban respectively. It is understood that the object of the conference was to endeavour to secure uniformity of port health administration at the different ports of the Union. Already the all-time port health officer at Cape Town has been replaced by a part-time practitioner engaged in an extensive private practice, and it will be interesting to note whether any further steps are to be taken to demolish safeguards that were considered of paramount importance prior to Union in preserving the health of the people.

Obituary.

I have to record with regret the deaths of two well-known practitioners—namely, Dr. A. J. Westby of Beaufort West, and Dr. W. A. Rutherford of Mafeking. The former graduated at Trinity College, Dublin, in 1878. He was a well-known athlete, and played cricket for the Gentlemen of Ireland and for Trinity as a student; and also for Ireland in international Rugby football. In 1894 he settled in Beaufort West, and was appointed district surgeon in 1898, which post, in conjunction with that of medical officer of health to the municipality, he held till his death. Dr. Rutherford had for many years held the post of medical officer to the Bechuanaland Protectorate Police. Both these gentlemen will be sadly missed. A movement is on foot to endow a bed at the New Somerset Hospital in memory of Dr. Westby, and as a token of the respect felt for him in the district where he had worked so long.

Dec. 1st, 1911.

NOTES FROM INDIA.

(FROM OUR OWN CORRESPONDENT.)

Durbar Delhi.

YOUR readers, I am sure, would like to have a few words about the place where Their Imperial Majesties are staying at this date. I have called it Durbar Delhi. It was some eight months ago a vast desert outside the old Mogul city of Delhi. To-day it is a medley of a World's Fair Exhibition, Earl's Court Exhibition, Epsom Downs on Derby Day, with glimpses of South Kensington thrown in. Miles of broad avenues have been well laid out with roads rendered absolutely dustless by thorough oiling, and going off on either sides of these avenues are broad spaces occupied by the camps of Indian chiefs and Government officials. Every chief has had a large *shamiana* erected as a reception camp, which has been variously decorated and gorgeously furnished. I observed that the grounds around the various camps were beautifully laid out in gardens of flowers and lawns, which were freshly green, thanks to the numerous irrigation channels which were specially made. Electric lights, Chinese lanterns, fairy lamps, torches, &c., all added to the beauty of the newly made city of tents. Driving through the avenues and roads one passed all sorts and conditions of people of all the nations under the sun, and these were either on foot or in motor-cars of various size and shapes, phaeton gharries, tum-tums, landaus, tongas, brakes, ekkas, and country carts, not to speak of State carriages attended by bodyguards. The place was extremely well policed, well traversed by telegraph posts, amply provided with post-offices, specially protected against fire by tall fire-alarm stations at various parts overlooking the whole area and connected by telephone to each other, each of which station had a Merryweather fire-engine, and the whole area was traversed by a light railway with numerous little stations. The outstanding feature in all this well-organised planning was the absence of any urinals, latrines, and lavatories for European and educated Indian ladies and gentlemen. The place was besieged by thousands of European ladies and gentlemen for the day's outing, and many of these had awkwardly to seek the private bathroom tents of officers and others which were convenient at the time. There were heaps of latrines of a crude description for the native servants of the various camps and for the troops, and incinerators of an old pattern giving out their constant smoke were near, and most improperly protected against the view of the travellers in the light railway. When one states that the area of the camping grounds was nearly as large as London, and that practically the whole of this area was taken up by camps amply separated from each other by lawns, the reader may draw for himself the picture of the whole. The amphitheatre deserves mention, as it is the place from which the King-Emperor was proclaimed. It is about three times the size of the Herculanean amphitheatre, and though they had been working at it for months the absence of European supervision showed itself in the fact that up to the time for the proclamation the Indian in charge had not arranged the decorations and carpeting. But the city of tents was a sight worth seeing, and the like of it will not be seen for centuries.

Dec. 13th, 1911.

Medical News.

UNIVERSITY OF CAMBRIDGE.—At examinations for medical and surgical degrees held in Michaelmas term, 1911, the following candidates were successful:—

FIRST EXAMINATION (*October, 1911*).

Part I., Chemistry.—K. Atkin, Jesus; C. N. Carter and H. W. Featherstone, Trinity; L. S. Gatherwood, Sidney Sussex; A. A. Gemmell, King's; E. A. Grylls, Caius; N. S. Hewitt, Sidney Sussex; H. C. Hopkinson, Emmanuel; B. E. Jerwood, Sidney Sussex; C. M. Jones, Downing; A. H. Pearce, Clare; R. M. Savur, non-collegiate; C. G. Schurr, Caius; C. H. Vernon, St. John's; and V. Wilkinson, Christ's.

Part II., Physics.—K. Atkin, Jesus; C. N. Carter, Trinity; H. B. Dodwell, Emmanuel; J. S. Eloff, Trinity Hall; H. W. Featherstone, Trinity; E. A. Fiddian, Emmanuel; H. G. Galbraith, Caius; L. S. Gatherwood, Sidney Sussex; A. A. Gemmell, King's; E. A. Grylls, J. H. Gulliland, and W. F. T. Haultain, Caius; H. D. Y. Herries, Trinity; N. S. Hewitt, Sidney Sussex; H. C. Hopkinson, Emmanuel; B. E. Jerwood, Sidney Sussex; C. M. Jones, Downing; F. Moor, Trinity; E. S. Orme, Queen's; A. H. Pearce and C. G. Schurr, Caius; F. N. Sidebotham and R. O. Sternberg, Clare; B. H. Swift, Caius; C. H. Vernon, St. John's; G. H. Ward, Caius; and V. Wilkinson, Christ's.

Part III., Elementary Biology.—S. L. Bhatia, Peterhouse; H. Chell, St. John's; H. G. Galbraith, Caius; H. D. Y. Herries, Trinity; H. C. Hopkinson, Emmanuel; B. E. Jerwood, Sidney Sussex; C. G. Schurr, Caius; R. O. Sternberg, Clare; C. H. Vernon, St. John's; V. Wilkinson, Christ's; and A. G. P. Wills, Corpus Christi.

FIRST EXAMINATION (*December, 1911*).

Part I., Chemistry.—B. P. Ayre, Jesus; W. T. Beswick, Trinity

Hall; W. H. Blackburn, Christ's; C. V. Braimbridge, Downing; W. S. Brown, Caius; F. T. Burkitt, Christ's; G. E. Burton, Clare; A. E. Clark-Kennedy, Corpus Christi; L. Cunningham, Downing; I. de B. Daly and U. de B. Daly, Caius; J. C. Davies, Trinity; H. B. Dodwell, Emmanuel; C. G. Edwards, Caius; W. Fenwick and E. A. Fiddian, Emmanuel; H. G. Galbraith, J. H. Gulliland, and W. F. T. Haultain, Caius; A. D. Y. Herries, Trinity; S. C. Ho, St. John's; F. Moor, Trinity; E. S. Orme, Queen's; F. N. Sidebotham and R. O. Sternberg, Clare; B. H. Swift, Caius; G. B. Tait, King's; G. S. Taylor, Sidney Sussex; A. A. Thomas, Christ's; A. R. Walker, Emmanuel; G. H. Ward, Caius; W. T. Warwick, B.A., Emmanuel; H. G. E. Williams, King's; and R. A. Woodhouse and R. S. Woods, Downing.

Part II., Physics.—B. P. Ayre, Jesus; G. H. Bickley, Pembroke; J. F. J. Blanchard, Emmanuel; C. E. Bond, Caius; C. V. Braimbridge, Downing; W. S. Brown, Caius; F. T. Burkitt, Christ's; A. E. Clark-Kennedy, Corpus Christi; L. Cunningham, Downing; I. de B. Daly and U. de B. Daly, Caius; J. C. Davies, Trinity; S. R. E. Davies, Queens'; J. M. Downie, Christ's; W. L. Emtage, Queens'; W. Fenwick, Emmanuel; E. O. Goldsmith, Pembroke; E. W. Nichol, Caius; G. W. Pratt, St. John's; E. G. Snaith, Magdalene; G. B. Tait, King's; G. S. Taylor, Sidney Sussex; R. R. Traill, Trinity; A. C. Walker, Caius; A. R. Walker and W. T. Warwick, B.A., Emmanuel; R. C. P. Whitcombe and H. G. E. Williams, King's; and R. A. Woodhouse and R. S. Woods, Downing.

Part III., Elementary Biology.—C. G. Ainsworth, B.A., Downing; C. E. Bond and W. S. Brown, Caius; L. Cunningham, Downing; I. de B. Daly, Caius; H. W. Featherstone, Trinity; E. A. Fiddian, Emmanuel; L. S. Gathergood, Sidney Sussex; A. A. Gemmell, King's; W. F. T. Haultain, Caius; N. S. Hewitt, Sidney Sussex; E. W. Nichol, Caius; P. R. O'R. Phillips, Pembroke; F. N. Sidebotham, Clare; E. G. Snaith, Magdalene; B. H. Swift, Caius; R. R. Traill, Trinity; W. T. Warwick, B.A., Emmanuel; R. A. Woodhouse and R. S. Woods, Downing.

SECOND EXAMINATION (*October, 1911*).

Part II., Pharmacology and General Pathology.—W. G. Bigger, B.A., Queens'; H. J. Bower, B.A., Emmanuel; E. C. Bradford, B.A., Pembroke; J. Brewer, B.A., Emmanuel; I. M. Brown, B.A., Downing; E. H. P. Brunton, B.A., Trinity; L. B. Clarke, B.A., Emmanuel; G. M. Cowper, B.A., Trinity; J. L. Davies, Emmanuel; K. B. Dickson, B.A., Trinity; E. L. Dobson, B.A., King's; J. M. Evatt, B.A., Caius; W. D. Galloway, Clare; C. H. M. Gimlette, B.A., Caius; W. B. Gordon, B.A., Clare; C. H. Gow and N. Gray, B.A., Emmanuel; R. J. Hearn, B.A., Jesus; C. Helm, B.A., King's; A. M. Humphry, Trinity; B. L. Hutchence, B.A., Caius; R. W. P. Jackson, Clare; J. S. Kennedy, B.A., King's; S. D. Kilner, B.A., Emmanuel; H. H. Mathias, B.A., King's; J. B. Matthews, B.A., Clare; S. C. Miskin, Emmanuel; O. G. Morgan, B.A., Clare; W. New, B.A., Downing; A. V. O'Keeffe, Sidney Sussex; H. G. Oliver, B.A., R. A. Peters, B.A., and R. S. Scott, B.A., Caius; L. E. S. Sharp, Trinity; W. H. Shephard, B.A., Christ's; A. G. Shera, B.A., Emmanuel; L. R. Shore, B.A., St. John's; A. C. S. Smith, Trinity; W. S. Soden, B.A., St. John's; E. W. Todd, B.A., Trinity; R. L. M. Wallis, B.A., Downing; G. C. Wells-Cole, B.A., Caius; and F. A. Williamson, B.A., Queens'.

SECOND EXAMINATION (*December, 1911*).

Part I., Human Anatomy and Physiology.—J. C. Andrews, St. John's; G. L. Attwater, B.A., Pembroke; L. W. Batten, B.A., Sidney Sussex; G. A. G. Bonser, B.A., St. John's; J. C. Bramwell, Trinity; H. F. Brice-Smith, B.A., St. John's; W. E. H. Bull, B.A., Caius; H. R. Buttery, B.A., Christ's; A. B. Buxton, Trinity; M. Chadwick, B.A., St. John's; G. F. Clifton, B.A., Downing; G. R. E. Colquhoun, Trinity; A. C. M. Coxon, B.A., Magdalene; E. C. Cunnington, B.A., Corpus Christi; E. D. D. Davies, B.A., Christ's; A. N. Drury, Caius; H. Dunkerley, B.A., Downing; H. S. Evans, Trinity; E. Forrester-Paton and L. S. Fry, B.A., King's; H. A. C. Goodwin, B.A., Jesus; E. H. H. Granger, Clare; C. Grantham-Hill, Caius; W. T. Hare, B.A., Christ's; J. B. Hunter, St. John's; J. H. Jordan, B.A., Emmanuel; H. D. Lander, B.A., Caius; F. C. Lapage, B.A., King's; H. W. Leatham, Trinity; A. H. Little, Corpus Christi; H. D. McCall, B.A., Christ's; E. C. Malden, Caius; R. A. Mansell, Emmanuel; C. G. T. Mosse, Caius; D. F. A. Neilson and W. D. Newcomb, Trinity; W. Oats, B.A., Caius; H. B. Padwick, Emmanuel; H. R. Pollock, B.A., Trinity; S. R. Prall, Emmanuel; W. B. Purchase, B.A., Sidney Sussex; G. D. Read, B.A., St. John's; W. H. C. Romanis, Trinity; T. H. Somervell, Caius; G. E. Spicer, Trinity; and H. N. Stafford, A. R. S. Warden, and E. Watson-Williams, Caius.

THIRD EXAMINATION (*December, 1911*).

Part I., Pathology and Pharmacology.—M. Avent, B.A., Caius; H. M. McC. Coombs, B.A., Emmanuel; R. Gamlin, M.A., King's; H. K. Griffith, B.A., Trinity; A. N. Hodges, B.A., Queens'; R. M. Miller, M.A., Clare; C. G. H. Moore, B.A., Caius; R. S. Morshead, B.A., Trinity; G. M. Parker, B.A., Emmanuel; C. H. G. Philp, B.A., St. John's; and V. T. P. Webster, B.A., Emmanuel.

Part II., Surgery, Midwifery, and Medicine.—The following have now satisfied the examiners in all three sections:—L. A. P. Anderson, B.A., and J. H. Baldwin, M.A., Emmanuel; A. M. Bodkin, B.A., King's; W. J. Carr, B.A., Trinity; F. G. Chandler, B.A., Jesus; H. M. McC. Coombs, B.A., Emmanuel; W. D. Coplestone, M.A., Jesus; M. Donaldson, B.A., Trinity; C. A. Dottridge, B.A., Clare; E. A. Dyson, B.A., Jesus; A. G. Evans, B.A., Trinity; G. V. Fiddian, B.A., Downing; A. W. Gaye, B.A., and A. H. Gosse, M.A., Caius; H. K. Griffith, B.A., Trinity; A. E. Herman, B.A., King's; A. C. Jepson, B.A., Pembroke; G. G. Johnstone, B.A., King's; N. F. Lock, B.A., Caius; A. J. McNair, B.A., Emmanuel; J. C. Marklove, B.A., and R. A. Ramsay, B.A., Caius; W. D. Ross, B.A., King's; H. B. G. Russell, B.A., Sidney Sussex; W. A. Russell, B.A., Emmanuel; A. W. Stott, M.A., Trinity; and J. F. Taylor, B.A., H. Selwyn.

UNIVERSITY OF LONDON.—At examinations held in December, 1911, the following candidates were successful:—

M.D. EXAMINATION.

Branch I., Medicine.—Charles Anthony Basker, B.S., Guy's Hospital; Muriel Constance Bywaters, B.S., London (Royal Free Hospital) School of Medicine for Women; James Alfred Patrick Cullen, London Hospital; David Morgan Davies, B.S., Charing Cross Hospital; Ivor Jones Davies, B.S., St. Bartholomew's Hospital and University College, Cardiff; Trevor Berwyn Davies, B.S., University College Hospital; Gopal Vinayak Deshmukh, B.S., London Hospital; Edward Cecil Brearey Ibotson, B.S., and William Johnson, B.S., Guy's Hospital; Charlotte Alice King, B.S., London (Royal Free Hospital) School of Medicine for Women; Norman Claudius Lake, B.S., B.Sc. (University medal), Charing Cross Hospital; Elias Leopold Woolf Mandel, B.S., Guy's Hospital; and Horace Richard Wilson, B.S., University of Liverpool.

Branch II., Pathology.—Arthur Davies, B.S., Westminster Hospital and London School of Clinical Medicine; and Emily Helen Morris, B.S., London (Royal Free Hospital) School of Medicine for Women.

Branch IV., Midwifery and Diseases of Women.—James Bruce-Bays, M.D., B.S., St. Mary's Hospital; Gladys Margaret Campbell Dunbar, B.S., and Mabel Emily Gates, B.S., London (Royal Free Hospital) School of Medicine for Women; Herbert Cubitt Lucey, B.S., and William Henry Miller, B.S. (University medal), Guy's Hospital; Florence Muriel Morris, B.S., and Helen Irene Moss, B.S., London (Royal Free Hospital) School of Medicine for Women; and Alfred Geddes Tresidder, B.S., London Hospital.

Branch V., State Medicine.—Tom Shadick Higgins, B.S., B.Sc., University College Hospital.

Branch VI., Tropical Medicine.—Hugh Stannus Stannus (University medal), St. Thomas's Hospital and London School of Tropical Medicine.

M.S. EXAMINATION.

Branch I., Surgery.—Joseph Ebenezer Adams, St. Thomas's Hospital; Ernest William Charles Bradfield, St. Mary's and St. Bartholomew's Hospitals; Edward Kenneth Martin, University College Hospital; Harry Platt, Victoria University of Manchester; and David Ranken, University of Durham and St. Bartholomew's Hospital.

FIRST EXAMINATION FOR MEDICAL DEGREES.

Pass List—John Arnold Molony Alcock, Guy's Hospital; John Struan Alexander, University College; Hannah Katherine Alton, King's College; Colin Reinhardt Andrew, St. Paul's School; Keith Edward Attenborough, St. Mary's Hospital; Robert Townly Bailey, King's College; Geoffrey Thomas Baker, Middlesex Hospital; Charles Douglas Banes, Hartley University College; Walter Ralph Barrett, The Leys, Cambridge, and London Hospital; Edward Vincent Beaumont, St. Mary's Hospital; Joseph Warwick Bigger, Trinity College, Dublin; John Archibald Binning, University College; Constance Marie Briggs, University Tutorial College and Girton College; Harold George Broadbridge, London Hospital; Louis Abel Celestin, Royal College, Mauritius, and University Tutorial College; Julien David Constantin, St. Bartholomew's Hospital; Ronald Campbell Cooke, St. Thomas's Hospital; Dermot Dominic Randal Dale, St. Bartholomew's Hospital; Raghunath Ganesh Dani, University College; John Milton Davey, University of Leeds; *†Leonard Snowden Debenham, St. Paul's School and Guy's Hospital; Allen Roy Dingley, St. Bartholomew's Hospital; Charles Yarrow Eccles, St. Thomas's Hospital; *Stanley Harold Edgar, University College, Nottingham; Edwin Francis Fernando, University of Edinburgh and University College; Thomas Richard William Francis Figg-Hoblyn, Guy's Hospital; William Fletcher-Barrett, Birkbeck College; Marjorie Ellen Franklin, London (Royal Free Hospital) School of Medicine for Women; William Lawson Mabson Gabriel, University of Leeds; Aziz Girgis, London Hospital; Lorel Goodfellow, London (Royal Free Hospital) School of Medicine for Women; Hugh Morgan Gray and John William Hawksley Grice, Guy's Hospital; †¶Arnold Guy Harsant, St. Paul's School and London Hospital; Thomas Lowthian Heath, Guy's Hospital; Norman Hammond Hill, University of Leeds and St. Bartholomew's Hospital; Harry Mainwaring Holt, University of Leeds; George Philip Buckingham Huddy, London Hospital; David Bruce Stewart Jones, Charing Cross Hospital; Francis Reginald Law, University of Leeds; Herman Lewis, London Hospital; Katharine Lloyd, London (Royal Free Hospital) School of Medicine for Women; Douglas Loughlin and Sydney Alan Stormer Malkin, University College; Francis Keene Marriott, London Hospital; Arthur Harry Morris, University of Bristol; John Kerr Muir, Middlesex Hospital; John James Murphy, Sinnethamby Muttiah, and David Forsyth Parton, London Hospital; Eleanor Joyce Partridge, London (Royal Free Hospital) School of Medicine for Women; Robert Louis Portway, Guy's Hospital; Christopher George Schurr, Gonville and Caius College, Cambridge; Elisabeth Henrietta Schwab, Bedford College and London (Royal Free Hospital) School of Medicine for Women; Nirendra Mohan Sen-Gupta, London Hospital; Charles Ernest Alan Shepherd, King's College; Harold Gane Stormer, St. Thomas's Hospital; Raymond Stowers, University College; *Edward Cowper Tamplin, Pharmaceutical Society's School and St. Thomas's Hospital; Frederick Alfred Unwin, Birkbeck and King's Colleges; William John Vance and Samuel Vidot, Guy's Hospital; Josephine Leigh Hunt Wallace, University College; John Woollaston Wayte, St. Thomas's Hospital; William Ronald White-Cooper, St. Bartholomew's Hospital; and †George Cuthbert Nelson Younger, Middlesex Hospital.

* Awarded a mark of distinction in Inorganic Chemistry.

† Awarded a mark of distinction in Physics.

¶ Awarded a mark of distinction in General Biology.

N.B.—This list, published for the convenience of candidates, is issued subject to its approval by the Senate.

SOCIETY OF APOTHECARIES OF LONDON.—At examinations held in December, 1911, the following candidates passed in the subjects indicated:—

Surgery.—R. E. Clarke (Sections I. and II.), King's College Hospital; P. J. Montgomery (Sections I. and II.), Middlesex Hospital; and J. E. Taylor (Sections I. and II.), Leeds.

Medicine.—R. E. Clarke (Sections I. and II.) and D. E. S. Davies (Sections I. and II.), King's College Hospital; L. K. Edmeades (Section II.), Guy's Hospital; W. G. Fraser (Sections I. and II.), McGill; J. G. Lewis (Section I.), Newcastle; G. Meyer (Section I.), Graz; P. J. Montgomery (Sections I. and II.), Middlesex Hospital; F. C. Shone (Section II.), University College Hospital; and A. J. Tozer (Sections I. and II.), St. Mary's Hospital.

Forensic Medicine.—R. E. Clarke, King's College Hospital; H. Rimington, St. Bartholomew's Hospital; H. Robinson, Manchester; and H. G. Steel and A. J. Tozer, St. Mary's Hospital.

Midwifery.—E. M. Brand, Royal Free Hospital; R. E. Clarke, King's College Hospital; and H. Robinson, Manchester.

The Diploma of the Society was granted to the following candidates, entitling them to practise medicine, surgery, and midwifery:—R. E. Clarke, D. E. S. Davies, and P. J. Montgomery.

LONDON SCHOOL OF TROPICAL MEDICINE.—At the examination at the end of the thirty-seventh session (October–December, 1911) the following students were successful:—

*Captain W. D. Wright, I.M.S.; *C. F. Simpson; B. A. Percival (Colonial Service); W. Turner; E. J. Quirk (Colonial Service); J. W. Tomb; J. W. Thomson (Colonial Service); R. Semple (Colonial Service); M. Salih; L. Sammy; P. L. Craig; Miss L. E. Watney; R. Willan (Colonial Service); W. B. A. Moore (Colonial Service); E. J. Powell (Colonial Service); M. Graves (Colonial Service); W. Browne (Colonial Service); S. Goodbrand (Colonial Service); W. A. Nicholson (Colonial Service); H. Ostrom; Miss M. Pantin; R. Mugliston (Colonial Service); D. C. Robertson; G. Girgis El-daba; J. G. Morgan (Colonial Service); E. Ward (Colonial Service); C. H. Crooks; and N. Mahrus.

* With distinction.

VICTORIA UNIVERSITY OF MANCHESTER.—At examinations held in December, 1911, the following satisfied the examiners:—

FINAL M.B. AND CH.B. EXAMINATION.

K. D. Bean, L. W. Howlett, W. H. Laslett, S. E. McClatchey, Newton Matthews, H. G. Peake, James Walker, and William Warburton.

Obstetrics.—Frank Oppenheimer and R. P. Stewart.

Medicine.—Frank Oppenheimer.

Forensic Medicine and Toxicology.—F. S. Bedale, C. L. Graham, and T. H. Oliver.

THIRD M.B. EXAMINATION.

General Pathology and Morbid Anatomy.—Allan Barrett, *F. A. Bearn, J. G. Bennett, E. S. Brentnall, C. H. Crawshaw, H. N. Crossley, H. F. Hutchinson, Harold Kempsey, *T. P. Kilner, Eugene Leahy, C. G. Lees, F. L. Newton, T. P. Robertson, Harold Sheldon, *A. V. Stocks, Ernest Talbot, Cornelius Thompson, H. W. F. Williams, and G. W. Wood.

Pharmacology and Therapeutics and Hygiene.—F. C. Bentz, W. R. Blore, F. S. Charnock, H. C. Duffy, Harold Kempsey, Roderic McGill, Gladys H. Ramsden, H. A. Sandiford, F. K. Tomlinson, and C. H. Whittall.

Pharmacology and Therapeutics.—H. S. Gerrard.

SECOND M.B. AND CH.B. EXAMINATION.

‡Lily Allan, J. C. P. Bayley, Basil Browning, Frank Chadwick, J. W Craw, A. T. Gibb, ‡D. T. Harris, †J. R. Jagger, O. M. de Jong, J. D. Kenyon, E. A. Linell, †Clara A. Lomas, Kate K. May, Kamil Maximus, A. S. Paterson, W. A. Rogerson, J. R. B. Russell, E. H. Walker, and Henry Wilson.

FINAL B.D.S. EXAMINATION.

T. A. B. Corless.

DIPLOMA IN DENTISTRY (FINAL EXAMINATION).

Harry Lyth, L. W. Ward, and R. S. Ward.

Dental Prosthetics and Operative Dentistry.—Robert Ramsbottom and D. H. Sutton.

THIRD B.D.S. EXAMINATION.

C. F. Scott.

DIPLOMA IN DENTISTRY (THIRD EXAMINATION).

H. V. Brown, T. C. Cregan, H. O. Hatton, E. R. Lamb, Kate Latarche, D. J. O'Brien, Eric Renshaw, E. B. Ryley, Harold Walker, and Ernest Ward.

* Distinction in Pathology.
† Distinction in Anatomy.
‡ Distinction in Physiology.

UNIVERSITY OF LEEDS.—At examinations held recently the following candidates were successful:—

M.B. AND CH.B., SECOND EXAMINATION.

Part I., Anatomy and Physiology.—W. D. Anderton, S. N. Cohen, J. J. Digges La Touche, H. Foxton, F. King, W. H. Lonen, H. W. Robinson, H. Sochet, J. Wilkinson, and C. Wilson.

FINAL EXAMINATION.

Part I.—L. H. Butler, L. Dunbar, F. H. Kitson, K. Menon, J. J. Pickles, H. P. Shackleton, H. Sinson, and J. Wright.

DIPLOMA IN DENTAL SURGERY.

First Professional Examination.—J. E. Gill.

DIPLOMA IN PUBLIC HEALTH.

Part I.—G. O. Chambers and H. F. Horne.
Part II.—C. C. Pickles.

The degrees of Bachelor of Medicine and Bachelor of Surgery were conferred upon the following candidates:—

A. L. Bastable, *H. Caplan, J. B. T. Keswick, C. J. H. Little, G. E. Macvie, F. W. Nunneley, *W. Robinson, *J. B. Sinson, *J. P. Walker, and F. Wigglesworth.

* Second-class honours.

UNIVERSITY OF EDINBURGH.—At a graduation ceremonial held in the M'Ewan Hall on Dec. 20th, 1911, the following degrees were conferred:—

Doctor of Medicine.—Angus Graham Macdonald, James Forbes Mackay, and Hubert Andrew David Moore.

Bachelor of Medicine and Master in Surgery.—Edward Francis Coghlan.

Bachelor of Medicine and Bachelor of Surgery.—Joseph Reginald Aeria, John Edwin Allan, Albert Alexander Atkinson, Wallace Rutherford Bayne, Percy William Page Bedford, Delvine Bell, Robert Bertram Blair, Arthur Bloom, Niels Höegh Brönnum, Cecil Burnham, Robert Carlyle Carlyle, Alexander Bruce Cheves, Anna Chose, Guillaume Jacobus Cillie, Jacob David Malan Claassens, Disney Hubert Dusch Cran, Reginald Wynyard Davies, Robert Cecil Dickson, Alexander Erskine Drynan, William Ernest FitzGerald, Joseph Geoghegan, John Marchbank Gillespie, Charles William Graham, Gilbert Malise Graham, Malcolm Claud Russell Grahame, John Victor Livingstone Grant, James Gray, John William Gray, George Harrison, Arthur Christopher Heard, Kenneth Goodall Hearne, John Hewat, Janette Theresa Hill, Hugh James Hopps, Abraham Jassinowsky, Cicely Mary Kerby, Stefanus Gottfried Kriegler, Archibald Langwill, George Leggat Leggat, Thomas Lindsay, Patrick M'Cool, William Smail M'Laren, Archibald Browning Mitchell, Michael Joseph Paris, Randolph James Elliot Paterson, Bindeshwari Prasad, Maxwell Ramsay, Frederick William Rayment, Spence Daer Reid, Mossie Rougvie, Robert Glen Shaw, Leslie Henderson Skene, Sahib Singh Sokhey, Jacobus Johannes Stander, Henry Hay Stewart, Lawrence Ramsay Thomson, Frederick Livingstone Tulloch, Peter Vieyra, Charles Derwent Walker, Chung Ching Wang, Harry Whitaker, and Robert Burton Meikle Yates.

Diploma in Tropical Medicine and Hygiene.—John Alexander and Charles Edward Southon.

The Milner-Fothergill gold medal in Therapeutics has been awarded to Dr. John Tait.

Dr. George Foy has been elected an honorary member of the State Medical Association of Georgia, U.S.A.

DEATHS OF EMINENT FOREIGN MEDICAL MEN.—The deaths of the following eminent foreign medical men are announced:—Dr. B. Eads, formerly professor of anatomy and physiology in the Rush Medical College, Chicago.—Dr. H. C. Dalton, formerly professor of surgery in the Marion Sims College of Medicine, St. Louis.—Dr. N. R. Coleman, formerly professor of medicine in Ohio Medical College, Columbus.—Dr. Adam Szulislawski, honorary professor of ophthalmology in Lemberg, aged 46.—Dr. Karl Hörmann, *privat-docent* of gynæcology and *oberarzt* of the University Gynæcological Clinic in Munich.—Dr. P. Topinard, formerly professor in the Paris School of Anthropology.—Dr. E. Bornet, member of the Academy of Sciences, Paris.

UNIVERSITY OF LONDON: UNIVERSITY COLLEGE.—Work in the Faculty of Medical Sciences at University College will be resumed on Tuesday, Jan. 9th. The Provost will be in attendance on Monday, Jan. 8th, from 10 to 1 for the purpose of seeing students who desire to be enrolled. A course of Page-May Memorial Lectures will be delivered at University College by Dr. Henry Head, F.R.S., on Fridays at 5 P.M., beginning on Jan. 26th, and in connexion with the Francis Galton Laboratory for National Eugenics two lectures on Sir Francis Galton will be delivered by Professor Karl Pearson on Tuesdays, Jan. 30th and Feb. 6th, at 8.30 P.M., to be followed on subsequent Tuesdays by a course of six lectures on Some Problems of Eugenics. Full particulars of the above courses may be obtained on application to the secretary of University College.

CENTRAL MIDWIVES BOARD.—A meeting of the Central Midwives Board was held at Caxton House, Westminster, on Dec. 21st last, Sir Francis H. Champneys being in the chair. A letter was considered from the Local Government Board forwarding copies of extracts from the annual reports for the years 1909 and 1910 of the medical officer of health for the Wantage rural district calling attention to the inadequate supply of midwives in the district and the cause thereof. The Board directed that the Local Government Board be thanked for its letter. A letter was considered from

Mr. C. E. Paget, medical officer of health of Northamptonshire, reporting, in accordance with the provisions of Rule F.2, that he had advised a district nurse, who practises midwifery, to abstain from practice as a midwife for a period of 14 days after complete disinfection of herself, her clothing, and her appliances by reason of her having been in contact with a case of scarlet fever for a period of 18 days. Letters were also considered from Dr. W. J. Howarth, medical officer of health of Kent, reporting the suspension of one midwife for 11 days, and of another for 12 days, in similar circumstances. The Board directed that Mr. Paget and Dr. Howarth be thanked for their letters, and that they be informed that the Board approves of their action in the circumstances stated. A letter was considered from Dr. H. Handford, medical officer of health of Nottinghamshire, reporting the suspension of a midwife for 14 days. The Board directed that Dr. Handford be thanked for his letter, and that he be informed that the Board approves of his action in the circumstances stated. The secretary was further directed to communicate with the local supervising authority, pointing out that the matter appeared to disclose a *primâ facie* case of negligence and misconduct against the midwife, and asking the authority whether it so found, and to furnish evidence in support of the statements contained in the letter. A letter was considered from an approved midwife at Norwich requesting the Board to reconsider its decision not to recognise a local medical practitioner as a teacher because of the difficulty she experiences in obtaining theoretical instruction for her pupils from the recognised teachers of the Norwich Maternity Charity. The Board directed that the applicant be referred to the medical staff of the Norwich Maternity Charity, who have been recognised by the Board as teachers for the purpose of giving the necessary theoretical instruction to candidates proposing to enter for the Board's examinations from Norwich and the surrounding district. A letter was considered from the medical officer of health of Birkenhead calling attention to the difficulty of successfully prosecuting uncertified women practising as midwives owing to the difficulty of proving that the practice is for "gain" as required by Section 1 (2) of the Midwives Act, 1902. The Board directed that the medical officer of health of Birkenhead be thanked for his letter, and that a copy thereof be forwarded to the Privy Council. The secretary reported that a false and fraudulent certificate of birth had been tendered to him by a woman desirous of becoming a candidate for the examination of Dec. 15th. The Board directed that the papers be placed in the hands of the Director of Public Prosecutions, and that he be requested to take such action in the matter as he may think fit.

UNIVERSITY OF LIVERPOOL.—During the past session the students entering in the faculty of medicine have been divided as follows: 24 have entered for the degree of the University, 3 for degrees in other universities, 2 for the diploma of the London Conjoint Board, and 6 for those of other examining bodies. The entries of the last six years show the total number of students at present in the faculty as the largest reached—viz., 148, classified as follows:—First M.B., 27; Second M.B., 28; Final M.B., 48; First Conjoint, 2; Second Conjoint, 10; Final Conjoint, 8; other degrees and qualifications, 25; making a total of 148. Students other than undergraduates are as follows:—Research, 41; School of Hygiene, 31; Tropical School, 49; operative surgery, 3; dental, 64; making a total of 188. The total of all classes is 336. The examination results have been as follows: First M.B., Part I., 34 presented, 15 referred; Part. II., 28 presented, 5 referred. Second M.B., Part A, 18 presented, 4 referred; Part B, 10 presented, 3 referred. Final M.B., Part I., 24 presented, 5 referred; Part II., 27 presented, 5 referred; Part III., 26 presented, 12 referred. Four candidates submitted theses for the M.D., three successfully. Twenty-three candidates presented themselves for the Diploma in Public Health, of whom 9 were referred. Thirty-four candidates presented themselves for the Diploma in Tropical Medicine, of whom 5 were referred. The course of instruction in systematic surgery has for the first time been divided into general and regional. The medical faculty has devoted considerable attention to the proposal to institute degrees in hygiene. A diploma in ophthalmic surgery has been instituted for graduates, and ordinances and regulations relative to it have been approved by the Council and Senate.

BOOKS, ETC., RECEIVED.

ALLEN, GEORGE, AND COMPANY, LIMITED, Ruskin House, 44 & 45, Rathbone-place, London, W.

Psychology of the Religious Life. By George Malcolm Stratton, Sometime Professor of Experimental Psychology in the Johns Hopkins University; Professor of Psychology in the University of California. Price 10s. 6d. net.

The Life of John Ruskin. By E. T. Cook. In Two Volumes. Vol. I., 1819-1860. With Portraits. Vol. II., 1860-1900; with Portraits. Price 21s. net (two volumes).

BAILLIÈRE, TINDALL, AND COX, London.

A Dictionary of Medical Diagnosis. A Treatise on the Signs and Symptoms Observed in Diseased Conditions. For the Use of Medical Practitioners and Students. By Henry Lawrence McKisack, M.D., M.R.C.P. Lond., Physician to the Royal Victoria Hospital, Belfast. Second edition. Price 10s. 6d. net.

Gynæcological Nursing. By Arthur E. Giles, M.D., B.Sc., F.R.C.S., M.R.C.P., Surgeon to the Chelsea Hospital for Women, Gynæcologist to the Prince of Wales's General Hospital, Tottenham. Price 3s 6d. net.

Aids to Ophthalmology. By N. Bishop Harman, M.A., M.B. Cantab., F.R.C.S. Eng., Lecturer in Ophthalmology, West London Post-Graduate College. Fifth edition. Price, paper, 2s.; cloth, 2s. 6d. net.

Aids to Histology. By Alexander Goodall, M.D., F.R.C.P. Edin., Lecturer on Physiology, School of Medicine of the Royal Colleges, Examiner in Physiology to the Royal College of Physicians, Edinburgh. Price, paper, 2s.; cloth, 2s. 6d. net.

The Tightening of Loose Teeth. Some Technical Innovations. By Surgeon-Dentist Witkowski (Berlin). Translated from the first German edition by Edgar Neumann, M.D., and William M. Gabriel, M.R.C.S., L.D.S. Eng. Price 4s. net.

BLACK, A. AND C., 4, 5, and 6, Soho-square, London, W.

Who's Who. 1912. Price 10s. net.

Who's Who Year-book. 1912-1913. Price 1s. net.

The Writers' and Artists' Year-book. 1912. A Directory for Writers, Artists, and Photographers. Price 1s. net.

The Englishwoman's Year-Book and Directory, 1912. Edited by G. E. Mitton. Thirty-first Year of Issue. Price 2s. 6d. net.

CHATTO AND WINDUS, 111, St. Martin's-lane, London, W.C.

Herbert Fry's Royal Guide to the London Charities. Edited by John Lane. 1912. Price 1s. 6d.

CHURCHILL, J. AND A., London.

Essentials of Surface Anatomy. By Charles R. Whittaker, F.R.C.S.Ed., F.R.S.E., Senior Demonstrator of Anatomy, Surgeons' Hall, Edinburgh. Second edition, revised and enlarged. Price 3s. 6d. net.

Cocoa and Chocolate: Their Chemistry and Manufacture. By R. Whymper. Price 15s. net.

GRIFFIN, CHARLES, AND COMPANY, LIMITED, Exeter-street, Strand, London, W.C.

The Year-book of the Scientific and Learned Societies of Great Britain and Ireland. A Record of the Work done in Science, Literature, and Art during the Session 1910-1911 by numerous Societies and Government Institutions. Compiled from Official Sources. Twenty-eighth Annual Issue. 1911. Price 7s. 6d.

LIPPINCOTT (J. B.) COMPANY, Philadelphia and London.

A Handbook of Medical Diagnosis. For the Use of Practitioners and Students. By J. C. Wilson, A.M., M.D., Professor of the Practice of Medicine and Clinical Medicine in the Jefferson Medical College and Physician to its Hospital. Price 25s. net.

Clinical Diagnosis. A Text-book of Clinical Microscopy and Clinical Chemistry for Medical Students, Laboratory Workers, and Practitioners of Medicine. By Charles Phillips Emerson, A.B., M.D., late Resident Physician, the Johns Hopkins Hospital, and Associate in Medicine, the John Hopkins University; Professor of Medicine, Indiana University School of Medicine. Third edition. Price 21s. net.

The Parasitic Amœbæ of Man. By Charles F. Craig, M.D., Captain, Medical Corps, United States Army. From the Bacteriological Laboratory of the Army Medical School, Washington, D.C., and the Rockefeller Institute for Medical Research, New York City. Published with the Authority of the Surgeon-General of the United States Army. Price 10s. 6d. net.

International Clinics. Edited by Henry W. Cattell, A.M., M.D., Philadelphia, U.S.A., with Collaboration. Volume III. Twenty first Series. 1911. Price not stated.

SAUNDERS (W. B.) COMPANY, London and Philadelphia.

Collected Papers by the Staff of St. Mary's Hospital Mayo Clinic, Rochester, Minnesota. 1910. Price 24s. net.

Applied Anatomy and Oral Surgery. For Dental Students. By Robert H. Ivy, M.D., D.D.S., Assistant Oral Surgeon at the Philadelphia General Hospital; Assistant Surgeon, Out-patient Department, University Hospital, Philadelphia. Price 6s. 6d. net.

The Pocket Medical Dictionary. Edited by W. A. Newman Dorland, A.M., M.D., Member of Committee on Nomenclature and Classification of Diseases, of the American Medical Association; Professor of Obstetrics, Loyola University, Chicago. Seventh edition, revised and enlarged. Price, flexible leather, 5s. net; with thumb index, 6s. net.

Appointments.

Successful applicants for Vacancies, Secretaries of Public Institutions, and others possessing information suitable for this column, are invited to forward to THE LANCET *Office, directed to the Sub-Editor, not later than 9 o'clock on the Thursday morning of each week, such information for gratuitous publication.*

ASHLEY, MARTIN, M.B. Lond., L.R.C.P. Lond., M.R.C.S., D.P.H. Cantab., has been appointed *pro tem.* Medical Officer of Health by the Chipping Sodbury (Gloucestershire) Rural District Council.

BARCLAY, A. E., B.C. Cantab., has been reappointed Medical Officer for the Radiography and Electricity Department at the Manchester Royal Infirmary.

COOGAN, T., M.B., Ch.B. Vict., has been reappointed Fifth Anæsthetist at the Manchester Royal Infirmary.

DEANS, R. H., M.B., Ch.B. Glasg., has been appointed Second Assistant Medical Officer at Govan District Asylum, Hawkhead, near Paisley.

LOVEDAY, G. F., M.B., B.C. Cantab., has been reappointed Director of the Clinical Laboratory at the Manchester Royal Infirmary.

LUSK, S. F., M.B., M.S. Edin., has been appointed Dispensary Medical Officer of Loughbrickland, County Down.

WEBB, FRANK, L.R.C.P. Lond., M.R.C.S., has been appointed Medical Officer of Health of Leigh, Lancs.

WILSON, S. R., M.B., B.S. Lond., F.R.C.S. Edin., has been reappointed Second Anæsthetist at the Manchester Royal Infirmary.

WYNNE, F. E., M.B., B.Ch. Dub., has been appointed Medical Officer of Health of Wigan.

Vacancies.

For further information regarding each vacancy reference should be made to the advertisement (see Index).

BETHNAL GREEN INFIRMARY, Cambridge Heath, E.—Assistant Medical Officer. Salary at rate of £100 per annum, with apartments, board, and washing.

BIRKENHEAD BOROUGH HOSPITAL.—Junior Resident House Surgeon. Salary £80 per annum, with board and washing.

BRIGHTON, ROYAL SUSSEX COUNTY HOSPITAL.—Assistant House Surgeon, unmarried. Salary £80 per annum, with apartments, board, and laundry.

BRISTOL ROYAL INFIRMARY.—Dental House Surgeon. Salary £100 per annum, with apartments, board, and laundry.

CAMBRIDGE, ADDENBROOKE'S HOSPITAL.—Second House Surgeon. Salary £80 per annum, with board, residence, and laundry.

CITY OF LONDON LYING-IN HOSPITAL, City-road, E.C.—Resident Medical Officer. Salary at rate of £50 per annum, with board, residence, and washing.

CROYDON MENTAL HOSPITAL, Upper Warlingham, Surrey.—Pathologist and Third Assistant Medical Officer. Salary £200 per annum, with quarters, board, and laundry.

DONCASTER, ROYAL INFIRMARY AND DISPENSARY.—Assistant House Surgeon. Salary £80 per annum, with board, residence, and laundry.

GENERAL POST OFFICE.—Assistant to Medical Officers at Headquarters. Salary £180 per annum. Also Female Assistant Medical Officer at Headquarters. Salary £180 per annum.

GERMAN HOSPITAL, Dalston.—Honorary Assistant Physician.

GUILDFORD, ROYAL SURREY COUNTY HOSPITAL.—Assistant House Surgeon. Salary £75 per annum, with board, residence, and laundry.

HELLINGLY, EAST SUSSEX COUNTY ASYLUM.—Third Assistant Medical Officer, unmarried. Salary £160 per annum, with board, apartments, washing, and attendance.

HOSPITAL FOR CONSUMPTION AND DISEASES OF THE CHEST, Brompton.—House Physician for six months. Salary 30 guineas.

HULL ROYAL INFIRMARY.—Senior Assistant House Surgeon. Salary £100 per annum, with board and lodging. Also Assistant House Surgeon. Salary at rate of £60 per annum, with board and lodging.

ITALIAN HOSPITAL, Queen-square, London, W.C.—Honorary Surgeon. Also Honorary Assistant Surgeon.

LARBERT, STIRLING DISTRICT ASYLUM.—Second Assistant Medical Officer. Salary £130 per annum, with board, &c.

LEAMINGTON SPA, WARNEFORD, LEAMINGTON, AND SOUTH WARWICKSHIRE GENERAL HOSPITAL.—Junior Resident Medical Officer. Salary £85 per annum, with residence, board, and laundry.

LEICESTER INFIRMARY.—Assistant House Physician for six months. Salary at rate of £80 per annum, with board, apartments, and washing.

LINCOLN COUNTY HOSPITAL.—Junior House Surgeon, unmarried, for six months. Salary at rate of £100 per annum, with board, residence, and washing.

LONDON FEVER HOSPITAL, Liverpool-road, N.—Assistant Resident Medical Officer. Salary £150 per annum, with residence and board.

LONDON TEMPERANCE HOSPITAL.—Assistant House Surgeon for six months. Salary at rate of £105 per annum. Also Medical Registrar. Salary at rate of 40 guineas per annum.

MANCHESTER, ANCOATS HOSPITAL.—Assistant House Surgeon. Salary £70 per annum, with board, residence, &c.

MANCHESTER, MONSALL FEVER HOSPITAL.—Third Medical Assistant. Salary £100 per annum, with board, lodging, and washing.

MANCHESTER ROYAL INFIRMARY.—Assistant Surgical Officer in Aural Department. Salary £52 10*s.* per annum.

METROPOLITAN HOSPITAL, Kingsland-road, N.E.—House Surgeon and Assistant House Surgeon for six months. Salary of former at rate of £60 per annum and of latter at rate of £40 per annum, with board and washing.

MIDDLESEX HOSPITAL, W.—Assistant Medical Officer to the Electrical Department. Salary £50 per annum.

MILLER GENERAL HOSPITAL FOR SOUTH-EAST LONDON, Greenwich-road, S.E.—Junior House Surgeon. Salary at rate of £85 per annum, with board, attendance, and laundry.

MOUNT VERNON HOSPITAL FOR CONSUMPTION AND DISEASES OF THE CHEST, Hampstead and Northwood.—House Physician at Northwood. Salary £75 per annum, with board, residence, and washing.

NEWCASTLE-ON-TYNE HOSPITAL FOR SICK CHILDREN.—Honorary Assistant Surgeon.

NORTHAMPTON GENERAL HOSPITAL.—House Surgeon. Salary £90 per annum, with apartments, board, washing, and attendance.

OXFORD COUNTY ASYLUM, Littlemore, near Oxford.—Junior Assistant Medical Officer, unmarried. Salary £150 per annum, with quarters, board, and laundry.

PADDINGTON GREEN CHILDREN'S HOSPITAL, London, W.—Honorary Physician to Out-patients.

QUEEN'S HOSPITAL FOR CHILDREN, Hackney-road, Bethnal Green, E.—Surgeon-in-Charge of Ear, Nose, and Throat Department.

ROYAL FREE HOSPITAL, Gray's Inn-road, W.C.—Female Curator. Salary £50 per annum.

ROYAL LONDON OPHTHALMIC HOSPITAL, City-road, E.C.—Senior House Surgeon. Salary at rate of £100 per annum, with board and residence.

ST. BARTHOLOMEW'S HOSPITAL.—Chief Assistants and Clinical Assistants to Aural Out-patient Department.

SHEFFIELD ROYAL INFIRMARY.—Junior Resident Medical Officer. Salary £60 per annum.

SOUTH SHIELDS, INGHAM INFIRMARY AND SOUTH SHIELDS AND WESTOE DISPENSARY.—Senior and Junior House Surgeon. Salary £100 and £90 per annum respectively, with residence, board, and washing.

SOUTHWARK UNION INFIRMARY, East Dulwich-grove, S.E.—Second Assistant Medical Officer. Also Third Assistant Medical Officer. Salary £120 per annum in each case, with board, lodging, and washing.

STAFFORD, COTON HILL LUNATIC ASYLUM.—Assistant Medical Officer. Salary £125 per annum, with residence, board, and laundry.

TOOTING, S.W., FOUNTAIN ASYLUM.—Second Assistant Medical Officer, unmarried. Salary £180 per annum, with board, lodging, and washing.

VICTORIA HOSPITAL FOR CHILDREN, Tite-street, Chelsea, S.W.—House Physician and House Surgeon for six months. Salary £40, with board, lodging, and laundry.

WEST HAM AND EASTERN GENERAL HOSPITAL, Stratford.—Junior House Surgeon. Salary at rate of £75 per annum, with board, residence, and washing.

WEST LONDON HOSPITAL, Hammersmith-road, W.—Assistant Anæsthetist.

WESTON-SUPER-MARE HOSPITAL.—House Surgeon, unmarried. Salary £100 per annum, with board and residence.

WINCHESTER, ROYAL HAMPSHIRE COUNTY HOSPITAL.—House Physician. Salary £80 per annum.

WOLVERHAMPTON AND STAFFORDSHIRE GENERAL HOSPITAL.—House Surgeon for six months. Salary £80 per annum, with board, rooms, and laundry. Also Resident Medical Officer. Salary at rate of £100 per annum, with board, rooms, and laundry.

THE Chief Inspector of Factories, Home Office, London, S.W., gives notice of vacancies as Certifying Surgeons under the Factory and Workshop Act at Kelvedon, in the county of Essex; at St. Austell, in the county of Cornwall; and at Clara, in King's County.

Births, Marriages, and Deaths.

BIRTHS.

ALLEN.—On Jan. 1st, at Harley-street, London, W., to Dr. and Mrs. R. W. Allen, a daughter.

ATKINS.—On Dec. 27th, 1911, at Loughborough, Leicestershire, the wife of Frank Robert Lowth Atkins, M.R.C.S., L.R.C.P., of a daughter.

DAVIS.—On Dec. 27th, 1911, at C. M. S., Amritsar, the wife of Rev. G. Brocklesby Davis, M.D., of a son.

ELLIS.—On Dec. 28th, 1911, at Bonchurch, I.W., the wife of Francis Heygate Ellis, M.R.C.S., L.R.C.P. Lond., of Salisbury, Rhodesia, of a son.

GRAHAM.—On Dec. 26th, 1911, at "The Cottage," Porchester-road, Newbury, to S. D. Graham, M.B., and Agnes M. Graham, twin daughters.

MARRIAGES.

PINCHING—WOODWARD.—On Dec. 27th, 1911, at St. Cuthbert's, Kensington, William Guy Pinching, M.R.C.S., L.R.C.P., to Dorothy Mary, second daughter of the late Harry Woodward, Solicitor, and Mrs. Woodward.

DEATHS.

AITCHISON.—On Dec. 31st, 1911, at Drayton-terrace, South Kensington, after a short illness, Charles Umpherston Aitchison, M.D., aged 36.

WOLFF.—On Dec. 26th, 1911, at Harborne-road, Edgbaston, Birmingham, Alfred Wolff, M.R.C.S., in his 59th year.

N.B.—A fee of 5s. is charged for the insertion of Notices of Births, Marriages, and Deaths.

Notes, Short Comments, and Answers to Correspondents.

TRYPANOSOMIASIS IN NYASALAND.

ACCORDING to the "Diary" issued by Dr. A. H. Barclay, acting principal medical officer of the Nyasaland Protectorate (Part XV., Oct. 12th, 1911), the total number of cases of trypanosomiasis in which trypanosomes had been found was 55, of which 9 were then under treatment at Ngani Camp. There were no admissions to the camp during August and September. One case has died at the camp since the last report. The remedies tried have been salvarsan, soamin, and atoxyl, the latter alone and in combination with hydrarg. perchlor., but no case has shown any improvement under treatment, so that the patients are beginning to regard death as the result of treatment rather than of disease, and are becoming very refractory to the intramuscular injections. No arsenophenylglycin has so far been available for trial. The general conclusion seems to be that no treatment is of any avail in cases which have reached the cachectic stage, though atoxyl in conjunction with other drugs still offers some hope of ultimate success. In a paper received from Dr. H. S. Stannus, of the Nyasaland Protectorate, and Dr. Warrington Yorke, of Liverpool, on the Pathogenic Agent in a Case of Human Trypanosomiasis in Nyasaland, these gentlemen conclude that the trypanosome concerned is the T. rhodesiense, probably a new species, and that as Glossina palpalis has not been found in Nyasaland, some other insect, possibly Glossina morsitans, is the carrier, which is supported by the experimental infection of six monkeys in Tanganyika. No transmission experiments have been tried at this station. A site for the Royal Societies' Commission laboratories has been selected on Kasu Hill, and buildings are in process of erection under Captain A. E. Hamerton, D.S.O., R.A.M.C.

HOT.

To the Editor of THE LANCET.

DEAR SIR,—Kindly publish what I saw in print some time ago.

"*Sure Cure for Cold and Influenza.*—½ or ¼ teaspoonful cayenne pepper in a glass hot milk drunk as hot as sufferer can bear (Personally tried and found successful with cold. Have not since I saw it had influenza to try it with) and make above public in America and elsewhere *as it is every one's business to save valuable human life at once.*"

Yours, &c.,
ALTRUIST.

Dec. 26th, 1911.

MR. DENMAN ON REVOLVER CARRYING.

Mr. Denman had recently before him at Marborough-street police court the case of a foreigner described as a tailor with an address in Whitechapel, who on being arrested for an offence in Hyde Park, was found to be armed with a loaded revolver. Mr. Denman said, "Ever since I became a magistrate I have been a voice crying in the wilderness, and I hope that some day a Bill of five lines will be introduced making the carrying of firearms an offence which can be summarily dealt with. As it is the cumbersome proceeding of a solemn meeting of the London County Council has to be gone through before a prosecution can take place. ..... I hope that a private Member will introduce a Bill to the effect that if any person is found carrying a revolver he will be liable to fine or imprisonment." What Mr. Denman has cried in the wilderness THE LANCET has reiterated in print, but there is little or no chance of a private Member of Parliament, as he suggests, being able to get a Bill of such a nature through in the present circumstances of legislation. It is a matter for the Home Secretary to undertake, and the police might then be trusted to render the law effective by laying their hands upon plenty of criminals who habitually go about armed. The prosecution by the County Council referred to above is, of course, for the offence of carrying firearms without a gun licence.

INCOME-TAX DEMANDS.

To the Editor of THE LANCET.

SIR,—The collectors' demand notes which are annually thrust upon the attention of taxpayers at a time when they have so many other claims upon their pockets are now either delivered or in course of delivery.

While it may be too late to get the amount of the gross assessment reduced your readers should give the following points their careful attention and see to it:—

1. That they have been allowed the full statutory abatement by reason o their incomes not exceeding £700.

2. That in addition to the usual abatement they have been allowed off the assessment £10 for each child under 16 by reason of their income not exceeding £500.

3. That they have been allowed for life assurance premiums.

4. That in the case of incomes over £5000 they are only charged super-tax upon the amount of the income in excess of £3000.

5. That they understand what they are paying, and if they have paid too much take steps at once to obtain repayment.

Claims for repayment can now in many cases be made for three or even four years.—We are, Sir, yours faithfully,

THE TAX ADJUSTMENT (SCARFF'S) AGENCY.

171, Strand, London, W.C.

COBRA VENOM: A QUERY.

To the Editor of THE LANCET.

SIR,—We would be greatly obliged if any of your readers could tell us the name of the scientific laboratory or philanthropic society that has offered a prize or reward to the person who should discover an antidote for the "cobra" bite. A short while back a notice appeared in an English paper to the effect that a prize was offered for the discovery of such an antidote. We are, Sir, yours faithfully,

GRACE BROTHERS & Co., LTD.

144, Leadenhall-street, London, E.C., Dec. 27th, 1911.

A PORTABLE SPITTOON.

Messrs. W. Martindale, of New Cavendish-street, London, W., have placed on the market a portable spittoon of new design which has several features to commend it. The vessel is made of polished white metal, and measures 3 inches in depth and 2½ inches and 1 inch respectively across the long and short axes of the ends. The lid is kept in place by a simple screw adjustment, which forces a rubber washer against the rim of the spittoon, thus making the vessel watertight. Internally there is the usual funnel-shaped receptacle. There is nothing unsightly in the appearance of the spittoon, which when closed looks something like a rather thick cigarette case. The price is 10*s.* 6*d.*

TRAUMA AND APPENDICITIS.

Dr. H. A. Ballance (Norwich) inquires for references to monographs, contributions to journals, &c., upon the subject of trauma as a cause of appendicitis. He does not want references to text-books, and he is already aware of the contribution in the *Annals of Surgery*, 1901, Vol. XXXIII., p. 387, by Robinson, of Chicago.

WITH reference to a paragraph in THE LANCET of Dec. 9th, 1911, p. 1665, Mr. Frederick Dixon writes to say that the Christian Science Home in New York, referred to by our local correspondent, is a private enterprise for which the Christian Science Church assumes no responsibility.

COMMUNICATIONS not noticed in our present issue will receive attention in our next.

A DIARY OF CONGRESSES.

WE shall publish this diary from time to time that our readers may have under their hands the dates of the approaching scientific Congresses. It is unnecessary to issue the lists of all these functions week by week, and we propose to make only such gatherings as will occur in the immediate future the subject of regular announcement. The following Congresses, Conferences, and Exhibitions are announced for the next few months:—

Jan. 3rd–10th (University of St. Petersburg).—Second Congress of Pure and Applied Chemistry and Physics (in honour of the late Dr. I. Mendeléef).
,, 20th–27th (Hong-Kong).—Second Biennial Congress of the Far Eastern Association of Tropical Medicine.
Feb. 13th–14th (London).—Central Poor-Law Conference.
March 7th–11th (Berlin).—Thirty-third Balneological Con ress.
March 23rd–April 4th (London, Royal Agricultural Hall).—International Smoke Abatement Exhibition.
,, (London).—First Congress of Pure Food and Health Society of Great Britain.
April 1st–7th (Tunis).—Twenty-second Congress of French-speaking Alienists and Neurologists.
,, 8th–13th (Rome).—Seventh International Congress of Dermatology and Syphilology.
,, 8th–15th (Johannesburg).—Thirteenth South African Medical Congress.
,, 14th–20th (Rome).—Seventh International Congress on Tuberculosis.
,, 15th–18th (Wiesbaden).—Twenty-ninth German Congress for Internal Medicine.
,, (Giessen).—Congress on Study of Families, Inheritance, and Race Hygiene.
Spring (London).—Second Optical Convention.

The following journals, magazines, &c., have been received:—Sei-i-Kwai Medical Journal, Practitioners' Journal (Russian), L'Hygiène, The Child, Annales de l'Institut Pasteur, Archives de l'Institut Pasteur de Tunis, Bulletin de la Société de l'Internat des Hôpitaux de Paris, Archives de Médecine et Pharmacie Navales, New Zealand Medical Journal, Canadian Medical Association Journal, Archives of Internal Medicine, Yellow Fever Bureau Bulletin, Kala-Azar Bulletin, Journal of Nervous and Mental Diseases, Journal of Comparative Pathology and Therapeutics, British Journal of Dermatology, Journal of the Royal Sanitary Institute, Edinburgh Medical Journal, Journal of the London School of Tropical Medicine, Transvaal Medical Journal, Hospital Assistant (India), South African Medical Record, British Journal of Inebriety, Australian Medical Gazette.

Medical Diary for the ensuing Week.

SOCIETIES.

ROYAL SOCIETY OF MEDICINE, 15, Cavendish-square, W. (temporary address during building of new house).

TUESDAY.

SURGICAL SECTION (Hon. Secretaries—L. A. Dunn, James Berry): at 5.30 P.M.

Debate:

On the Talma-Morison Operation, opened by Mr. Rutherford Morison (Newcastle). The following will take part in the Discussion: Mr. Sampson Handley, Mr. W. G. Spencer, Mr. Waring, Dr. Drummond, Dr. Hale-White, Dr. Rolleston, Dr. Essex Wynter, and others.

FRIDAY.

LARYNGOLOGICAL SECTION (Hon. Secretaries—W. H. Kelson, Dan McKenzie), at 11, Chandos-street, W.: at 4.30 P.M.

Cases

Will be shown by Dr. Wylie, Dr. Kelson, and others.

GENERAL MEETING OF FELLOWS at 4.45 P.M.

Election of Candidates for Fellowship.

CLINICAL SECTION (Hon. Secretaries: James Galloway, Charles H. Fagge): at 8.30 P.M.

Cases:

Dr. F. Parkes Weber: Case of Recurrent Aphasia with High Blood Pressure.

Dr. H. E. Symes-Thompson: Congenital Pulmonary Stenosis in a Woman aged 34.

And other Cases.

Paper:

Dr. H. C. Cameron: The Relative Value of Early and Delayed Operation in Pneumococcal Peritonitis.

MEDICAL SOCIETY OF LONDON, 11, Chandos-street, Cavendish-square, W.

MONDAY.—8.30 P.M., Dr. H. Orton: The X Ray Diagnosis of Pulmonary Disease (illustrated by the epidiascope).

SOCIETY FOR THE STUDY OF INEBRIETY, Rooms of the Medical Society of London, 11, Chandos-street, Cavendish-square, W.

TUESDAY.—3.30 P.M., Council Meeting. 4 P.M., Discussion on Alcoholism and Problems of Growth and Development (opened by Mr. H. Gilford).

UNITED SERVICES MEDICAL SOCIETY, Royal Army Medical College, Grosvenor-road, S.W.

WEDNESDAY.—5 P.M., Lieut.-Col. C. H. Burtchaell, R.A.M.C.: The Army Medical Service with Lord Methuen's Force during the Advance on Kimberley in 1899, with Reference to the Present Organisation of the Medical Service in War.

HUNTERIAN SOCIETY, London Institution, Finsbury-circus, E.C.

WEDNESDAY.—8.30 P.M., Council Meeting. 9 P.M., Mr. C. A. Ballance: The Science and Art of Surgery in Certain Emergencies.

WIMBLEDON AND DISTRICT MEDICAL SOCIETY, Johnston's Rooms, 6, Broadway, Wimbledon.

FRIDAY.—9 P.M., Member's Clinical Evening.

LECTURES, ADDRESSES, DEMONSTRATIONS, &c.

MEDICAL GRADUATES' COLLEGE AND POLYCLINIC, 22, Chenies-street, W.C.

MONDAY.—4 P.M., Dr. J. Galloway: Clinique (Skin). 5.15 P.M. Lecture:—Dr. E. F. Bashford: The Present Aspects of Some Cancer Problems (with lantern demonstration).

TUESDAY.—4 P.M., Dr. J. Taylor: Clinique (Medical). 5.15 P.M., Lecture:—Dr. J. Morrison: Some Difficulties in Labour during the Second Stage.

WEDNESDAY.—4 P.M., Mr. A. H. Tubby: Clinique (Surgical). 5.15 P.M., Lecture:—Mr. J. S. Joly: The Diagnosis and Treatment of Cancer of the Prostate.

THURSDAY.—4 P.M., Mr. P. M. Heath: Clinique (Surgical). 5.15 P.M., Lecture:—Dr. C. O. Hawthorne: Hemianopsia.

FRIDAY.—4 P.M., Mr. K. Campbell: Clinique (Eye).

POST-GRADUATE COLLEGE, West London Hospital, Hammersmith-road, W.

MONDAY.—10.30 A.M., Surgical Registrar: Demonstration of Cases in Wards. Dr. Simson: Diseases of Women. 12 noon, Dr. Bernstein: Pathological Demonstration. 2 P.M., Medical and Surgical Clinics. X Rays. Operations. 2.30 P.M., Mr. Dunn: Diseases of the Eye. 5 P.M., Lecture:—Mr. Bidwell: Treatment of Cancer of the Colon.

TUESDAY.—10 A.M., Dr. Robinson: Gynæcological Operations. 11.30 A.M., Mr. Etherington-Smith: Demonstration of Minor Operations. 2 P.M., Medical and Surgical Clinics. X Rays. Operations. Dr. Davis: Diseases of the Throat, Nose, and Ear. 2.30 P.M., Dr. Abraham: Diseases of the Skin. 5 P.M., Lecture:—Dr. Davis: Diseases of the Ear. (Lecture I.)

WEDNESDAY.—10 A.M., Dr. Saunders: Diseases of Children. Dr. Davis: Operations of the Throat, Nose, and Ear. 10.30 A.M., Surgical Registrar: Demonstration of Cases in Wards. 2 P.M., Medical and Surgical Clinics. X Rays. Operations. Mr. B. Harman: Diseases of the Eye. 2.30 P.M., Dr. Simson: Diseases of Women. 5 P.M., Lecture:—Mr. Ll. Williams: Principles of Treatment of Diseases of Children's Teeth.

THURSDAY.—10 A.M., Dr. Simson: Gynæcological Demonstration. 12.15 P.M., Lecture:—Dr. G. Stewart: Practical Medicine. 2 P.M., Medical and Surgical Clinics. X Rays. Operations. 2.30 P.M., Mr. Dunn: Diseases of the Eye. 5 P.M., Lecture:—Mr. Ll. Williams: Causes of Sepsis of the Mouth.

FRIDAY.—10 A.M., Dr. Robinson: Gynæcological Operations. 2 P.M., Medical and Surgical Clinics. X Rays. Operations. Dr. Davis: Diseases of the Throat, Nose, and Ear. 2.30 P.M., Dr. Abraham: Diseases of the Skin. 5 P.M., Lecture:—Mr. Pritchard: Clinical Pathology.

SATURDAY.—10 A.M., Medical Registrar: Demonstration of Cases in Wards. Dr. Saunders: Diseases of Children. Dr. Davis: Operations of the Throat, Nose, and Ear. Mr. Bishop Harman: Diseases of the Eye. 2 P.M., Medical and Surgical Clinics. X Rays. Operations.

LONDON SCHOOL OF CLINICAL MEDICINE, Dreadnought Hospital, Greenwich.

MONDAY.—2 P.M., Operations. 2.15 P.M., Mr. Turner: Surgery. 3.15 P.M., Sir Dyce Duckworth: Medicine. 4.30 P.M., Mr. R. Lake: Ear and Throat. Out-patient Demonstrations:—10 A.M., Surgical and Medical. 12 noon, Ear and Throat.

TUESDAY.—2 P.M., Operations. 3.15 P.M., Dr. R. Wells: Medicine. 2.15 P.M., Mr. R. Carling: Surgery. 4.15 P.M., Sir M. Morris: Diseases of the Skin. Out-patient Demonstrations:—10 A.M., Surgical and Medical. 12 noon, Skin.

WEDNESDAY.—2 P.M., Operations. 2.15 P.M., Dr. F. Taylor: Medicine. 3.30 P.M., Mr. Cargill: Ophthalmology. Out-patient Demonstrations:—10 A.M., Surgical and Medical. 11 A.M., Eye.

THURSDAY.—2 P.M., Operations. 2.15 P.M., Dr. G. Rankin: Medicine. 3.15 P.M., Sir W. Bennett: Surgery. Out-patient Demonstrations:—10 A.M., Surgical and Medical. 12 noon, Ear and Throat.

FRIDAY.—2 P.M., Operations. 2.15 P.M., Sir J. Rose Bradford: Medicine. 3.15 P.M., Mr. McGavin: Surgery. Out-patient Demonstrations:—10 A.M., Surgical and Medical. 12 noon, Skin.

SATURDAY.—10 A.M., Radiography. 11 A.M., Dr. A. Davies: Pathological Demonstration. 2 P.M., Operations. Out-patient Demonstration:—10 A.M., Surgical and Medical. 11 A.M., Eye.

ROYAL INSTITUTION OF GREAT BRITAIN, Albemarle-street, Piccadilly, W.

TUESDAY.—3 P.M., Dr. P. C. Mitchell: The Childhood of Animals—VI., The Play of Young Animals.

ANCOATS HOSPITAL, Manchester.

THURSDAY.—4.15 P.M., Mr. W. R. Douglas: Chronic Enlargements of the Testicle. (Post-Graduate Clinic.)

OPERATIONS.

METROPOLITAN HOSPITALS.

MONDAY (8th).—London (2 P.M.), St. Bartholomew's (1.30 P.M.), St. Thomas's (3.30 P.M.), St. George's (2 P.M.), St. Mary's (2.30 P.M.), Middlesex (1.30 P.M.), Westminster (2 P.M.), Chelsea (2 P.M.), Samaritan (Gynæcological, by Physicians, 2 P.M.), Soho-square (2 P.M.), Gt. Northern Central (2.30 P.M.), West London (2.30 P.M.), London Throat (9.30 A.M.), Royal Free (2 P.M.), Guy's (1.30 P.M.), Children, Gt. Ormond-street (9 A.M.), St. Mark's (2.30 P.M.), Central London Throat and Ear (Minor 9 A.M., Major 2 P.M.).

TUESDAY (9th).—London (2 P.M.), St. Bartholomew's (1.30 P.M.), St. Thomas's (3.30 P.M.), Guy's (1.30 P.M.), Middlesex (1.30 P.M.), Westminster (2 P.M.), West London, (2.30 P.M.), University College (2 P.M.), St. George's (1 P.M.), St. Mary's (1 P.M.), St. Mark's (2.30 P.M.), Cancer (2 P.M.), Metropolitan (2.30 P.M.), London Throat (9.30 A.M.), Samaritan (9.30 A.M. and 2.30 P.M.), Throat, Golden-square (9.30 A.M.), Soho-square (2 P.M.), Chelsea (2 P.M.), Children, Gt. Ormond-street (9 A.M. and 2 P.M., Ophthalmic, 2 P.M.), Tottenham (2.30 P.M.). Central London Throat and Ear (Minor, 9 A.M., Major, 2 P.M.), Royal National Orthopædic (9.30 A.M. and 4 P.M.).

WEDNESDAY (10th).—St. Bartholomew's (1.30 P.M.), University College (2 P.M.), Royal Free (2 P.M.), Middlesex (1.30 P.M.), Charing Cross (3 P.M.), St. Thomas's 2 P.M.), London (2 P.M.), King's College (2 P.M.), St. George's (Ophthalmic, 1 P.M.), St. Mary's (2 P.M.), St. Peter's (2 P.M.), Samaritan (9.30 A.M. and 2.30 P.M.), Gt. Northern Central (2.30 P.M.), Westminster (2 P.M.), Metropolitan (2.30 P.M.), London Throat (9.30 A.M.), Cancer (2 P.M.), Throat, Golden-square (9.30 A.M.), Guy's (1.30 P.M.), Royal Ear (2 P.M.), Children, Gt. Ormond-street (9 A.M. and 9.30 A.M., Dental, 2 P.M.), Tottenham (Ophthalmic, 2.30 P.M.), West London (2.30 P.M.), Central London Throat and Ear (Minor, 9 A.M., Major, 2 P.M.).

THURSDAY (11th).—St. Bartholomew's (1.30 P.M.), St. Thomas's (3.30 P.M.), University College (2 P.M.), Charing Cross (3 P.M.), St. George's (1 P.M.), London (2 P.M.), King's College (2 P.M.), Middlesex (1.30 P.M.), St. Mary's (2.30 P.M.), Soho-square (2 P.M.), North-West London (2 P.M.), Gt. Northern Central (Gynæcological, 2.30 P.M.), Metropolitan (2.30 P.M.), London Throat (9.30 A.M.), Samaritan (9.30 A.M and 2.30 P.M.), Throat, Golden-square (9.30 A.M.), Guy's (1.30 P.M.), Royal National Orthopædic (9 A.M. and 3.30 P.M.), Royal Ear (2 P.M.), Children Gt. Ormond-street (9 A.M. and 2 P.M.), Tottenham (Gynæcological, 2.30 P.M.), West London (2.30 P.M), Central London Throat and Ear (Minor, 9 A.M., Major, 2 P.M.).

FRIDAY (12th).—London (2 P.M.), St. Bartholomew's (1.30 P.M.), St. Thomas's (3.30 P.M.), Guy's (1.30 P.M.), Middlesex (1.30 P.M.), Charing Cross (3 P.M.), St. George's (1 P.M.), King's College (2 P.M.), St. Mary's (2 P.M.), Ophthalmic (10 A.M.), Cancer (2 P.M.), Chelsea (2 P.M.), Gt. Northern Central (2.30 P.M.), West London (2.30 P.M.), London Throat (9.30 A.M.), Samaritan (9.30 A.M. and 2.30 P.M.), Throat, Golden-square (9.30 A.M.), Royal National Orthopædic (3.30 P.M.), Soho-square (2 P.M.), Children, Gt. Ormond-street (9 A.M., Aural, 2 P.M.), Tottenham (2.30 P.M.), St. Peter's (2 P.M.)., Central London Throat and Ear (Minor, 9 A.M., Major, 2 P.M.).

SATURDAY (13th).—Royal Free (9A.M.), London (2 P.M.), Middlesex (1.30 P.M.), St. Thomas's (2 P.M.), University College (9.15 A.M.), Charing Cross (2 P.M.), St. George's (1 P.M.), St. Mary's (10 A.M.), Throat, Golden-square (9.30 A.M.), Guy's (1.30 P.M.), Children, Gt. Ormond-street (9 A.M. and 9.30 A.M.), West London (2.30 P.M.).

At the Royal Eye Hospital (2 P.M.), the Royal London Ophthalmic (10 A.M.), the Royal Westminster Ophthalmic (1.30 P.M.), and the Central London Ophthalmic (2 P.M.), Hospital operations are performed daily.

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THE INDEX TO THE LANCET.

The Index and Title-page to Vol. II. of 1911 were given in THE LANCET of Dec. 30th, 1911.

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(Taken daily at 8.30 a.m. by Steward's Instruments.)

THE LANCET Office, Jan. 3rd, 1912.

Date.	Barometer reduced to Sea Level and 32° F.	Direction of Wind.	Rain fall.	Solar Radio in Vacuo.	Maximum Temp. Shade.	Min. Temp.	Wet Bulb.	Dry Bulb.	Remarks.
Dec. 28	30·07	S.W.	0·09	55	53	41	47	47	Overcast
,, 29	30·12	S.W.	...	57	52	47	48	49	Cloudy
,, 30	30·08	S.W.	...	63	53	48	48	49	Cloudy
,, 31	30·39	S.W.	...	50	47	43	45	45	Overcast
Jan. 1	30·45	S.W.	...	53	52	44	48	48	Overcast
,, 2	30·47	W.	...	61	49	43	43	44	Fine
,, 3	30·26	S.W.	...	55	51	43	46	48	Overcast

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Z.—Messrs. C. Zimmermann and Co., Lond.; Mr. N. Zamchelli, Bologna.

A Lecture
ON
THE RELATIONSHIP OF TUBERCULOSIS TO ACCIDENT AND INJURY.

Delivered at the Hospital for Consumption and Diseases of the Chest, Brompton,

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GENTLEMEN,—It is always somewhat difficult to find a suitable subject for a lecture in this course, as there are few themes which seem to present any degree of novelty, most subjects which fall within the limits proper for discussion at this hospital having been exhaustively dealt with by former lecturers or treated of in the excellent text-books of medicine now available. It occurred to me that the question of the relationship of tuberculosis to accidents and injuries is not often so discussed, and though only a small number of the cases in which the question arises are in connexion with the chest, yet these cannot be separated from the rest of the group, and their existence may justify the choice of the subject for treatment in a lecture at this hospital.

It is, indeed, a subject which has assumed very considerable importance in recent years owing to the enactment of legislative measures, such as the Employers' Liability Act and the Workmen's Compensation Act. Actions at law are frequent under these statutes, and it may fall to the lot of any practitioner to have to exercise his judgment as to the alleged causal connexion between an accident and some morbid condition which has followed it. The position of a medical witness is never, perhaps, a particularly enviable one, and it is especially unpleasant when he is called on to testify in regard to matters to which he has previously given little attention, and on which he has therefore formed no very clearly defined opinion.

On this account it may not be unprofitable to consider the theoretical principles which are applicable to such claims as may arise in connexion with tubercular infection. I shall have occasion to refer to one or two cases of this nature which have recently fallen within my own experience and have caused me to realise some of the difficulties which may trouble the medical witness or referee.

Now, the first important point which arises in cases of this kind is to establish the reality of the causal connexion between the accident and the subsequent tuberculosis, and we have to be clear in our minds as to what we mean by a cause. In ordinary speech we talk of cause and effect as if there was usually one cause which was always followed by a definite consequent, but a little consideration shows that the cause of any phenomenon is rather the existence of a group of conditions which unite to produce it, and the absence of any one of which would prevent its appearance.

Thus, in the case of an infective disease there must be first a pathogenic organism and a host capable of harbouring it, and then the germ must be brought into contact with the potential host, and the condition of the latter at the moment must be such as to admit of the growth of the parasite. The patient must be susceptible at the time of the attack, this susceptibility being a variable factor. We know, for example, that of those who are exposed to any infection only a small proportion actually "take" the disease, while a person who has escaped in one epidemic may fall a victim in another.

The important factors, then, which we have to consider in the present connexion are the possibility (1) that an accident or other injury may be the means by which tubercle bacilli are introduced into a person; or (2) that the injury may cause a weakening of natural resistance to the bacillus and thus permit it to establish itself when it would not otherwise have done so, or may lead to dissemination of the bacilli, thus giving rise either to a new focus of tuberculosis or to extension of one already existing.

Now there are certain peculiarities about the tubercle bacillus whereby the disorder resulting from its growth in the human body is distinguished from most other infective diseases. These characters tend to render the problem of the relationship between an injury and the subsequent tubercular infection specially difficult to determine.

1. In the first place, the organism is fairly ubiquitous, so that most, if not all, persons are brought into contact with it in the course of their lives. German writers have maintained that by middle life every one has been infected, the bodies of all persons who have reached or passed that period of life showing, if carefully examined, some deposit of tubercle. In the majority of instances no sign of the disease was ever manifested during life, but the existence of the healed lesions shows that the bacilli did at one time actually establish a footing and produce local disturbance.

And we know that in such lesions, even when they are apparently obsolete or quiescent, there are usually present living organisms which may set up further disease, either by direct spread in the neighbourhood or by carriage to distant parts, if the resistance of the individual is sufficiently reduced. A familiar instance of this spread from an old focus is seen in the acute general tuberculosis of young children, in whom we can almost always find a caseating gland from which the overwhelming dose of bacilli has been thrown into the circulation and led to the generalised affection. We cannot always trace the exact factors which thus lower the resistance, and the resulting attacks are apparently spontaneous; so that if we do not make a necropsy and thus discover the old quiescent lesion, we may even suppose that a fresh infection has occurred from without.

If, then, so many persons have quiescent foci of tuberculosis within them, and if we cannot usually determine exactly what has depressed the resistance and led to spread of infection in ordinary cases, it is clear that it must always be problematical whether any particular accident has been the cause at work. The outbreak may have been an accidental sequel, not a consequence of the injury.

2. Secondly, we have to recognise that the tubercle bacillus is a slowly growing organism in the majority of instances, so that symptoms of disease do not arise until some considerable period of time has elapsed after its actual introduction into the body or its establishment in some new focus. Contrast it, for example, with the infection of erysipelas, in which severe symptoms will probably develop within a few days of the introduction of the germ, or even with tetanus, in which a fortnight or three weeks may elapse. In the case of tuberculosis months may pass after an injury has occurred before any sign of disease is recognisable. Even when such do appear they may not be at first acute or striking.

It will be most convenient to consider under the different classes of cases the evidence on which we have to rely to establish a connexion between a distant accident and subsequent tuberculosis. We may consider first those instances in which the tubercular infection results directly from the injury, and afterwards those in which the latter produces some weakening of resistance or other disturbance in a person in whom tubercle bacilli are already present, and thus leads to extension of the disease.

I.—DIRECT INFECTION WITH TUBERCLE BACILLI.

This may result from injuries caused by instruments to which the bacilli are adherent, or from subsequent infection of an open wound by contact with infected objects.

Of the former type the best-known example is the often-quoted case of the nurse who cut herself with a fragment of a broken spittoon which had contained tuberculous sputum (Tschering). Similarly, in the process of tattooing, a tuberculous operator has inoculated the disease, either by moistening the skin with saliva, or owing to the needle being contaminated by being held in his mouth when out of use. As is well known, syphilis has been conveyed in the same way. Letulle records a case in which a woman, while scrubbing the floor of a room in which her husband had recently died from tuberculosis of the lungs, ran a splinter of wood from one of the boards into her hand; the wound subsequently became the seat of tuberculosis. A bite from a tuberculous husband is said to have caused the appearance of local tuberculosis of the lip (B. Schmidt).

Butchers and veterinary surgeons are liable to inoculation in the course of their work in cutting up infected cattle. Thus Pfeiffer describes the case of a veterinary surgeon who cut his thumb in dissecting a cow; tuberculosis of one of the

articulations followed, and ultimately tuberculosis of the lungs. Pathologists may suffer similarly in making human necropsies, and in days before the wearing of indiarubber gloves was as general as it now is, it was not uncommon for them to be affected with the condition known as "anatomical tubercle," or tubercula necrogenica, a form of slowly developing verrucose tuberculosis of the skin arising either from inoculation of slight cuts or scratches, or from the entry of the bacilli through sweat-ducts or hair-follicles.

Infection of existing wounds by bacilli may also occur, as in the case of a laundress who suffered from a whitlow. This was infected with tuberculosis in the course of her occupation, through washing the linen of a tuberculous patient. A consumptive mohel, or ritual operator, has been known to spread infection in the performance of circumcision, either by applying his mouth to the wound to stop bleeding or by squirting a mouthful of wine over the cut surface as part of the procedure.

It is often difficult to distinguish between the two classes of cases just considered, as we do not know if the object causing the injury was itself contaminated. Thus, in one recorded case, in which a butcher's assistant fell and cut his elbow, the wound subsequently becoming the seat of tuberculosis, it may have been that the bacilli were inoculated directly at the time of the accident, being present on the portion of ground with which he came into contact, or the wound may have been subsequently infected in the course of his occupation (Wichmann).

Before leaving the present group we may note the sequence of events. There is first a wound or abrasion. The resulting tuberculosis may be limited to the skin, taking the form of lupus or verrucose tubercle; or the trouble may spread deeper. In the latter event its natural course is by the lymphatics, which become the seat of tubercular lymphangitis, and the lymphatic glands to which they lead become involved. The intervening lymphatics may appear to escape, as in a case quoted by Niché, in which a man cut his hand in undoing a bundle of straw. Subsequently a swelling appeared in the corresponding axilla, which was refractory to treatment, and had to be removed by operation. It was found to be tuberculous. Other glands became affected and were removed, and finally recovery resulted.

Involvement of neighbouring bones and joints seems to be not uncommon. Thus a man infected his hand in cutting up tuberculous meat, and subsequently suffered from tuberculosis of one of the carpal bones (Rudolph). Even so distant a part as the lungs may ultimately suffer, as in Pfeiffer's case already referred to. A similar sequence following a post-mortem wound is narrated by Letulle; here glandular infection, instead of disease of a joint, preceded the lesion in the lungs.

In another instance a man, aged 30, bruised his foot with a stone which fell on it. The ankle-joint swelled first, then tuberculosis of the skin ensued, followed by tuberculosis of the bones of the foot (which was amputated), and finally by pulmonary tubercle (Feilchenfeld). It seems probable that tuberculosis of the skin implies an infection from without, so that this may have actually been a case of direct inoculation or subsequent infection; but the phenomena closely resembled those seen in the next class of cases with which we shall have to deal.

In the accounts given of the cases referred to no difficulty seems to have been experienced in tracing the connexion between the injury and the subsequent tuberculosis. Symptoms of infection occurred within a few weeks of the occurrence, and the anatomical relationship of the glands or bones affected to the site of injury was fairly close, while in the case of the skin the identity of the seat of the lesions was apparently obvious. So far as the skin is concerned, there will probably be a visible scar remaining, and the cutaneous affection may be readily shown to be connected with this. The original wound may sometimes refuse to heal, or it may seem to heal and then break down again, as in Kluge's experience. This surgeon cut his hand at a necropsy, and the wound healed up; it broke down again ten weeks later as the result of hard riding in the course of his military duties, becoming the seat of tubercular disease; and a condition of tubercular teno-synovitis persisted for some time.

It is worth noting that the term "accident" is apparently given a somewhat wide meaning by courts of law. Hence claims may arise in connexion with any infection arising out of a person's employment. To discuss such subjects as grinder's tuberculosis connected with the inhalation of dust and of tubercle bacilli at their work, or the liability of laundresses to contract the disease from contact with the linen of infected persons, would lead us too far afield. Experience at this hospital certainly points to laundresses as being frequently subject to consumption, but this is probably due to the conditions under which they work rather than to direct infection from the clothes washed.

II.—Extension of Existing Tuberculosis owing to Weakened Resistance or Dissemination of Bacilli.

Under this heading we have to consider all cases in which the bacilli are present in the patient at the time of the accident, which leads either to a local extension of the affection or to its appearance at some distant part of the body. We may also include for convenience those cases in which some new symptom is induced, even apart from ascertainable spread of the tubercular deposit.

If we consider first the pathology of the matter we recognise that a local focus of tuberculosis consists in a mass of inflammatory tissue, the centre of which is probably caseous and soft, living bacilli existing both in the tissues and in the central puriform material. The commonest places for such localised deposits are the lymphatic glands and the lungs. If only deeply seated glands are affected there may be no signs of the disease discoverable, and the person will very probably pass as sound even on careful medical examination. When the lung is involved close scrutiny will usually reveal some alteration of the normal conditions, but not necessarily enough to make diagnosis at all certain.

When the focus of disease is quiescent it is probable that the bacilli remain imprisoned in the inflammatory mass; but whenever it is active, it is at least probable that some of them from time to time escape into the circulation. In the case of pulmonary tuberculosis many observers have carried out systematic examinations of the blood to ascertain whether tubercle bacilli could be found in it. The results obtained have been divergent, some observers finding them only rarely in the circulation, others noting their presence almost invariably. We may conclude that they are at all events frequently "at large." The same is probably true in the case of local tuberculosis of other organs. Hence a source of potential infection is present in many persons, and we can realise how the occurrence of a focus of diminished resistance might admit of the parasites effecting a new settlement in some distant part.

Again, an injury may result in a tearing of the tissues forming the focus of disease, and so may directly cause a liberation of bacilli into the circulation. Thus curettage of a tubercular area may cause an outbreak of miliary tuberculosis, and rough manipulation of a diseased joint may similarly cause an extension of the disease. The extension may be confined to the parts surrounding the original focus or may involve distant organs. A symptom arising from this tearing of the tissues—or from increased strain thrown on the blood-vessels with consequent rupture—which is very common in pulmonary cases, is, of course, the onset of hæmoptysis.

These considerations are fairly simple and straightforward, but the question of the mode in which a local injury predisposes the part affected to become the seat of tuberculosis—depresses its resistance to the germ—is not easily solved. The class of tubercular trouble most often assigned to preceding injury is chronic tuberculosis of joints (white swelling). Now it is generally admitted that severe injuries, such as dislocations, are not often followed by tuberculosis of this nature. The causal condition is some comparatively trivial accident, such as twist or sprain.

We must bear in mind that among certain classes there is always a tendency to find an origin for disease in some antecedent accident, and among them slight injuries are so common that one can usually be found to which any trouble can be attributed. Hence there is room for some scepticism as to reality of the cause assigned in many of such cases. Nevertheless, the balance of opinion seems at present to accept the truth of this mode of causation, and it is supported by evidence of weight. For example, the authorities of the French War Office find that the majority of cases in their army in which amputation of the foot has to be carried out for tubercular disease are attributable to old sprains (*foulures*), and in the case of soldiers the occurrence of the accidents will probably be actually on record and

readily verifiable. This consensus of opinion is reflected by most authors of surgical textbooks and articles, who generally admit this mode of causation, though they differ as to the percentage of cases in which it is found.

Now the pathology of a sprain may be supposed to consist in stretching of ligaments, with rupture of some of their fibres and possible rupture of blood-vessels and extravasation into the joint, followed by reactive hyperæmia, exudation, and multiplication of connective cells, resulting finally in repair. The phenomena accompanying a dislocation are presumably the same, with the trifling exception that the bones forming the joint are displaced from their normal apposition. It is, therefore, not clear why the slighter injury should be followed by tuberculosis and not the more severe. The explanation given—that in the latter case the inflammatory reaction is greater and that the bacilli are prevented from settling by the more thorough flushing with inflammatory fluids—seems inadequate, as the process must go through different degrees of severity in its course towards recovery. Probably the explanation is that tuberculosis only follows injury in a small proportion of all cases, and slight injuries are common, whereas grave lesions are rare; hence the rarity of instances in which it is attributed to grave accidents.

Again, it is remarkable that these cases of tubercular disease of joints arising after injuries occur as a rule in persons who are not obviously the subjects of an existing tuberculosis elsewhere, whereas injuries in consumptive persons do not usually, so far as I am aware, become the seats of tuberculosis, though Feilchenfeld records the case of a man, aged 35, a consumptive, who sprained his wrist and subsequently suffered from tubercular disease of this joint.

The attempt to throw light on the problem by experiments on animals has not led to any very definite results. Thus, early experimenters found that it was possible, by injuring a joint and then injecting tuberculous material into the circulation, to produce an arthritis; but Lannelongue and Achard showed that the inflammation of the joint was due in these cases to other germs than the tubercle bacillus, the condition being septic rather than tubercular. Some experiments of Petrow with pure cultures have, however, established the possibility of a true tuberculosis resulting under these conditions, but the doses of bacilli used were very large compared with anything likely to be present in ordinary conditions of disease. Recently Moultanovsky has found that tuberculosis can be similarly induced in the muscles of rabbits—a tissue not naturally susceptible to this form of infection—by bruising them and then injecting the bacilli into a vein of the ear.

On the other hand, Petrow noted that in tuberculous animals bacilli might be found in the epiphyses and joints, even when no signs of disease were discoverable there, and suggested that an injury may rather light up a smouldering infection than lead to a settlement of circulating organisms there. That this is the case in some instances of human disease seems undoubted, as Lannelongue found that careful inquiry into the past history of some of these patients revealed that there had been pain or swelling of the joint before the accident; and X-ray examination or post-mortem inspection has in other cases proved the existence of old disease.

So far as the question of compensation for accident is concerned it is probably immaterial whether the injury has led to a deposit of tubercle in a part or has merely quickened a latent infection: it is equally a cause of the condition leading to the worker's incapacity. But from the point of view of pathology, there seems much in favour of adopting this last view of the causation of traumatic tubercular arthritis.

It is not necessary for our present purpose to quote a series of cases of articular disease following accidents, as the condition is well recognised and is dealt with in the text-books. It is only needful to point out that there is often a considerable interval between the accident and the appearance of the graver disease; and that the interval may either be quite free from trouble of any kind, or some pain and limitation of movement may persist. The following case of spinal tuberculosis may illustrate the sequence of events after an inquiry.

A middle-aged man was carrying a heavy parcel in each hand and fell in descending an iron staircase. He struck his back in so doing, but was able to continue his work for some weeks, the pain due to the local bruising of the skin and muscles of the back gradually passing off. About six weeks after the accident he noticed a return of pain, and this at times radiated into the legs. Then weakness of the legs gradually ensued, and he came into hospital for this condition. On examination he was found to have weakness and wasting of the muscles of the lower limbs, and an examination with the X rays showed that the upper lumbar vertebræ were disorganised. There were râles in the chest over the upper parts of both lungs and irregular fever of remittent type; but a single examination of the sputum did not reveal the presence of tubercle bacilli. The man developed signs of consolidation of the lower lobe of the right lung with increased fever and weakness, and died in the course of a few days.

No necropsy could be obtained, but there seems little doubt, in spite of the one negative search for tubercle bacilli, that he was suffering from pulmonary tuberculosis, which had existed before the accident, and that as the result of the latter he had developed Pott's disease of the lumbar vertebræ. The strain suffered by the vertebral column had either afforded a spot of weakened resistance to the bacilli circulating in the blood or had awakened to life a quiescent focus of tuberculosis previously seated in the spinal column.

Instances of tuberculosis of the lungs following injury to the chest have been recorded. Thus a mason fell and fractured his skull. He was trephined and recovered from the injury, examination of his chest revealing at this time no disease. During convalescence he developed pain in the side and signs of consolidation of the lung, the condition proving to be tubercular (Thiem). In another case, a man was struck in the side by a heavy box, the injury causing pain in the side in breathing and slight dulness on percussion. Six months later he suffered from hæmoptysis and was found to have tubercular disease (Thiem). In neither of these cases, perhaps, is it absolutely clear that the tuberculosis was produced by the injury.

Jaccoud records the case of a man who received a violent blow in the side, followed by pneumonia. He seemed to recover from this, but some dulness and râles persisted in the affected area. No tubercle bacilli could be found in the sputum. Nineteen months later he developed definite signs of tuberculosis and bacilli were found. The condition terminated fatally, and at the necropsy the appearances suggested that a primary pneumonia had "become tuberculous."

Perhaps the most striking case is that recorded by Schrader. A man, previously healthy, fell from a cart and was rendered unconscious. He attempted to do his work next day, but felt so ill that he had to give up and went into hospital. Here he was found to have severe bruising over the region of the right shoulder, and signs of pneumonia developed in the upper part of the right lung. Ultimately the whole right lung became affected; no fluid was found on puncture of the pleural cavity. The sputum "showed nothing abnormal." Fever of a remittent type continued, and about five weeks after the original accident tubercle bacilli were found in the sputum. The signs gradually abated and recovery finally ensued.

It may be remarked that it is not definitely stated that a search for tubercle bacilli was made when the sputum was first examined, and that even if it were, a single negative examination is not conclusive; so that the possibility remains that the condition was tubercular throughout. It may have been a case in which an accident awakened an existing lesion into activity. Still the connexion of the injury with the subsequent disease is manifest.

The pathology of these pulmonary cases is not very clear. It is suggested that a pneumonia may result from an accident, and that this may "become tubercular." Schrader states that such a sequence is well recognised, but so far as my own experience goes it must be very rare for an ordinary croupous pneumonia to act as a starting point of tuberculosis. A condition of bruising with hæmorrhage in the pulmonary tissues might give rise to similar physical signs, and might, perhaps, provide a suitable soil for the bacilli, if it be true, as has been stated, that miliary tubercles are found in the tissues around extravasations of blood. We must, however, bear in mind the possibility that in these cases there may have been latent tuberculosis of the lung before the accident, and that this was quickened into fresh activity by the lesion.

Another sequence that may be met with is the appearance of pleurisy, with or without effusion, as the result of an injury; signs of tubercular affection of the underlying lung

may subsequently appear. It is even stated that injury to one part of the chest wall may result in tuberculosis of a distant part of the lung, but I think that one would be justified in regarding such an occurrence with considerable scepticism and demanding rather stringent proof of the causal relationship.

With regard to this group of cases, if we are called upon to express an opinion as to the probability of a tubercular lesion being due to a preceding accident, I think we must put disease of joints in a class by itself. There is a considerable mass of evidence, as was noted above, that in some way or other injury does lead to tubercular arthritis; and if the occurrence of the accident is clearly established, and it is followed at a reasonable interval by the tuberculosis, we may accept the causal connexion as probable. As to what constitutes a reasonable period of time, opinions may differ, but it seems unlikely that symptoms would be delayed for more than three months. Also we must look for some sign that recovery has never been perfect—some persistence of pain or stiffness in the joint in the interval. If such have been noted we are almost entitled to speak with that degree of certitude which is beloved by courts of law and sometimes assumed even in matters of opinion by so-called expert witnesses.

On the other hand, if the onset of a case of pulmonary disease were attributed to an injury, we should be obliged to regard the assumption with grave doubt, since the sequence is undoubtedly rare and its very existence may be doubted. To justify such a claim it would be necessary to establish the fact of a grave injury to the chest in the first instance and the probability that the patient was previously sound; and proof must be given that the tubercular lesion has developed at the seat of injury and that some signs of disease have been constantly present there since.

AGGRAVATION OF EXISTING DISEASE.

That injury may cause aggravation of an existing tubercular condition is well established and easily intelligible. Such a result may occur in any part of the body, and the three following examples, taken from Feilchenfeld, may serve as illustrations.

An officer in jumping (on a horse) injured his sacrum and died shortly afterwards with acute generalised tuberculosis. At the necropsy there was found old sacro-iliac disease from which the general infection had spread.

A man slipped and fell, striking his abdomen. He died with symptoms of acute peritoneal trouble, and after death it was found that the mesentery was the seat of old disease and that there was extension of miliary tubercles to the rest of the peritoneum.

A man suffering from consumption fell and broke some ribs. This accident was followed by pleurisy and by aggravation of the disease in the lungs.

In considering questions arising out of cases of this nature we must note that it is only when the injury affects the tuberculous part directly that we can admit without scruple that subsequent increase of the disease is due to it. Much more difficult are cases in which a claim arises that a distant injury has aggravated the existing disease. That it may do so is probable on general grounds, as it is admitted that intercurrent disease—e.g., influenza or erysipelas—may excite the infection to greater activity, and it is reasonable to suppose that an accident may depress the sufferer's resistance. Thus, I have seen a case of acute pneumonia following a motor-car accident, in which the shock and subsequent confinement to bed were apparently predisposing causes of the malady. The same sequence might conceivably lead to aggravation of an existing tuberculosis, but it must be admitted that ascertainable instances of such a sequence are not easy to find.

Feilchenfeld, from whom I have already borrowed so many illustrative cases, records an instance in which a consumptive man was run over by a train, the accident necessitating amputation of the leg. This was followed by prolonged suppuration, and the pulmonary condition was aggravated and death accelerated by the weakening effects of the pyogenic trouble. This case is, however, rather one in which an intercurrent infection was the cause of lowered resistance to the tubercular attack. The mechanism of its action is intelligible in the light of the known phenomena of immunity, which depends on the supply of various chemical bodies, such as bacteriolysins, opsonins, and so forth, so that if the resources of the patient are used up in combating one form of infective agent there will be less available to resist a second.

Of the conditions subsisting in those suffering from the shock and neurasthenia which may follow an accident we know very little, and therefore we have no valid theoretical basis to support any suggestion that such a result of an injury has acted prejudicially on a pre-existing tuberculosis. Still more doubt would arise if it were claimed that an injury and its resultant shock had so depressed a healthy person's resistance that he subsequently fell a victim to tuberculosis of the lungs or elsewhere. I do not know of any instance in which such a claim has been preferred, and I think it would be very difficult to substantiate, but it is well to bear in mind the possibility of such a suggestion.

Before it could be admitted that an accident had aggravated an existing focus of tuberculosis situated at a distance from the part affected by the injury, it would in any case be necessary to show that it was of such gravity as to produce a clear deterioration of general health. Nevertheless, frivolous claims may be formulated in this connexion. Thus, a man came to this hospital suffering from pulmonary tuberculosis and attended for some three months. He then ceased to come and resumed his occupation in a dairy. While at work he scalded his leg, the burn being of the first and second degrees, and involving an area of about the size of the hand. It was treated and healed normally. He came again for treatment for his chest condition, but said nothing of the accident, clearly attributing no importance to it; but after his death, which ensued very shortly, a claim was made by his widow that the accident had accelerated his decease. The case came into court, but the plaintiff did not put in an appearance, the claim being obviously indefensible.

HÆMOPTYSIS.

Lastly, we may refer to the occurrence of hæmorrhage as a result of strain or injury, as it is a common subject of questions. The simplest type of case may be seen in that of a youth aged 18, who came to this hospital saying that he had been lifting a weight, when he was suddenly seized with hæmoptysis. This did not recur, and he stated that he was none the worse for it. Examination revealed tuberculosis at the apices of both lungs, which had evidently been present before the accident.

In a second case a middle-aged man was violently bent backwards by the weight of a heavy ladder thrown on to his arms. He felt pain in the chest for 15 or 20 minutes afterwards, but continued his work. Next day he felt ill, and in the evening was sick and giddy and brought up a small amount of blood; he stated that he vomited and did not cough it up. This recurred several times during the night and the next two days. Since the accident he had been short of breath and had suffered from cough. On examination about a month after the accident there were signs of chronic tuberculosis at the apex of the left lung. He improved markedly under treatment in this hospital, where he came under the care of my colleague, Dr. A. J. Jex-Blake.

Reports of cases of this nature could easily be multiplied if time permitted. The first question generally asked with regard to them is whether the tuberculosis was present before the accident. Now, in any case of hæmoptysis the presumption is that the hæmorrhage is a symptom of previously existing disease. We do not now believe in hæmoptysis giving rise to phthisis (phthisis ab hæmoptoe) as was taught by our forefathers in medicine. It is not impossible that a strain might lead to rupture of a pulmonary vessel apart from tubercular infection, but such a bleeding would not be followed by phthisis. We can be practically sure that if signs of consumption appear soon after an attack of hæmoptysis, there was latent disease present before the occurrence.

We must, however, be prepared to support our views on this point by evidence derived from the signs in the chest and the pathology of the disease. I have not time to deal with this question at length, but it is clear in the first place than an extensive distribution of the physical signs usually implies disease of some duration—e.g., if both apices are affected. In the comparatively rare cases in which a large portion of lung is rapidly involved in an acute tubercular process, the general state of the patient—fever, weakness, and so forth—will readily elucidate the acute nature of the condition. Coarse râles generally point to chronic trouble,

as contrasted with the fine crackles heard over a patch of recent consolidation. Thickening of the pleura also points to long-standing disease.

A more difficult question is that of the effect of the accident on the patient's general health—whether it has aggravated the tuberculosis of the lung as well as causing the hæmorrhage. Of the two cases I have quoted, in the first no such ill-effect seemed to have ensued, and the result of the accident was only to stop the lad from working till the bleeding point had safely closed up.

In the second instance above, there seemed to have been some aggravation of the disease, as the patient who had previously thought himself quite well became weak and short of breath. He rapidly improved, however, and the still more insoluble problem arose at a subsequent period, as to whether he had then recovered from the effects of the accident. It was clearly impossible to disentagle with any certainty the effects of the original disease from those of the slight exacerbation produced by the strain. It seemed, however, reasonable to believe that if improvement occurred the effects of the recent acute process produced by the accident would subside before the effects of the chronic lesion, and after a lapse of about three months, when I re-examined the patient, I came to the conclusion that he was suffering from his original malady and had recovered from the accident.

I hope I have said enough in this brief sketch of the subject to indicate the nature of the problems involved in any study of the relations of tuberculosis to injury and accidents, and to show the importance of such study in view of the social arrangements of our own time.

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Researches INTO SENSORY DISTURBANCES FROM CEREBRAL LESIONS.

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(Continued from p. 4.)

II.—SENSORY DISTURBANCES ASSOCIATED WITH CERTAIN LESIONS OF THE OPTIC THALAMUS.

1.—INTRODUCTION.

THROUGHOUT this work it has been our aim to discover the nature of the abnormal sensations evoked by disturbances at different levels of the nervous system. So far our task has been a comparatively easy one on account of the certainty with which the level of the lesion could be determined even in life.

We know that all afferent fibres passing upwards from the mid-brain end in the optic thalamus. Here lie the synaptic junctions of those paths by which impulses are carried onwards to the cortex; no path passes upwards without undergoing a relay in some part of this organ. We shall now attempt to discover the changes in the grouping of afferent impulses which occur after they have terminated in the optic thalamus, and the part played by this organ in sensation.

It is obvious that if all afferent impulses undergo a relay in the optic thalamus, a lesion at a point where they enter this organ may interrupt them before they have undergone re-grouping: they may be cut off before they have reached the thalamic junction, and the loss of sensation would then correspond to that produced by a lesion of the mid-brain, although the disease might lie in the optic thalamus. On the other hand, sensory impulses may reach the optic thalamus undisturbed and undergo characteristic changes in grouping; but the fibres which conduct them from the thalamus to the cortex may be interrupted by the lesion. Finally, since lesions of the optic thalamus are usually of vascular origin and tend to disturb anatomical areas rather than functional paths, they not infrequently interfere both with the impulses which enter the thalamus and with those which pass away from this organ to the cortex.

Our business is to determine the nature of the sensory changes produced by interruption of sensory impulses at various points in their course, and for this purpose we must be able to recognise that a lesion is situated within the optic thalamus. This we can do largely owing to the work of Dejerine and his pupils; for he pointed out, first with Egger [6*] and later with Roussy [7], that lesions which involve the optic thalamus are often characterised by a group of symptoms of which pain in the affected half of the body and other sensory disturbances form an integral part. These clinical symptoms and signs have been further elaborated by Roussy [33], and have been erected by him into a "*syndrome thalamique.*" He has shown that a lesion of the optic thalamus may produce the following characteristic changes:—1. A persistent loss of superficial sensation of one-half of the body and face. This loss to touch, pain, and temperature is more or less definite, but the loss of "deep" sensibility is always more pronounced. 2. Slight hemiataxy and a more or less complete astereognosis. 3. Acute pains on the same side, persistent, paroxysmal, often intolerable, and yielding to no analgesic treatment. 4. Slight hemiplegia which produces no contracture and rapidly passes away. 5. Choreic and athetotic movements in the limbs of the affected side. He pointed out that the sensory loss and the pains are alone due to the lesion of the optic thalamus, whilst the other symptoms are produced by destruction of surrounding parts.

Roussy has now established the anatomical significance of this "*syndrome thalamique*" by five post-mortem examinations. Others have been reported which show the truth of Dejerine's original generalisation.

We ourselves have observed 24 more or less similar cases, with sufficient symptoms and signs to justify us in diagnosing a lesion in the optic thalamus, such as Roussy has described.

The loss of sensation differs in no way from that produced by interference with sensory impulses, either as they enter the optic thalamus or as they pass to the cortex by way of the internal capsule. But to these familiar defects another factor may be added when the lesion destroys certain parts of the optic thalamus. This fresh factor, which alone can be attributed to the disturbed activity of this organ, is a tendency to react excessively to unpleasant stimuli. The prick of a pin, painful pressure, excessive heat or cold, all produce more distress than on the normal half of the body, and this is the essential feature in all the cases with which we shall now deal. There are other cases where the optic thalamus is destroyed in which the spontaneous pains and the characteristic over-response may be absent; but with these we are not concerned at present.

2.—THE EXCESSIVE RESPONSE TO AFFECTIVE STIMULI AND THE BEHAVIOUR IN STATES OF EMOTION OF THE ABNORMAL HALF OF THE BODY.

A.—*The Response to Unpleasant Stimuli.*

(*a*) *To Prick.*

After quoting a case (Case 5) as a characteristic instance of the "*syndrome thalamique*" described by Roussy, the lecturers continued:—

We shall now proceed to investigate the patient's behaviour to measured painful stimuli. If a pin is lightly dragged across her face or trunk from the right to the left half she exhibits intense discomfort when it passes the middle line; she not only calls out that it hurts her more but her face becomes contorted with pain. But she insists that although the stimulus is more painful, it is "less plain" and "less sharp" than over normal parts; the prick is less distinct but it hurts her more.

This "hyperalgesia" or over-reaction would seem to point to a lowered threshold to the prick of a pin. But measured stimulation with both the spring and the weight algesimeters shows that, if anything, the threshold is a little raised. She never responds with certainty over the abnormal (left) half of the body to a stimulus which evokes a sensation of pricking on similar normal parts to the right of the middle line.

* These and other reference numbers relate to a bibliography to appear at the end.

Moreover, if a measured stimulus of the same strength is applied to similar parts more pain is evoked over the affected than over the normal half of the body; the same stimulus, provided it is sufficiently strong to cause pain, produces a more uncomfortable sensation on the abnormal side.

This remarkable over-response to prick was present in 20 out of 22 cases in which the strength of the stimulus was carefully measured. But in no instance was the threshold lower on the affected half of the body; in 13 cases it was identical on the two sides, and in 9 a decidedly stronger stimulus was necessary to produce a sensation of prick in spite of the greater discomfort experienced by the patient when pain had once been evoked.

(*b*) *Painful Pressure.*

Throughout our work we have attempted in every case to measure the amount of pressure which evoked pain. Cattell's algometer was applied to similar parts on the two halves of the body, and the point was registered at which the pressure became uncomfortable.

Now in the class of case with which we are concerned here, pressure is peculiarly liable to produce greater distress and an increased reaction on the affected side. Out of 24 patients every one responded more violently to painful pressure, and all complained that the same pressure, if it evoked discomfort, was more disagreeable on the abnormal than on the normal half of the body.

Moreover, this pain did not develop gradually out of the painless sensation of pressure as on the normal side, but seemed, over the affected parts, to appear explosively. Up to a certain point the patient remained unconcerned, but suddenly, as the pressure increased, he would cry out and withdraw the limb to which the instrument was applied; from the expression of his face he had obviously been more hurt than by the same pressure on the equivalent normal part.

This increased reaction is frequently, though not necessarily, associated with the lowering of the threshold; the same pressure may be required on both sides to evoke pain, although the response on the affected half of the body is excessive (6 cases). In 3 cases, including one which came to post-mortem examination, the threshold was actually higher on the side of the greater reaction.

Although this increased reaction may occur with a normal and even with a raised threshold, we found that in 15 out of our 24 cases the pressure necessary to cause discomfort was less on the affected side. This was particularly the case on the palm and sole of the foot. But in spite of this lowering of the threshold to painful pressure, not one of these cases showed a lower threshold when the stimulus was a prick. Obviously the pain produced by excessive pressure contains some sensory factor to which the abnormal half of the body is peculiarly susceptible.

Now if anyone will apply the algometer to his own hand or foot he will find that the pressure causes discomfort rather than pain. There is something terrifying about the crushing sensation, especially when a bone is pressed upon. The condition evoked is less a pain than an unbearable and distressing sensation, and in this way differs profoundly from the prick of a sharp point. Both stimuli produce pain and discomfort; but whereas a prick produces a sensation of pain associated with more or less discomfort, pressure upon bones and other deep structures evokes more discomfort than formal pain.

In these cases of over-reaction on the affected half of the body it is susceptibility to the uncomfortable element of a stimulus which is increased rather than sensibility to pain. Not uncommonly the threshold may be actually raised to prick but lowered to pressure-pain, although both stimuli produce greatly increased discomfort over abnormal parts.

Any loss of sensibility to pain delays the appearance of this over-reaction, but as soon as the stimulus is strong enough to cause pain the discomfort will greatly exceed that produced by the same strength of stimulus over normal parts.

(*c*) *Extremes of Heat and Cold.*

Wherever this over-reaction to painful stimuli exists the response to the more extreme degrees of heat and cold is changed. Thermal appreciation may be unaltered, may be diminished, or may be actually lost, and yet the discomfort produced by cold and hot water will be greater on the affected than on the normal half of the body.

All sensibility to heat and cold may be lost, and yet this over-reaction may still occur on the affected side. But in such cases the stimulus must be intense; the heat applied must be above 50° C., and the cold required will usually lie below 15° C, and sometimes even melting ice is necessary to evoke this over-reaction. But when once a stimulus has been found capable of producing a response, the discomfort is excessive on the affected half of the body.

To the most interesting group, however, belong those cases where an excessive response was evoked on the affected side in spite of a thermal sensibility otherwise perfect. In one case, for instance, the threshold for the appreciation of heat and cold was identical on the two halves of the body. But whenever a stimulus produced any but the mildest sensation of cold it seemed "colder" and more unpleasant over the affected than over the normal palm. A stimulus recognised as warm did not become "hotter" on the affected hand until it was raised to between 40° and 45° C.

Thus, in conclusion, whenever a thermal stimulus can produce discomfort this will be greater on the affected than on the normal side. Should the appreciation of heat and cold be sufficiently preserved this discomfort will be thought to imply a higher or a lower grade of temperature in the stimulating object; it will seem "hotter" or "colder" than the same temperature on the normal side. If thermal sensibility is equally perfect on the two halves of the body the excessive response will begin as soon as the stimulus seems definitely cold. But it will not seem "hotter" on the affected side until the temperature of the stimulus reaches about 45° C. or above.

(*d*) *Visceral Stimulation.*

Discomfort in its purest form is produced by stimulation of the viscera, and we therefore compared the condition of testicular sensibility on the two sides in patients who showed this over-response to painful stimuli.

If care is taken not to pinch the scrotum, the characteristic testicular sensation, a sickening discomfort, can be evoked with no other accompaniment than a sensation of not unpleasant pressure. Many patients complained that the discomfort was more intense in the testicle of the affected side. Pressure sufficient to produce "a slight feeling" only on the normal side caused on the affected side a widespread expression of discomfort and brisk cremasteric movements of the opposite testicle.

The glans penis is endowed with a peculiar form of sensibility which differs normally from that of the skin in the absence of the more discriminative faculties (Rivers and Head). Heat and cold can be distinguished, but the finer grades of temperature are not appreciated. A prick causes a more widely spread sensation and is more unpleasant than over the rest of the normal skin. In fact, the glans penis is an organ endowed chiefly with the more affective elements of cutaneous sensibility, and it is therefore a peculiarly appropriate field for examination in cases which exhibit the over-reaction on the abnormal side.

When the glans is pricked with such an instrument as the algesimeter the same strength of stimulus may be necessary to evoke pain on the two halves of the organ; but the discomfort described by the patient and obvious from his expression is greater on the abnormal than on the normal portion.

(*e*) *Scraping, Roughness.*

All the stimuli considered so far contain for the normal person some obvious element of pain or discomfort. But in these cases of over-reaction on the affected side scraping the palm or the sole of the foot, moving a rough object over the skin or even rubbing the hairs may evoke an unpleasant sensation, unlike that from the normal half of the body.

The difference between the two sides is, as a rule, most evident when the observer gently scrapes with his fingers the patient's palm. Under normal conditions this is not unpleasant; but on the affected side the patient cries out and attempts to withdraw his hand. His face is contorted with discomfort. One patient complained: "It is a horrid sensation as if my hand were covered with spikes and you were running them in; it is not painful but very unpleasant." Frequently this sensation spreads widely, running up the arm or the leg, and is always started with peculiar ease from the sole of the foot (Roussy [34], Case 1).

This excessive response to scraping is frequently a striking feature during examination with the Graham Brown æsthesiometer. This instrument serves to estimate the appreciation of roughness by measuring the extent of the protrusion of a

tooth from a spherical surface which is necessary in order that it may seem "not smooth." We not uncommonly found that the "raking" sensation produced by this instrument was greatly exaggerated on the affected half of the body. But in no case was the threshold lowered. In some it was equal on the two sides and in others a greater protrusion was required to evoke a sensation, but in the large majority the discomfort produced was greater on the affected side.

Occasionally, even the rubbing of the smooth surface over the affected parts caused an uncomfortable tingling which confused the patient and rendered measurement impossible. In one case the instrument produced no sensation of roughness, but the tingling and discomfort were intense. Many of these patients complained that they could not be shaved on the affected cheek because it seemed as if the razor was "passing over a raw surface." Some objected to having the hair cut on the affected half of the head because of the discomfort, and others complained of the pain caused by the attempt to cut their nails.

Thus in cases where the affected parts react more strongly to painful stimuli it may happen that even scraping with the fingers, the application of rough objects to the skin, shaving, cutting the hair or nails may cause discomfort or produce a more unpleasant sensation than on the normal side.

(f) Tickling.

When the tips of the fingers are gently moved over the palm or the sole, or when the ears and other hair-clad parts are stimulated with cotton-wool, a tickling sensation can be produced in most normal persons. This is not unpleasant, and in some people the movements of withdrawal which result are accompanied by smiles of amusement. But in those cases characterised by an over-response to painful stimuli tickling is usually unpleasant. Several patients insisted that the sensation produced on the normal side was not disagreeable, whilst that from the abnormal parts was quite different and unpleasant. In all such cases the reaction was greater on the affected half of the body.

B.—*The Response to Pleasurable Stimuli.*

So far we have considered over-reaction of the affected half of the body to stimuli which are in themselves unpleasant, or are capable under certain conditions of evoking an unpleasant sensation. We were anxious to discover if sensations normally accompanied by a pleasurable feeling-tone also produced a similar over-reaction.

Unfortunately, the greater number of the methods applicable for the measurement of sensibility either produce discomfort or, like the tests for weight and for posture, evoke an entirely indifferent sensation. But in the milder degrees of heat we possess a measurable stimulus endowed with a pleasant feeling-tone. In the majority of cases, however, which showed an over-reaction to the uncomfortable aspect of a stimulus, sensation was at the same time more or less gravely lost; and this loss was particularly liable to fall upon that portion of the thermal scale which normally yields a sensation of pleasant warmth; in such cases this test is usually inapplicable.

On the other hand, in a few cases when thermal sensibility was abolished warmth applied over a sufficiently large surface evoked a feeling of pleasure. Thus one of our patients found a hot-water bottle pleasant and soothing to the affected foot, but did not recognise that it was warm until he touched it with some normal part. In the same way many patients found the warm hand of the observer unusually pleasant on the abnormal side, although no such manifestations of pleasure were produced when it was applied to normal parts of the body. In one case we were able to show that the patient could not recognise any thermal stimulus as such, and yet over the affected half of the chest large tubes containing water at from 38° C. to 48° C. evoked intense pleasure. This was shown not only by the the expression of her face but by her exclamations, "Oh! that's lovely; it's so soothing, so very pleasant." Temperatures of 50° C. and above, or of 18° C. and below, caused great discomfort exactly as in most of these thalamic cases.

Several of our patients, however, were able to appreciate heat as low as 34° C. on the affected half of the body. Here, whenever the sensation evoked was one of pleasant warmth, the pleasure was obviously greater on the affected side. In one case a tube containing water at 38° C. applied to the normal palm was said to be warm, but the patient cried out with pleasure when it was placed in the affected hand. His face broke into smiles, and he said, "Oh! that's exquisite," or "That's real pleasant." Another patient said, "It seems on both hands, but it is more soothing, more pleasant on the affected palm."

Cold has no pleasurable element—at any rate, during the greater part of the year in this country. As soon as a sensation of cold is produced it is said to be "colder" and "more uncomfortable" on the affected half of the body. The threshold, or point at which a stimulus is said to become cold, generally lies somewhere between 24° C. and 27° C., and as soon as the sensation of coldness is well developed this discomfort begins. So far we have been unable to find any temperature which produces a sensation of pleasurable cold.

Thus, in conclusion, we find that in cases where the pleasurable aspect of heat can be appreciated the pleasure is accentuated on the affected side, yet the threshold for the appreciation of heat is never lowered and may even be raised on the side of the excessive reaction.

C.—*The Behaviour of the Affected Half of the Body in States of Emotion.*

In the preceding sections we have seen that the two halves of the body respond differently to affective stimuli. But no one seems to have recognised that states of emotion may evoke different manifestations on the two sides; not only can pleasant and painful stimuli produce a stronger reaction when applied to the affected parts, but the two halves of the body may behave differently to mental states of pleasure and discomfort.

Music is peculiarly liable to evoke a different reaction on the two halves of the body. One of our patients was unable to go to his place of worship because he "could not stand the hymns on his affected side," and his son noticed that during the singing his father constantly rubbed the affected hand.

Another patient went to a memorial service on the death of King Edward VII. As soon as the choir began to sing a "horrid feeling came on in the affected side, and the leg was screwed up and started to shake." The characteristic so-called choreiform movements were a prominent feature in this case, and whenever the unpleasant sensation was evoked in the affected side these movements were accentuated. The singing of a so-called comic song left her entirely cold, but "A che la morte" produced so violent an effect upon the abnormal half of the body that she was obliged to leave the room. In this case indifferent sounds, such as the note of a tuning-fork or sound of a bell, produced no abnormal effect, and closing the ear of the affected side made no difference to the character or intensity of the response.[1]

A highly educated patient confessed that he had become more amorous since the attack, which had rendered the right half of his body more responsive to pleasant and unpleasant stimuli. "I crave to place my right hand on the soft skin of a woman. It's my right hand that wants the consolation. I seem to crave for sympathy on my right side." Finally he added, "My right hand seems to be more artistic."

Thus, not only does the abnormal half of the body respond more vigorously to the affective element of a stimulus, but an over-reaction can also be evoked by purely mental states. The manifestations of this increased susceptibility to states of pleasure and pain are strictly unilateral and may lead to many curious complications.

3.—THE LOSS OF SENSATION WHICH MAY BE ASSOCIATED WITH LESIONS OF THE OPTIC THALAMUS.

Associated with this over-reaction to painful stimuli, some loss of sensation will always be manifest on the affected half of the body. In some cases the amount of this loss is so insignificant that, as it can be discovered by measurement only, we can imagine the existence of the over-reaction without it. But up to the present time we have not seen a

[1] Occasionally, however, auditory stimuli produce an increased reaction on the affected side exactly in the same way as pain and extremes of temperature. Such a case was described by Merle [22], and we have also seen an instance of this condition. This patient complained that any continuous sound and all noises upset him. When a tuning-fork was held before either ear it evoked obvious discomfort and gradually became intolerable. At the same time the spontaneous movements became extremely violent. It was difficult to be sure that the fork placed before one ear was a more potent cause of discomfort and exaggerated movement in the affected arm than when it was placed before the ear of the opposite side; but after testing him on many occasions, we came to the conclusion that the effect was greater if the sound affected the ear of the abnormal side of the body. There was, however, no doubt that he disliked the sound more in this ear than in the normal one.

patient in whom this excessive response was not accompanied by some sensory loss. It may vary in amount from a diminution so slight that it is scarcely recognisable up to a destruction of all forms of sensibility so severe that only the grossest stimuli can be perceived.

(*a*) *The Appreciation of Posture and Passive Movement.*

With lesions of the optic thalamus and neighbouring parts the appreciation of posture and passive movement suffers more frequently than any other sensory quality. Sometimes the ordinary rough tests reveal no obvious defect, although measurement shows that the recognition of the position of the hand or the power of appreciating passive movement is less accurate on the affected side. In other cases these functions are completely abolished. Between these two extremes all grades of diminished appreciation of posture and of passive movement could be discovered. These two functions were always affected together, except in two cases where the defect in the appreciation of passive movement was slight and lay close to the limits of experimental error.

(*b*) *Tactile Sensibility.*

Here again we find the same extraordinary divergence in the amount of the sensory loss. In five cases the tactile threshold, measured with von Frey's hairs, was identical on the two hands, but in the majority some more or less grave deviation from the normal was discovered on the affected side. Sometimes the affected parts may be entirely insensitive to the tactile hairs, and even considerable pressure may not be appreciated. But frequently the loss of tactile sensibility is much less extreme, and is manifested simply by a raised threshold.

Another difficulty that may prevent the demonstration of a tactile threshold, by means of von Frey's hairs or with graduated pressure, is the occurrence of involuntary movements. Many of these patients show curious irregular movements which may not always be present, but are liable to start when the affected side is stimulated. These movements arising involuntarily may be mistaken under these conditions for touches. The longer the testing is continued the more accentuated these movements become, and all demonstration of a threshold is then impossible.

To sum up, the tactile threshold may be normal on both sides in the cases with which we are now dealing; or it may be raised to a greater or less extent, even up to complete abolition of sensibility to measured tactile stimuli. Accessory sensations, or the misapprehensions of involuntary movements, may confuse the records, but the loss of threshold and irregular response, so characteristic a consequence of cortical disease, is not found as the result of lesions at this level of the nervous system.

(*c*) *Localisation.*

The power of recognising the position of a stimulated spot was more or less grossly affected in 12 out of 24 cases. This faculty may be so profoundly disturbed that a touch on the hand is referred to the same half of the face or trunk. More commonly the patient complains that he has no idea where he has been touched. "I feel you touch me but I can't tell where it is; the touch oozes all through my hand." Although the method we have generally used forces him to recognise that he has been touched somewhere on the hand, the patient frequently gives up all attempts to determine the spot, saying, "I have no idea where you touched me."

Wherever localisation is affected the unpleasant sensation evoked by painful stimuli may spread widely over affected parts. When, for instance, the sole has been pressed with the algometer, the pain may occupy the whole of the leg below the knee, and the patient does not recognise that the instrument was applied to his foot.

(*d*) *Heat and Cold.*

Out of 24 patients who showed signs of a thalamic lesion 22 responded excessively to the unpleasant aspect of heat and cold. In 9 of these cases the threshold for thermal stimuli was the same on the two sides, and but for the over-response sensibility to heat and cold appeared to be normal; the range of discrimination was identical on the two halves of the body. This class is peculiarly interesting, for in them may appear the remarkable over-response to pleasurable heat we have already described.

But not infrequently all appreciation of heat and cold is abolished, and ice and water at over 50° C. evoke nothing but discomfort. This sensation is the same whichever of the two extremes is used; the patient cannot tell the difference and may not recognise the cause of the unpleasant sensation.

Occasionally the insensibility is less profound and temperatures below 26° C. and above about 40° C. may evoke a response from the affected half of the body. But this response may be the same for heat and cold; water above 40° C. and below 26° C. produces the same sensation and may therefore be called indiscriminately hot or cold.

Throughout all these cases, where the loss of thermal sensibility was not absolute, a threshold could always be determined. It might be the same on the two sides, or it might be more or less raised on that half of the body which showed an excessive response. But never did we find that remarkable loss of threshold and inability to discriminate between two temperatures, both of which were recognised to be hot or to be cold, so characteristic a feature with cortical lesions.

(*e*) *The Compass-test.*

In order that this test may be applied the patient must of necessity be able to recognise that he is being touched; tactile sensibility must not be gravely diminished. But many of the patients who reacted excessively to painful stimuli on the abnormal side were so insensitive to touch and pressure that the contact of two points produced no sensation and the compass-test could not be employed.

Another disturbing element in these cases is the widespread unpleasant tingling frequently evoked by a firm touch; this tingling is liable to distract the patient's attention and confuse the records greatly.

Excluding these sources of error, a considerable number of cases still remain in which the power of recognising the "two-ness" of the compass-points was disturbed although each touch evoked a sensation of contact. But by widening the compasses a distance could usually be found at which a perfect series of answers could be obtained, and the records improved each time the distance between the two points was increased. Thus in such cases it is possible to obtain a true threshold.

In conclusion, we have found that the compass-test cannot be applied in many of these cases owing to the gross loss of tactile sensibility or to the confusion produced by the abnormal tingling. But whenever the measured tactile threshold is the same on the two halves of the body the power of discriminating two points will be unaffected; and yet the two faculties are not directly dependent, for two pricks cannot be discriminated more easily than the contact of two blunt points.

(*f*) *The Appreciation of Weight.*

Throughout this research we have adopted three methods of testing the appreciation of weight. A weight is placed in each palm and the patient by moving them up and down "weighs" them and estimates which is the heavier. Secondly, a weight is placed on some part of the fully supported hand, removed, replaced rapidly by another weight of the same size, and the patient chooses the heavier. Lastly, a weight is placed upon the hand and further weights are added or subtracted. The patient replies whenever he recognises that the weight has become heavier or lighter. Now it is obvious that the last two methods depend mainly upon an appreciation of relative pressure, whereas the first demands a power of estimating movement and the force employed in lifting the hands.

At the level of the nervous system with which we are now engaged this difference comes out in a remarkable manner. In some cases the only discoverable loss of sensation consisted in a diminished recognition of posture and passive movement, and correlated with this loss was an inability to distinguish weights placed simultaneously on the unsupported hands; and yet the patient may be able to recognise the relation between two weights, placed one after the other on the affected hand when fully supported. Conversely, any diminution of tactile sensibility at once affects the power of appreciating relative pressures, and so interferes first with the estimation of weights applied consecutively, and later even with the ability to recognise whether an object resting on the palm has become heavier or lighter.

Thus at this level of the nervous system the power of estimating the relation between two weights depends on the integrity of both tactile and postural impulses. The faculty of estimating the relative weight of two objects placed one

in each unsupported hand demands a correct appreciation of posture and movement. But appreciation of two weights placed consecutively on the supported hand, and the power of recognising addition to, or removal from, the weight of an object lying in the palm, require a normal tactile sensibility.

(*g*) *The Appreciation of Size, Shape, and Form in Three Dimensions.*

No tests for the recognition of size, shape, or form can be applied unless the patient is able to appreciate the contact of objects placed in his palm. In five of our cases this was impossible owing to gross loss of tactile sensibility, whereas on the contrary in six cases the lesions which produced an over-response to painful stimuli had in no way affected the power of recognising size, shape, or form.

Between these two extremes lies a group in which all three forms of recognition were more or less gravely defective. Although the defective recognition of size, shape, and form, which may accompany the over-response to painful stimuli, appears at first sight to resemble that due to cortical lesions, more careful examination shows that they may differ fundamentally from one another. Ordinary clinical tests employed in the usual rough manner are incapable of demonstrating this difference. But when a series of tests are carefully carried out the patient is able, in most cases, to recognise a difference in size, provided it is sufficiently large; a true difference-threshold can be obtained. He does not give up all attempts to estimate the relative size of the test-objects, saying, as in the case of a cortical lesion, "I have no idea." He may make mistakes in their relative size or may believe that the two objects are equal, but retains an impression that they possess a size to be compared. Ultimately, if the difference between them is made sufficiently great, his answers grow increasingly more accurate.

Unfortunately we have no method of reducing the tests for shape and form to measure in the same way; for increasing the size of objects used for testing shape beyond certain limits prevents their uniform application to the palm, and any considerable reduction makes it impossible to recognise them on the normal hand. Even the size of the objects used as tests for form in three dimensions cannot be varied greatly, since it is necessary that the patient should be able to roll them between his fingers and palm.

In spite of these difficulties the patient usually attempted to give some name to the object, provided tactile sensibility was not greatly impaired, and he could move it to and fro in his hand. Not uncommonly he said, "I have an idea of the shape, but it seems numb." Moreover, in the majority of instances a certain number of right answers were given, especially to the easier tests, such as the circle or the sphere, and the familiar objects commonly used in clinical examination were frequently recognised.

Thus, in conclusion, we find that in these cases the recognition of size, shape, and form may be intact, or more or less gravely affected. In some instances this loss of recognition is due to gross defects in tactile sensibility. But in a considerable group of cases the difference-threshold is raised; here all idea of size, shape, and form is not abolished, as in the cortical cases, but a greater difference than normal is necessary before it can be appreciated. In the same way the patient retains an idea that the objects have a shape and form, but finds difficulty in recognising what it may be.

(*h*) *Vibration.*

The loss of sensation must be unusually gross before the vibrations of a tuning-fork cease to be appreciated. In three cases only was the affected half of the body insensitive to this stimulus, and in all of them other forms of sensation were gravely affected.

Usually the vibrations of the tuning fork are appreciated on both halves of the body, but the stimulus appears to last a shorter time on the abnormal side. If the tuning fork is placed upon some point of the affected side and as soon as it can no longer be appreciated is rapidly transferred to a corresponding part on the normal half of the body, the patient will continue to recognise the vibration for a further period, which may even extend to 15 seconds. This shortened appreciation of the tuning fork is one of the most characteristic features of the loss of sensation associated with the over-response to painful stimuli. It occurred in 15 of our cases, and was independent of that unpleasant feeling tone, evoked by vibration, of which we have already spoken. At the same time the patient complains that the vibrations are "not so plain" on the abnormal half of the body and in certain cases the fork seems to be vibrating less rapidly on the affected side.

(*i*) *Roughness.*

In three cases only was the loss of sensation sufficiently gross to prevent the appreciation of roughness produced by Graham Brown's æsthesiometer. This instrument with its graduated projection is peculiarly liable to evoke an unpleasant sensation, and occasionally confusion is produced because even the smooth surface of the instrument may evoke a widespread tingling. But in most cases it is easy to show that the threshold for the appreciation of roughness as measured with this instrument is the same on the two halves of the body.

(*k*) *Summary of the Loss of Sensation.*

We can now sum up the forms assumed by the loss of sensation which may accompany the over-reaction to affective stimuli in these cases.

No sensory function is so frequently affected as the appreciation of posture and the recognition of passive movement. The amount of this loss varies greatly from a scarcely measurable defect to complete want of recognition of the posture of the limbs on the abnormal half of the body.

Tactile sensibility is frequently diminished; but, excepting in a few cases where all appreciation of contact was destroyed, a threshold could be obtained. It was always possible to show that increasing the strength of the stimulus improved the character of the answers unless the observations were confused by the disagreeable tingling or other accessory sensations.

Localisation of the spot touched was defective in half the cases where sensation was sufficiently preserved to carry out accurate tests. This inability to recognise the site of stimulation was equally great whether the patient was pricked or touched. In cases where localisation was gravely affected, the disagreeable sensation, so easily evoked, tended to spread widely on the abnormal half of the body. A prick on the hand may cause an extremely painful sensation in the cheek or side, and sometimes the patient simply recognised the stimulus as a change within himself, and did not refer the discomfort from which he suffered to the action of any external agent.

Sensibility to heat and cold may show all degrees of change from total loss to a slight increase of the neutral zone. Heat and cold are not dissociated; and if one form of sensation is lost, the other will be gravely disturbed. The apparent exceptions arise from a misinterpretation of the sensation evoked on the affected half of the body by high or low temperatures.

Not infrequently the compass-test cannot be carried out because of the gross loss of sensation and inability to recognise contact; but whenever this method can be applied a threshold can be worked out, and widening the distance between the points increases the accuracy of the answers.

The power of estimating the relation between two weights is frequently disturbed on the abnormal half of the body. If the appreciation of posture and movement is affected, the patient can no longer recognise the identity or the difference of two weights placed in the unsupported hands. But so long as tactile sensibility is not diminished, he can still estimate the relation between weights applied one after the other to the same spot, and can recognise the increase or diminution in weight of an object already resting on the hand.

The appreciation of relative size is often disturbed in these cases, but with care it is usually possible to demonstrate a difference-threshold. Shape and form in three dimensions are frequently not recognisable on the affected hand. But if tactile sensibility is not grossly affected, the patient usually retains an idea that the object possesses a form, and may obtain a considerable percentage of right answers.

Vibration of the tuning fork was recognised by all but three of our patients. In almost every case, however, the length of time during which it was appreciated was shorter, and sometimes the rate of vibration was thought to be slower, on the affected half of the body.

Roughness as tested with Graham Brown's æsthesiometer was always recognised, except in three cases where the loss of all forms of sensation was extremely severe. Usually the threshold was the same on the two sides, but it was occasionally raised on the affected hand.

(To be concluded.)

RUPTURE OF THE UTERUS:

A SERIES OF EIGHT CASES, INCLUDING THREE CASES TREATED SUCCESSFULLY BY OPERATION.

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THE best method of treating cases of rupture of the uterus is still one of the problems of obstetric medicine upon which a good deal of difference of opinion exists; nor, indeed, is it likely that this difference will be entirely overcome, since these cases may vary greatly both in the severity of the symptoms and in the degree of the injury. If we are to be in a position to come to any certain conclusion, it will be necessary for a considerable number of cases to be fully recorded from lying-in hospitals and clinics, so that by a comparison, so far as this can be done, of the results obtained by different modes of treatment under much the same conditions, we may be able to formulate rules to guide us in our treatment of these difficult cases.

I propose in this paper to put on record the cases which have occurred in the extern maternity department of University College Hospital during the 18 years from Jan. 1st, 1894, to Nov. 30th, 1911. During this period 33,781 women have been confined in the department, and among these cases there were eight cases of rupture of the uterus, or a frequency of 1 in 4222.

The details of the cases are shortly as follows.

CASE 1 (Reg. No. 690).—The patient was delivered spontaneously in the extern maternity department on March 27th, 1894, the child being born before the arrival of the student called to the case. She had had five previous normal pregnancies. After delivery she became markedly collapsed, and complained of severe pain in the lower part of the abdomen on the left side. With treatment she recovered to some extent, but died six hours after her confinement, the exact condition not having been diagnosed. At the post-mortem examination an incomplete tear 6 cm. long of the left side of the cervix was found extending into the lower uterine segment, and opening up the base of the broad ligament. The lower end of the tear was situated 1½ cm. above the edge of the posterior lip of the cervix. The presentation was a vertex, the labour rapid and apparently quite normal, and on this account I concluded wrongly that the case was probably not one of rupture of the uterus. The specimen is in the University College Hospital Medical School Museum, No. 731.

CASE 2 (Reg. No. 1922).—The patient was confined in the extern maternity department on August 25th, 1894. She had had six children, all delivered with great difficulty with forceps. The true conjugate measured 3¼ inches. The child, weighing 8 lb. 10 oz., was delivered by the craniotractor after perforation, forceps having failed. On examination a tear in the right side of the cervix, passing into the right broad ligament, was found. The patient's condition did not admit of any operative treatment, and she died ten hours after delivery. (University College Hospital Medical School Museum, specimen No. 726.) The case is fully reported in the Transactions of the Obstetrical Society of London, Vol. XXXVI., p. 316, 1894.

CASE 3.—This case, under the care of Dr. Herbert Spencer, has been reported by him in the Transactions of the Obstetrical Society of London, Vol. XLII., p. 18, 1900. The patient, a multipara with a contracted pelvis, the conjugata vera measuring 3½ inches, was delivered by podalic version, on account of a shoulder presentation, on Oct. 29th, 1896. The child was delivered alive, but after delivery the patient became greatly collapsed and bled freely, and after removing the placenta a tear was found extending into the broad ligament. No communication with the peritoneal cavity could be found. The cavity in the broad ligament was plugged with iodoform gauze, and the woman made an excellent recovery.

CASE 4 (Reg. No. 250).—The patient, a six-para, was delivered in the extern maternity department on Feb. 3rd, 1897. The left shoulder was presenting, and the arm was outside the vulva. The child was easily delivered by internal version by the obstetric assistant. The patient became markedly collapsed immediately after delivery, and vaginal examination revealed an extensive tear of the left side of the cervix and lower uterine segment extending into the peritoneal cavity. An attempt was made to plug the tear with iodoform gauze, but the patient died 45 minutes after delivery. (University College Hospital Medical School Museum, specimen No. 734.)

CASE 5 (Reg. No. 1352).—The patient, aged 32, was admitted to University College Hospital on July 3rd, 1904. She was a very fat woman with a pendulous abdomen, and was delivered by forceps of a stillborn child weighing 13½ lb. The shoulders and trunk were extracted with considerable difficulty. On examination after delivery it was found that there was a large tear in the lower uterine segment and in the vagina, on the left side, opening into the peritoneal cavity. The tear and the vagina were plugged with iodoform gauze under an anæsthetic and saline transfusion was carried out, but the patient died six hours later. (University College Hospital Medical School Museum, specimen No. 722.)

The three following cases were treated by operation and recovered, and they are therefore recorded in greater detail.

CASE 6 (Reg. No. 247).—*Complete rupture of the uterus, following delivery by traction on the foot in a case of placenta prævia, at the fifth month of pregnancy; suture of the tear; recovery.*—The patient, aged 40, a multipara, was admitted into University College Hospital on Jan. 26th, 1911. She had had three children. At the first confinement a part of the placenta was retained and had to be removed manually. After the second child she was laid up in bed for three weeks, and at her third confinement she sustained a bad tear of the perineum and rectum. Her last period had occurred at the beginning of September. About the middle of December the patient began to bleed, and this continued almost every day until three weeks before admission to the hospital. Since this date she had been confined to bed with continuous hæmorrhage.

On admission to the ward the patient's general condition was good; some vaginal hæmorrhage, however, was going on. The uterus was the size of the organ at the twentieth week of pregnancy, tense, and somewhat cystic to the feel on palpation. No fœtal parts could be felt and no fœtal heart sounds heard.

As the hæmorrhage continued and the cervical canal admitted two fingers, the provisional diagnosis of a placenta prævia having been made, a sound was passed and the membranes were ruptured at 2 P.M. on Jan. 26th. Slight bleeding continued, but only very slow progress was made in the dilatation of the cervix. At 8.45 P.M. on the 27th the cervix admitted 2½ fingers, and a small foot could be felt presenting. The placenta could be readily felt on the anterior wall of the uterus reaching to the internal os. Chloroform was administered, the other foot was brought down by the obstetric assistant, and the fœtus was readily extracted with some traction. During this procedure, however, the cervix was apparently badly torn, and severe hæmorrhage followed the delivery of the fœtus. As this could not be controlled by massage of the uterus the assistant introduced his hand into the uterus to extract the placenta, and apparently during this manœuvre the tear in the cervix was prolonged into the lower uterine segment, and the peritoneal cavity was opened up. A gauze plug was packed into the tear, and I was sent for.

When I saw the patient at 9.20 P.M. her general condition was good. There was some hæmorrhage going on from the vagina, and on examination a tear was found in the posterior lip of the cervix on the right side involving the lower uterine segment, with an opening into the peritoneal cavity through the lateral portion of the pouch of Douglas, readily admitting four fingers. The torn lips of the cervix were drawn down with vulsella, after the peritoneal cavity had been swabbed out, and the edges of the tear were approximated with three thick catgut sutures passed from above down. A plug of iodoform gauze was then placed in Douglas's pouch below the tear in the uterus, and the vagina was also plugged with iodoform gauze. The vaginal plug was removed 20 hours later and the plug in the peritoneum on the morning of the third day. At this time a small plug was placed between the lips of the opening in Douglas's pouch, and this was finally removed on the seventh day.

For the first four days after the operation the temperature was slightly raised, the highest point reached being 101·4° F. The patient made an uninterrupted recovery, and left the hospital with the wounds soundly healed on the seventeenth day.

CASE 7 (Reg. No. 1105). *Complete rupture of the uterus following an attempt at the performance of version for a transverse presentation; Cæsarean section followed by total hysterectomy; recovery.*—The patient, 38 years of age, was admitted into University College Hospital on April 6th, 1911. She had had six children and no miscarriages. All the labours had been normal, except that with the second child the shoulder presented. The last period had occurred at the end of July, 1910. Labour pains started at 4 A.M. on April 5th, at about the thirty-sixth week of pregnancy, and the membranes ruptured at 10 A.M. on the 6th.

When the patient was seen by the obstetric assistant at her own home he found that the right arm and the pulseless cord were prolapsed into the vagina. Uterine contractions were present, but feeble. The mother's pulse was 80. The cervical canal was dilated to the size of a crown piece, and an attempt was made by the obstetric assistant to replace the arm and cord with a view of performing, if possible, bipolar version. On attempting to replace the arm there was suddenly a smart hæmorrhage, and the operation was accordingly abandoned. On a further examination a tear was found in the anterior and lateral fornix large enough to admit the whole hand into the peritoneal cavity.

The patient was admitted into the hospital from the extern maternity department about 2.30 P.M., a large iodoform gauze plug having been inserted into the tear. On examination the right arm of the child was found to be prolapsed into the vagina with the cord, the child lying with its back posterior, and the head in the right iliac fossa. The patient's condition was now very grave, and she was practically pulseless, blue, and cold. The tear was found to be situated in the utero-vesical pouch mainly to the left of the middle line. The uterus was not tetanically contracted. Although the child was obviously a small one, I felt that any attempt to deliver by version would certainly increase the extent of the tear, and it was therefore decided to perform abdominal section. Two pints of normal saline solution were transfused into the left median basilic vein, and the abdomen was prepared with iodine.

On opening the peritoneal cavity a considerable quantity of free blood was found. The tear in the anterior fornix was complete, involved the cervix to a slight extent to the left of the middle line, and the child's left shoulder was seen presenting in the tear. The left broad ligament was almost entirely torn through, so that the left Fallopian tube was seen passing in an arch-like manner to the left side of the pelvis. The peritoneum was cracked in several places on the anterior surface of the uterus to the right of the middle line, and hæmorrhage had occured under the peritoneum.

The uterus was rapidly incised by enlarging the tear in the anterior wall of the cervix upwards to a sufficient extent and the child and placenta were extracted. The broad ligaments were clamped, leaving the right ovary and removing the left. The tear in the utero-vesical pouch of peritoneum was continued round to either side with scissors, the uterine arteries were clamped, and the uterus was removed by cutting across the posterior vaginal wall. The clamps were replaced by silk ligatures. There was very little hæmorrhage during the operation. The vesical flap of peritoneum was sewn to the rectum over a plug of iodoform gauze brought out through the vagina, and the abdomen was closed with through-and-through silkworm gut sutures, with interrupted silk mattress sutures for the fascia, and continuous horse-hair suture for the skin.

The operation lasted 40 minutes. Two or three pints of saline solution were left in the abdomen at the end of the operation. A

hypodermic injection of 10 minims of pituitary extract was administered. The patient's condition at the end of the operation was very good, the pulse about 80, and of fair volume. The fœtus was a small macerated child weighing 2lb. 10 oz.

Three hours after the operation the patient was put up in Fowler's position, and except for a little bronchitis she made a rapid recovery and left the hospital quite well on the twenty-eighth day. The vaginal plug was loosened a little each day, and it was finally removed under gas on the fifth day. The temperature remained slightly elevated for the first ten days after the operation, the highest point reached being 101·2° F., whilst the pulse never exceeded 100 per minute. (University College Hospital Medical School Museum, specimen No. 735*a*.)

CASE 8 (Reg. No. 1116). *Complete rupture of uterus at full term; cephalic presentation; delivery by version; total abdominal hysterectomy; recovery.*—The patient, 34 years of age, was admitted into University College Hospital on April 8th, 1911. She had had three children in two confinements, and on each occasion the labour was normal. She was seen at 2 P.M. on the 7th by the obstetric assistant on duty in the Extern Maternity District on account of a prolonged second stage. Labour had commenced at 9 P.M. on the 6th, and when seen the cervix was fully dilated. The head was in the pelvic cavity, and an attempt was made to apply the forceps. On the introduction of the lower blade, however, the head appeared to recede out of reach above the pelvic brim and severe vaginal hæmorrhage occurred. On further examination a hand was found to be presenting, and what was thought to be the edge of the placenta was felt; there had been a considerable amount of hæmorrhage during the first stage. A foot was brought down and the child was delivered stillborn at 4 P.M. with some little trouble, the arms becoming extended. No undue force appears to have been used in introducing the blade of the forceps, and no undue difficulty was experienced in bringing down the leg. No contraction of the pelvis was present. The placenta was expressed 20 minutes after the delivery of the child.

The patient complained of severe abdominal pain with the onset of the severe hæmorrhage soon after the head receded. The possibility of a rupture of the uterus having occurred was not realised, and when the woman was seen by the obstetric registrar next day at 11 A.M. she was found to be collapsed and dyspnœic, with blue lips, and gave a history of having bled fairly freely all night. The pulse was very small, 124, and the abdomen was distended and very tender. She had vomited several times, and the bowels had not acted. On vaginal examination a tear could be felt passing into the peritoneal cavity. The patient was at once brought up to the hospital in a cab.

On admission at 12 noon on April 8th on pelvic examination I found a large tear in the left postero-lateral vaginal fornix and the cervix, through which the hand could be passed into the peritoneal cavity; a catheter was passed and 8 ounces of clear urine were drawn off. The uterus, well contracted, lay to the right of the middle line. The patient was put to bed for a couple of hours to recover from the shock of moving her to the hospital.

At 2 P.M. abdominal section was performed, the abdomen being prepared with iodine, a simultaneous transfusion of 1½ pints of normal saline solution into the left median basilic vein being carried out. A hypodermic injection of digalen (6 minims), pituitary extract (15 minims), and ernutine (10 minims) was also administered. On opening the peritoneal cavity the intestines were found considerably distended and injected, the serous coat was dull and covered in places by patches of lymph; no pus, however, was present. There was a good deal of free blood in the peritoneal cavity, and the tear was found to extend through the cervix and the lower uterine segment, tearing through the left broad ligament into the peritoneum. A large hæmatoma was present in the cellular tissue on the left side.

The remains of the left and the right broad ligaments were clamped internal to the ovaries, and the bladder was turned down. The uterine arteries were then clamped, and the whole uterus was removed, the vessels being subsequently tied with silk ligatures. The peritoneal cavity was swabbed out, and an iodoform gauze plug was passed from the peritoneal cavity into the vagina, and another was brought out from the stump of the vagina through the lower angle of the abdominal wound. The abdomen was closed with through-and-through silkworm gut sutures, silkworm gut mattress sutures for the fascia, and a continuous horse-hair suture for the skin.

The operation lasted 35 minutes. The condition of the patient improved somewhat under the anæsthetic, the pulse at the conclusion being of fair volume and 136 per minute. The operation was rendered difficult by the distended condition of the intestines.

On the patient's return to the ward she was placed in Fowler's position. During the afternoon and evening there was very frequent vomiting. At 11 P.M. the pulse was very weak, and she was complaining of severe spasmodic pain in the upper part of the abdomen, which was very tender and distended. A hypodermic injection of pituitary extract (15 minims) every eight hours, strychnine (5 minims), and digalen (6 minims) every four hours, and eserine salicylate (4 minims) every six hours, was ordered. One grain of calomel and 1 grain of elaterine were given by the mouth.

During the next day (April 9th) the vomiting was almost continuous and the abdomen was more distended. At midday a soap-and-water enema was given, and flatus was passed with some liquid fæces. The pulse was now 145 and very small. During the afternoon continuous rectal injections of saline solution and glucose were given, about two pints being retained. After this very severe paroxysmal pain was complained of, coming on every two or three minutes and lasting about the same time, and the patient became very restless. The digalen was now stopped owing to the vomiting.

At 5 P.M. the pain was so severe that the woman was shouting in agony. The pulse was 165 and very small. An intravenous infusion was started, and about half a pint had been run in slowly when the patient became collapsed and the pulse at the wrist failed altogether. The infusion was stopped and 10 minims of adrenalin chloride were given intravenously. The pulse gradually returned, as did the pain so severely that a hypodermic injection of heroin (5 minims) had to be given. At 7 P.M. a large liquid motion was passed, the pain became less severe, and the patient more comfortable.

The continuous rectal injection was continued for 3½ hours during the night, and by next morning the condition had much improved. The vomiting ceased, and from this time the pulse-rate became progressively slower and better in quality, and the woman gradually recovered. For some days the bowels were very loose, and the temperature remained elevated for 24 days, varying between 99° and 101·8° F.

The plugs were removed under gas on the fifth day, and the patient left the hospital quite well on the thirty-eighth day after the operation.

The uterus, measuring 18 × 13½ × 11 cm., shows a tear extending for 10 cm. above the anterior lip of the left side, opening into the peritoneum; it does not extend quite to the top of the broad ligament. The cervix is infiltrated with blood, and the posterior lip is much thickened, measuring 3 cm. antero-posteriorly. The wall of the body is also thickened, measuring 5·5 cm. (University College Hospital Medical School Museum, Specimen No. 735.)

Remarks.

These three cases present several points of considerable interest. The first is a good example of traumatic rupture involving the cervix and lower segment, undoubtedly due to the forcible extraction of the fœtus through the partly dilated cervix, and the subsequent enlargement of the tear by the introduction of the hand for the purpose of removing the placenta.

The second case is an example of the same variety of rupture, but due to attempts at the performance of version in what was probably an impacted shoulder presentation, and affecting mainly the vaginal vault, although the left broad ligament was extensively torn as well. Von Winckel maintains that such tears are especially likely to occur in cases of transverse presentation; and no doubt in these cases, owing to the faulty position of the fœtus, there is a liability to marked over-distension of the vaginal fornix, either anterior or posterior.

The etiology of the third case is difficult to explain. On the whole, it appears to be a case of spontaneous rupture due to undue prolongation of the second stage in a multipara. As the head was in the pelvic cavity and the cervix was fully dilated, it is unlikely that the introduction of the forceps played any part in the production of the tear.

Although all three cases were complete tears, they illustrate very varying degrees of severity as regards the symptoms the patients presented. In the first case the general condition of the patient was good, in the second the condition of the patient was very grave, while the third woman appeared to be moribund at the time of the operation. Further than this, there is the interesting contrast that the second patient was still undelivered, while in the case of the third the operation was performed upon a patient who had all the physical signs of commencing peritonitis 24 hours after the time at which the rupture of the uterus probably occurred. The fact that very severe tears of the lower uterine segment may occur in cases of placenta prævia is, of course, well known, but the fact is apt to be overlooked that such tears may be produced at the fourth or fifth month of pregnancy almost as readily as at full term, and often to a degree which seems almost impossible when the consistence even of the head of the fœtus at this period of development is considered.

Of this series of eight cases, in two the tear was incomplete and in six complete. Of the former, one in which the shock alone was treated, the condition remaining unrecognised, died, while the second, Dr. Herbert Spencer's case, recovered after plugging. Of the six cases of complete tears three died and three recovered. Of the fatal cases two were treated by plugging, in one the shock alone was treated, while the three successful cases were all operated upon, one by vaginal suture and two by hysterectomy. The total mortality was 50 per cent. The series of cases is too small to allow of any deductions being drawn, but it illustrates the frequency of this complication of labour—viz., 1 in 4222 confinements—in an extern maternity department among the poor of London, and the cases are fair types of the different varieties of rupture of the uterus.

The problem we have to consider at the present day in regard to the treatment of these cases is concerned mainly with two points—namely, the employment of gauze plugging or drainage per vaginam, so-called conservative treatment, and the performance of abdominal section, with or without removal of the uterus. The particular method of dealing with the uterus after the abdomen is opened is more or less of a detail, and the degree of shock is not likely to be much more increased once the abdomen is opened by suturing the peritoneum over a torn uterus, or by suturing the tear itself, than by the removal of the damaged organ. The real point at issue is, Should we, or should we not, in all complete tears—and for the moment I propose to consider these chiefly—perform an abdominal section, or possibly vaginal hysterectomy, or should we content ourselves with vaginal drainage or plugging?

There are certain conditions in which an abdominal

section is essential—namely, when the child has escaped through the tear into the abdominal cavity, or in most instances where the placenta, after the child has been delivered, is found to have passed through the rent out of the uterine cavity. Even in cases of complete rupture of the uterus, however, the child does not escape into the abdominal cavity so often as might be expected from the statements of some writers. Thus, this did not occur in any one of our cases of complete tear, while in the ten cases recorded by Dr. A. L. Smith[1] the child in two, and the placenta in four, is stated to have been in the peritoneal cavity. Of the three cases recorded by Dr. T. W. Eden,[2] in one the child had escaped from the uterus and in two the placenta. Of Lobenstine's[3] 46 cases of complete rupture the child was in the abdomen in seven instances, or in 13·5 per cent., and the placenta, so far as is stated, in four. The exact position of the placenta is not given in all the cases, but apparently it escapes more frequently from the uterus than does the child.

It is obvious, then, that in the majority of cases of complete rupture of the uterus the child is still in the uterine cavity, and our decision as to the best treatment must be made without the guidance afforded by the presence of the child or placenta in the abdominal cavity. In the greater number of these cases the presence of a tear is only recognised after the child has been delivered, or before it is delivered but while it is still in utero.

The dangers these patients are exposed to are, of course, shock, hæmorrhage, and sepsis. The first is the main cause of death occurring soon after delivery, and in complete tears is usually very severe. Indeed, many patients succumb to shock before it is possible to carry out any treatment at all. This element of profound shock is one of the most important factors, and is the main reason of the heavy mortality which attends the treatment of these cases by abdominal section.

The amount of hæmorrhage that occurs varies very considerably. Of my three cases operated upon, in only one was the hæmorrhage at all severe—namely, in the third case. The danger from hæmorrhage is not only immediate but also remote—that is to say, the shock of the rupture is often greatly aggravated by profuse hæmorrhage occurring at the time, and there is a very great risk, if the hæmorrhage ceases spontaneously, as it sometimes does, that as the shock passes off it will recur and kill the patient.

The exact amount of blood lost is difficult to determine, as the blood escaping externally is usually not measured, and the amount of blood present in the peritoneal cavity or outside the peritoneum is difficult to estimate in the hurry of an abdominal section. The majority of the cases bleed considerably either internally or externally, and no doubt slow oozing of blood often continues, especially into the subperitoneal tissues, after the external hæmorrhage has ceased.

Some writers—Eversmann,[4] for instance—maintain that, as in a large number of the cases, the uterus after the delivery of the child usually contracts and retracts, with a surprising degree of efficiency, the hæmorrhage is arrested by the closure of the vessels in the uterine walls. This contention does not, however, hold good. In the first place, a great deal of the hæmorrhage undoubtedly occurs while the child is still in utero, even when it ultimately escapes into the peritoneal cavity; and in the second place, since the tear in most cases involves the cervix and lower uterine segment, hæmorrhage no doubt continues, as it does in lacerations of the cervix, even although the fundus of the uterus may be well contracted.

An analysis of Lobenstine's 46 cases with regard to this point shows that of 43 in which the information is given, in 30 the hæmorrhage was profuse or severe, and in 13 moderate. Eden suggests that dangerous hæmorrhage occurs in over 40 per cent. of cases of rupture of the uterus; it is, of course, difficult to define what amount of hæmorrhage is dangerous, but probably we are right in saying that the great majority of cases at any rate of complete rupture are accompanied by profuse or severe hæmorrhage. In one of Smith's cases at the post-mortem examination it was estimated that there were between four and five pints of blood present in the peritoneal cavity, while in one of Lobenstine's cases the abdomen is described as being full of blood.

Whatever mode of treatment, then, is adopted, it must be one which will enable us efficiently to arrest the hæmorrhage which may be occurring at the time the patient is seen, and also to guard her from any recurrence of the bleeding later on. The large part played by recurrent hæmorrhage in causing the death of these patients is brought out by Ivanoff's[5] figures, for he has shown, as Eden points out, that the great majority of deaths from hæmorrhage occur not immediately, but within 2 to 12 hours after the rupture—namely, after repeated hæmorrhage or oozing has occurred.

Besides the immediate risk of shock and hæmorrhage and the remote risk of recurrent hæmorrhage these patients all stand a very great chance of succumbing to septic peritonitis or general septic infection, and we are justified in assuming that the main factors in the causation of this risk are the presence of the damaged and possibly infected uterus, and the presence of blood free in the peritoneum or in the cellular tissues.

Any mode of treatment, then, which we may select for dealing with this grave accident of child-bed should fulfil three postulates—viz., it should not increase the shock, it should provide for the arrest of hæmorrhage, both immediate and remote, and it should preserve the patient as far as possible from the risk of dying from septic infection.

Those obstetricians who recommend that cases of rupture of the uterus should, whenever possible, be treated by gauze packing or the provision of free drainage through the vagina, maintain that this method does not increase the shock, that hæmorrhage is prevented by the pressure of the gauze, and that the risk of septic infection is lessened by the provision of drainage through the vagina, and by the avoidance of any great amount of manipulation. Let us now for a moment examine the truth of these three contentions.

The first must be at once conceded; there can be no doubt that gauze packing is the least likely of any procedure to increase the shock.

That gauze plugging in cases of incomplete rupture will probably arrest the hæmorrhage is no doubt true; but it must be borne in mind that in many of these cases the hæmorrhage is not very severe, as, indeed, it is not even in some cases of complete rupture. In a case of complete rupture, however, it requires a very robust faith in the efficacy of gauze plugging as a means of arresting bleeding to enable us to believe that a gauze plug passed into a tear in the uterine wall opening into the peritoneal cavity can have much effect in arresting bleeding by making pressure on the bleeding points. It would be absurd to say that it has no effect of this kind, but that it is a certain means of arresting hæmorrhage, or one that can be relied on in the case of extensive complete tears, is a statement hard to accept. The extreme difficulty of plugging a large tear with gauze was forcibly impressed upon my mind by my experience in Case 4. The results obtained by Lobenstine by this means are exceedingly bad. Thus of his 46 cases 13 were treated by gauze-plugging alone, and of these no less than 12, or 92 per cent., died, figures which appear to eloquently demonstrate the futility of gauze-plugging in cases of complete rupture.

It is, however, quite easy to adduce figures from the literature which present much better results obtained by simple drainage or plugging, so-called conservative treatment. Thus, Eversmann collected 360 cases. Of these, 129 were treated by laparotomy, with 66 recoveries, or 59 per cent., while 78 were treated by drainage or tampons with 49 recoveries, or 63 per cent. Again, of 217 cases collected by Klein[6] 155 of the cases of complete rupture were treated by laparotomy, of whom 68 recovered, or 62 per cent., while 30 were treated conservatively, with 22 recoveries, or 73 per cent. These figures, however, refer to cases published by a large number of different observers and are therefore not of great value.

In view of the fact that different writers quote figures supporting both methods of treatment, in endeavouring to form a correct conclusion we must not rely too much upon statistics unless they include a sufficiently large series of

[1] A. Lionel Smith: Journal of Obstetrics and Gynæcology of the British Empire, vol. xv., No. 6, p. 382, 1909.
[2] T. W. Eden: Ibid., p. 363.
[3] R. W. Lobenstine: Bulletin of New York Lying-in Hospital, vol. vi., No. 2, p. 31, 1909.
[4] J. Eversmann: Archiv für Gynäkologie, vol. lxxvi., p. 601, 1905.
[5] Ivanoff: Annales de Gynécologie et d'Obstétrique, p. 459, August, 1904.
[6] H. Klein: Inaugural Dissertation, Bonn, 1904.

cases. For this reason the figures given by Petrén [7] are of considerable importance, as he has collected a series of no less than 754 cases. Analysing these figures, he finds that, of the whole, 501 were treated conservatively. These include all cases not subjected to laparotomy, and of these 140, or 28 per cent., recovered; while of the 174 cases subjected to laparotomy 82 recovered, or 47 cent., a very striking difference in favour of abdominal section.

If, in spite of these figures, we admit for the moment that gauze plugging fulfils the first two postulates and acts efficiently as a hæmostatic, while it does not increase the shock, how does it fulfil the third demand—namely, the prevention of sepsis?

The mortality from this complication has been estimated to vary between 37 and 74 per cent., and no doubt it accounts for a very large proportion of the later deaths. The best that can be said for gauze plugging is that if properly employed it forms an efficient drain, but that its efficiency as a drain is in inverse proportion to its efficiency as a hæmostatic plug. If, however, the plug is loosened after the first 24 hours, this objection is to a large extent overcome, while if an antiseptic gauze such as iodoform is used the antiseptic properties of the gauze may be of value. The main source of the sepsis, the uterus, however, is not in any way influenced, nor are the raw surfaces from which infection can occur in any way lessened by the use of a plug. On the contrary, they are rather increased in extent by efficient, and therefore tight, plugging.

We are therefore justified, I think, in concluding that while gauze plugging answers one of our postulates fairly well, it fulfils the other two certainly inefficiently, and possibly in many cases very badly.

If now we consider the usual alternative to the use of a gauze plug—namely, abdominal section or vaginal section—we are at once confronted with the difficulty that such a procedure must inevitably tend to markedly increase the degree of shock, which is already almost sufficient in many cases to kill the patient. In view of this great drawback does operative treatment present any counterbalancing advantages? To this question I suggest we may certainly give an affirmative answer.

By abdominal section—and to a lesser degree by vaginal section—we can assure the complete arrest of hæmorrhage, not only immediate but also remote; and if the uterus is removed at the same time the gravest source of danger, as far as infection is concerned, is removed, and the best possible drainage is provided for the peritoneal cavity should it be already infected. In view of these advantages it cannot be denied that if it were not for the profound shock so often present, operative treatment would probably give the best results in all cases. Indeed, judging by the cases which have been recorded of late years, operative treatment—even in spite of the fact that it increases the shock—appears to hold out the best hope for the patient, at any rate in complete tears.

Thus, Schütte [8] records 13 cases treated by operation—2 of incomplete rupture and 11 of complete rupture—with 12 recoveries. Of his series of 19 cases, 5 were hopelessly infected when first seen, and 1 was an old case, in which the child had been some weeks in the peritoneal cavity, which, however, recovered after operation.

Petrén's figures, already quoted, show the same result, and in order to avoid any error from the inclusion of small series of successful cases he has analysed the results obtained in the four large clinics of Berlin, Moscow, Budapest and Bukarest, giving a grand total of 382 cases, and he finds that of these 139, or 36 per cent., recovered—49, or 29 per cent., after conservative treatment, and 76, or 51 per cent., after laparotomy. Of a total series of 192 cases of complete rupture treated by conservative measures in these four clinics, no less than 155 died—a death rate of 81 per cent. He sums up very strongly in favour of laparotomy—at any rate, in all cases of complete rupture.

Lobenstine's figures are also striking, and are the more valuable since they are all from one hospital, and a large majority were treated by operation. Of his 46 cases, as I have already mentioned, 13 were treated by gauze plugging and only 1, or 8 per cent., recovered; 30 were treated by laparotomy, and of these 11, or 35 per cent., recovered; while 3 died undelivered.

Of 19 cases recorded by Munro Kerr,[9] 3 died unoperated upon; of 5 all incomplete tears treated by plugging 4, or 80 per cent., recovered; of 11 all complete tears treated by hysterectomy 5, or 46 per cent., recovered. I cordially agree with Dr. Munro Kerr when he says that panhysterectomy is the soundest treatment, and I would maintain that—while, for cases of incomplete ruptures, gauze plugging or gauze drainage may give very fair results—in all cases of complete rupture laparotomy and removal of the uterus, with gauze drainage of the pelvic cavity, is indicated.

This mode of treatment will undoubtedly entail a very heavy mortality; but if carried out in large numbers of cases the ultimate results will, I believe, surpass those obtained by no treatment at all, or those obtained by the use of gauze plugs if this latter method is employed in cases of complete tears.

On the whole, abdominal section would appear to be preferable to vaginal section, mainly because it enables the abdominal cavity to be more efficiently cleansed from blood and because it will enable the operator to deal more effectively with retroperitoneal hæmatomata—a point laid great stress upon by Schütte. Further than this, abdominal section enables the exact extent of the tear to be accurately defined, and by its employment hæmostasis may be more perfectly attained, and thorough drainage more certainly provided for.

If, then, we are to treat severe cases of complete tears by abdominal section, it is essential that we should take all conceivable means to lessen shock. A considerable number of cases of rupture of the uterus will certainly die from the immediate effects of the accident, but if in all cases that survive for a sufficient length of time immediate steps be taken to combat the shock, and whenever the circumstances permit abdominal section is performed as soon as possible, I believe that even better results will be obtained in the future than have been attained in the past.

For the treatment of the shock the employment of Trendelenburg's position and of warmth, the injection of pituitary extract, and, best of all, if possible, the practice of intravenous ether anæsthesia, are likely to give the best results. The last is a method of anæsthesia which is, in my experience, most useful in all cases of prolonged and severe operations likely to be accompanied by much shock, such as Wertheim's extended hysterectomy for cancer of the uterus, and in these cases of rupture it should prove most useful.

To sum up the treatment, then, of cases of rupture of the uterus as regards conservative treatment or laparotomy, I would say that while in cases of incomplete rupture gauze plugging or vaginal drainage may prove a useful method, in all cases of complete rupture the treatment most likely to give the best results in the future will prove to be abdominal section, followed by the removal of the damaged uterus and the provision of efficient drainage for the peritoneal cavity.

Wimpole-street, W.

[7] Gustaf Petrén: Monatschrift für Geburtshülfe und Gynäkologie, vol. xxix., pp. 299 and 461, 1909.

[8] Chr. Schütte: Monatschrift für Geburtshülfe und Gynaekologie, vol. xxix., p. 842, 1909.

[9] J. M. Munro Kerr: Operative Midwifery, p. 642, 1911.

KING EDWARD'S HOSPITAL FUND FOR LONDON.—A meeting of the General Council of King Edward's Hospital Fund for London was held on Jan. 8th, at the offices of the Fund, 7, Walbrook, E.C. There were present: The Speaker of the House of Commons (in the chair); the Right Hon. Sir T. Vezey Strong, Bart.; the Right Hon. C. Stuart-Wortley, K.C., M.P.; the Right Hon. Sir Savile Crossley, Bart. (honorary secretary); Sir Henry Burdett, Sir Horace Marshall, Sir John Craggs, Dr. Edwin Freshfield, and Mr. John G. Griffiths (honorary secretary). The Speaker announced that the Governors had appointed the Rev. R. F. Horton, D.D., as a member of the General Council in place of the late Rev. J. Guinness Rogers, D.D. The order of appointment, signed by the Governors, of the members of the General Council, members of committees, and officers for the year 1912 was read. The resolutions providing for the work of the Fund for 1912, which were approved at a meeting of the Governors and General Council held at St. James's Palace on Dec. 11th, 1911, were formally adopted.

THE INCIDENCE OF MEDITERRANEAN FEVER IN MALTA AND ITS RELATIONSHIP TO THE SIZE OF THE GOAT POPULATION.

BY J. W. H. EYRE, M.D., M.S. DURH., &C.,
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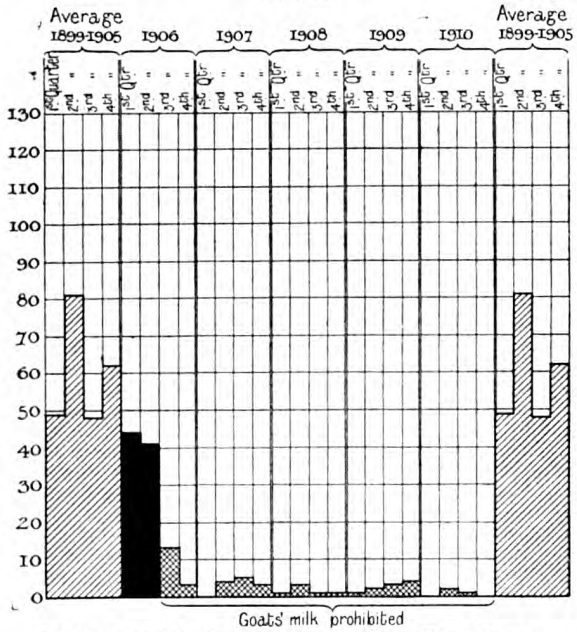
COINCIDENT with the adoption in 1906 of the recommendation of the Mediterranean Fever Commission that the use of milk from the Maltese goat should be prohibited, a striking diminution occurred in the case-incidence of Mediterranean fever upon the naval and military forces stationed at Malta.

The absolute prohibition of goats' milk as an article of diet took effect in the services from the beginning of June, 1906. The average case-incidence of Mediterranean fever in the navy for the first six months of the year is 130, and for the second half of the year 110. The actual case-incidence in 1906 was 89 for the first of these periods (during which attempts at milk sterilisation had been made at the Naval Hospital) and 16 for the second period, or a total of 105 instead of 240 (see Fig. 1). In 1907 12 cases were notified;

FIG. 1.

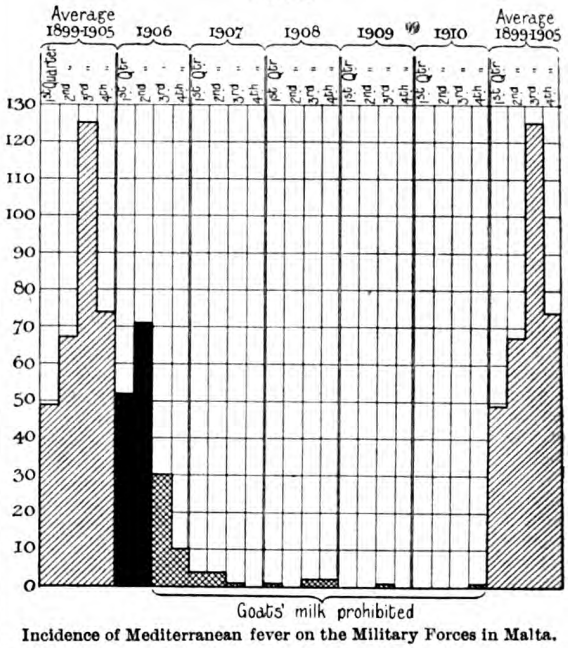


Incidence of Mediterranean fever on the Naval Forces stationed at Malta. Note that the average incidence for each quarter appears at the left of the diagram and is repeated at the extreme right. The same arrangement has been followed in Figs. 2 and 3.

in 1908, 6 cases; in 1909, 10 cases; and in 1910, 3 cases. So that it would appear that, instead of the navy having to deal with some 240 cases of the disease each year, less than 10 men become infected, a reduction of more than 95 per cent., and a reduction, moreover, which took place abruptly on the discontinuance of the use of an infective food. I suppose that in the circumstances it would be too much to expect that the disease would entirely disappear from the Mediterranean Fleet, since we know that *M. melitensis* septicæmia is endemic throughout the whole of the Mediterranean littoral, and indeed in all those tropical or subtropical countries where the goat is the sole or principal source of the milk-supply; and the bluejacket, although careful enough to avoid milk whilst upon the island of Malta, is by no means equally careful when ashore at other Mediterranean ports. Moreover, some of the cases recorded in the naval statistics occur amongst the native bandsmen and mess attendants employed on warships and have probably resulted from contact with infective material in their own homes whilst on shore leave.

In the army the case-incidence was slightly above the average in the early months of 1906, but it dropped rapidly after the introduction of the prohibition order, so that in the third quarter of 1906 there were only 30 cases, as compared with an average of 125; and in the last quarter there were only 10 cases, against an average of 74 (see Fig. 2). In 1907

FIG. 2.



Incidence of Mediterranean fever on the Military Forces in Malta.

the total for the year was 9 cases, instead of an average of 315. In 1908 5 cases were notified; in 1909, 1 case; and in 1910, 1 case. Here we appear to have an irreducible minimum in a body of troops living in the island in the midst of so much infective material.

This diminution in the case-incidence of Mediterranean fever which took place after the removal of an infective item from the dietary of the sailors and soldiers is regarded by some to be merely *post hoc*, and the evidence adduced by the Mediterranean Fever Commission as to the infectivity of goats' milk, and indeed as to the causal association of *Micrococcus melitensis* with Mediterranean fever, is ignored, derided, or denied. With this type of argument the impartial critic can have but little sympathy, and I do not propose to do more than refer to it. But in certain quarters the assertion has been made, and frequently repeated, that the diminution in the case incidence in the garrison, naval and military, of Malta is merely the result that one would expect to follow upon improved sanitary conditions generally, and is in no way dependent upon, or even associated with, the prohibition of the use of goats' milk—even if such milk is assumed to be infective. The removal of a small portion of the military garrison to modern barracks is instanced as of the first importance. The fallacy of this argument is shown in the following table, giving the age of some of the barracks and the incidence of Mediterranean fever therein for the six

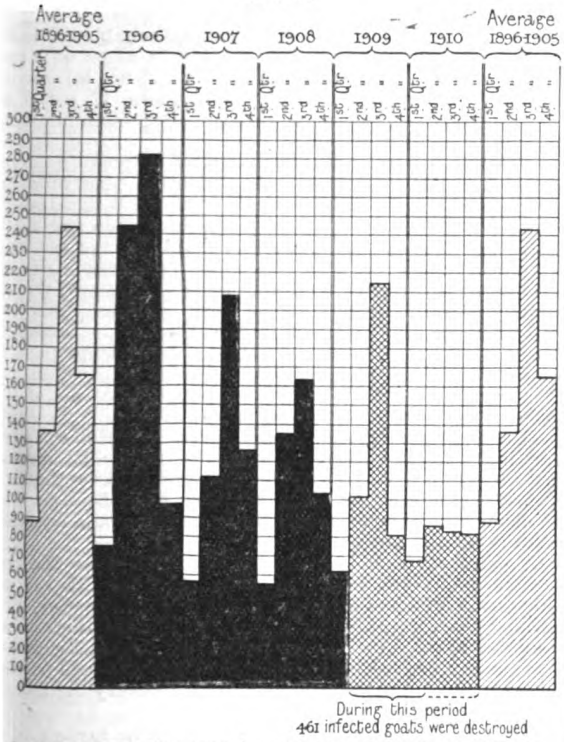
Built.	Barracks.	Case-incidence in 1906.	
		January–June.	July–December.
1903	Floriana.	40	4
1905	St. Andrews.	3	5
1896	Imptarfa.	6	3
Part of ancient fortress.	Lower St. Elmo.	6	2
	Upper St. Elmo and St. James Cavalier.	8	6
1860	St. George's.	5	0
1901	Tigne.	16	9
Ancient.	Ricasoli.	11	1
Various hospitals, all old.	R.A.M.C.	16	2

months before (January–June, 1906) and the six months after (July–December, 1906) the issue of the prohibition order.

Again, improved sanitary conditions can scarcely be urged in support of this contention so far as concerns the navy, for neither the naval hospital at Bighi nor the construction of warships, from the sanitary point of view, has undergone any change in the last five years. In fact, the only sanitary improvement of any importance that has taken place in Malta during the past four years is the reduction in the goat population of the island, a point to which reference is made later.

Finally, consideration of the figures representing the case incidence upon the civil population fully confirms the finding of the Mediterranean Fever Commission (see Fig. 3). The

FIG. 3.



Incidence of Mediterranean fever on the civil population of Malta.

number of cases notified during the first three months of 1906 was slightly lower than the average for the corresponding period. At the commencement of the second quarter of the year the goatherds commenced to get uneasy concerning what they believed to be a libel upon the animals that provided them with a livelihood. Towards the middle of the second quarter they chose to consider themselves affronted by the desire of the Fever Commission and the public health authorities to analyse specimens of the milk offered for sale, and they went on strike (shortly before the issue of the prohibition order), and refused to supply the contract quantities to the naval and military authorities, with the result that a large quantity of highly infective material remained upon their hands.

I have already pointed out that in the ordinary way the Maltese goatherd does not drink the milk from his goats: he simply keeps the goat in order to sell the milk. But now, during this period and the following three months, when he had so much milk on his hands and so little money to purchase other provender, he was compelled to use the food ready to his hand for himself and his family, with the result that 526 cases of the disease were notified during the second and third quarters, instead of an average or 379, and a total for the year of practically 700 cases, as against the average of 632. Naturally, many of the milch goats were sacrificed—in other words, slaughtered and sold. Others, with the incidence of hard times and consequent lack of food, became dry, and in the following year, 1907, 502 cases only were notified for the whole year as against the average of 632. By the following year (1908) many well-to-do Maltese families had taken to heart the advice with regard to goats' milk that the public health department of the island had so constantly reiterated, and were either drinking imported condensed milk, or were boiling the supplies of goats' milk obtained locally, and a further small reduction in case incidence to 456 was noted in 1908, accompanied in accordance with the law of supply and demand by a consequent further reduction in the number of milch goats in the island. By 1909 the public health authorities of Malta had obtained additional powers with regard to the purification of the milk supplies, and from the beginning of the second quarter of 1909 up to the end of March, 1910, no less than 461 milch goats in whose milk the micrococcus melitensis had been detected were bought in by the health authorities and destroyed. The result of the removal of so much infective material from the island becomes apparent in the incidence of the disease during the year 1910 (included in the dotted extension of the bracket in Fig. 3), 318 cases only being notified, as compared with the average of 632. The plea that this reduction in the case of the civil population of Malta is due to improved sanitation cannot apply here. Speaking generally, the sanitation of Malta was as good six or eight years ago as it is now, and the only striking improvement in recent years has been the reduction of the goat population of Malta from *17,110* in 1907 to *7619* in 1910; in other words, the removal of infected goats and the consequent reduction in what I conceive to be the main causative factor in the production of the disease.

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ELECTRIC METALLIC COLLOIDS AND THEIR THERAPEUTICAL APPLICATIONS.

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THE introduction of the metallic colloids into medicine constitutes a new departure in therapeutics the significance of which does not appear as yet to be generally recognised. Under these circumstances a brief review of the physical qualities, physiological properties, and therapeutical effects of these remarkable bodies presents a certain practical interest.

A colloid is usually defined to be a substance that will not pass through an animal membrane, of which gelatin, albumin, and dextrine are typical instances. Until recently, indeed, this was about all that was known of them, although, as the animal organism is wholly composed of colloids, it is only by a thorough knowledge of their interaction that the reactions taking place in the human organism can be understood.

The discovery that it is possible to convert certain metals and metallic salts into the colloid state and the careful study of these metallic colloids, however, show that they are reduced to infinitely small particles, so small as to be visible only by the aid of the ultra-microscope. Some idea of the minuteness of these particles can be gathered from the fact that a cubic millimetre of ordinary colloidal gold is estimated to contain 1,000,000,000 of them, and what would be considered a solution of *fine* particles at least twice that number. These particles or granules are animated by what is known as Brownian movement and are enabled to remain in suspension in a liquid medium almost indefinitely, their stability depending on the size of the granules, the nature of the body and of the vehicle employed. It is interesting to note *en passant* that the number of granules varies according to the cube of their size, so that if their size be reduced to one-half their number is multiplied by eight, a fact of considerable practical importance because the activity of these solutions depends upon the multiplication of these centres of activity.

There are two principal ways of producing metallic colloids—viz., chemical and physical (electrical). The *chemical* preparation of a colloid metal is effected by the slow reduction of a salt of the metal, as, for instance, by

treating nitrate of silver with a mixture of sulphate of iron and citrate of soda. The *physical* method consists in passing the electric arc between electrodes of the metal to be converted into colloid, plunged into distilled water. Under these conditions the electrodes throw off an extremely fine powder which remains suspended in the liquid. The two methods of production yield widely different results, and from a therapeutical point of view I need only deal with the electric colloid metals, since these only present the necessary homogeneity, minuteness of granules, purity, and stability.

A solution of electric colloid silver (small-grained) is of a brownish-red colour (the solution with larger grains has a green tinge). It diffuses light and is vaguely opalescent. For therapeutical purposes it is made stable by modifying the composition of the aqueous medium and is rendered isotonic with blood serum by the addition of sea-salt. Thus prepared for use it is known as electrargol and is one of a series, electraural, electroplatinol, electromercurol, &c., which all appear to possess the same properties in approximately the same degree, a fact which militates in favour of the view that it is the physical state of the substance rather than its nature that determines its effects. These colloid metals, like colloids in general, have a special electric charge, and thanks to their state of fine division they possess a certain catalytic power—that is to say, by their mere presence they can determine very powerful chemical action out of all proportion with the quantity of matter brought to bear. From this point of view the action of colloids resembles that of the ferments.

When colloids are mixed together they form complexes possessing the properties of the bodies originally brought into contact. It is to the affinity of the colloids for each other that we must look for an explanation of the actions of toxins and antitoxins, the phenomena of agglutination, and, indeed, most of the recently elucidated biological phenomena. Since the organism is a complex agglomeration of colloids we have everything to gain by introducing medicinal substances in the colloidal state; indeed, the action of the colloid metals, both locally and constitutionally, testifies to an extraordinary bactericidal, anti-infective energy, both directly and by reinforcing the organic defences.

Therapeutical Applications.

Although of comparatively recent introduction the therapeutical applications of the colloid metals are numerous and interesting; indeed, their employment inaugurates a fresh chapter in therapeutics which is daily being added to.

Speaking generally, the colloidal metals are especially remarkable for their inhibitive action in infective states—septicæmia and pyæmia. This action has been shown to be due to their stimulating influence on phagocytosis and to their destructive effects on micro-organisms and their toxins as shown by the immediate fall of temperature and the subsidence of the constitutional symptoms of intoxication. They are employed as a rule for the sake of their constitutional effects, for which purpose an injection of from 5 to 20 c.c. is made into muscle or, in urgent cases, into the veins. It is worthy of note, however, that in presence of a local infective lesion, such as epididymitis, bubo, mammary abscess, &c., valuable effects are obtained by making one or more injections into the affected tissues or as near thereto as circumstances permit, in addition to the constitutional treatment. Similarly, the colloid products can be injected, in accordance with the indications, into the spinal canal (cerebro-spinal meningitis) and the serous cavities (pleurisy, empyema, &c.) or applied locally to the surface of diseased mucous membranes. Their introduction into the circulation is followed in a few hours by a sharp febrile reaction for which we must be prepared, but which soon gives place to a marked and durable fall of temperature associated with remission of the general and local symptoms. If treatment be postponed until the patient is *in extremis* this reaction may be wanting.

The colloidal metals have been extensively employed in acute inflammatory infections of the lungs (pneumonia and broncho-pneumonia) and pleura (pleurisy and empyema). The injection is followed by a marked change in the opsonic index (positive) and the crisis in pneumonia is notably precipitated. It is indeed in the treatment of inflammatory affections of the lung and pleura (and in puerperal fever, *vide infra*) that the electric colloids have yielded the most brilliant results, as will be seen on reference to the original papers. In addition to the intravenous or intramuscular injections, electrargol has been introduced into the pleural cavity in presence of pleurisy and empyema, apparently with much benefit.

In puerperal septicæmia (puerperal fever) and peritonitis, whether consecutive to labour or as the result of appendicitis, the most remarkable effects follow the intravenous injection of these colloids; indeed, in some instances the patients have been rescued from apparently inevitable death. It is obviously undesirable to postpone intervention until the disease has reached a stage at which the organism has become irresponsive to treatment of any kind. We know that this is the case when the reactional rise of temperature does not take place, and clinical experience shows that patients who fail to react do not as a rule derive benefit from the treatment.

Even more interesting are the results obtained in acute meningitis and in epidemic cerebro-spinal meningitis. In the latter electrargol can be employed either alone or in conjunction with the serum treatment. The injection is usually intravenous, but in severe cases it should be made directly into the spinal canal so as to obtain immediate effects.

Without attempting to exhaust the list of possible applications of the colloid metals, I may mention that within the last two years they have been employed with signal success in the treatment of acute epididymitis. This painful and disabling affection can often be nipped in the bud by a timely injection of 1 or 2 c.c. of electrargol *into the epididymis;* even when the disease is fully developed the pain usually subsides within a few hours of the epididymal injection, and the duration of the disease is thenceforth measured by days instead of weeks. Their employment in acute urethritis is being investigated and it is claimed that they abort or avert the principal complications of this redoubtable though common affection.

It will be seen that the action of the metallic colloids is not limited to any particular variety of microbial infection, but extends to most. In typhoid and typhus fever they exert the same anti-infective action and they have been employed in diseases as far apart as Mediterranean fever and erysipelas, cystitis and tonsillitis.

A glance at the bibliographical notes will show that these remarkable results have not been obtained by any one observer or group of observers, nor in any one country. They are daily being placed on record in medical literature all over the world. In view of their daily increasing field of usefulness it can hardly be doubted that a new and interesting chapter has been opened up in contemporary therapeutics by the introduction of the colloid metals.

One point stands out prominently, and that is the absolute innocuousness of these bodies, whether injected into the veins or muscles or into the spinal canal. Injected into muscle they cause very little local reaction or pain, and the dose is determined solely by the requirements of the case since they are devoid of toxicity. No hesitation need be felt in applying this treatment to children in doses of from 3 to 5 c.c., according to age. It is unnecessary to add that the injections are to be made with the usual antiseptic precautions.

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Paris.

OBSERVATIONS UPON THE TREATMENT OF GONORRHŒAL CONJUNCTIVITIS IN THE ADULT.

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WE have observed, in common with most ophthalmic surgeons who have given attention to this subject, that gonorrhœal conjunctivitis in the adult is in all cases after the age of 30 attended with most disastrous results to the eye. Not only is all useful vision in these unfortunate cases completely lost, but the damaged and shrunken globe not infrequently remains a distressing and unsightly object in the orbit. We believe that this untoward result is not only unnecessary but preventable if the patient is seen early and appropriately treated. The involvement of the cornea constitutes the great danger in this affection.

1. It may slough wholly from strangulation owing to the pressure of the brawny lids and the gelatinous chemotic swelling round its margin.

2. Its epithelium may be readily abraded and a site exposed for the ingress of the terrible gonococcus by even the gentle manipulations of a skilled attendant.

3. The digestive powers of the toxic products contained in the discharge have a most deleterious influence on the vitality of the structures of the cornea.

4. To these must be added what we have come to consider as the almost uniformly pernicious influence of the caustics and astringents applied in the early stages of the disease. We refer more particularly to silver nitrate, protargol, argyrol, and perchloride of mercury. These, by the reaction they cause, lead to greater constriction and chemosis, whilst they merely remove the superficial layers, leaving the deeper structures of the conjunctiva untouched. Moreover, the renewal of these applications is not only distressing and exhausting to the patient, but is attended with positive danger to the cornea. Further, this method of treatment is, even in favourable circumstances, a lengthy one, the conjunctiva being left in an irritable, and occasionally papillomatous, condition for many weeks, while recurring ulcerations of the cornea are much to be feared.

It has always appeared to us that this treatment would be justly condemned if adopted by any modern surgeon in urethral gonorrhœa, and that it is essentially unscientific and unpractical. For some years we have adopted the following method in dealing with these very serious cases and with the most uniformly gratifying results. The early symptoms of this disease may be recognised, or at least strongly suspected, by the practised eye even before a culture has been obtained, though this should never be omitted.

Treatment.

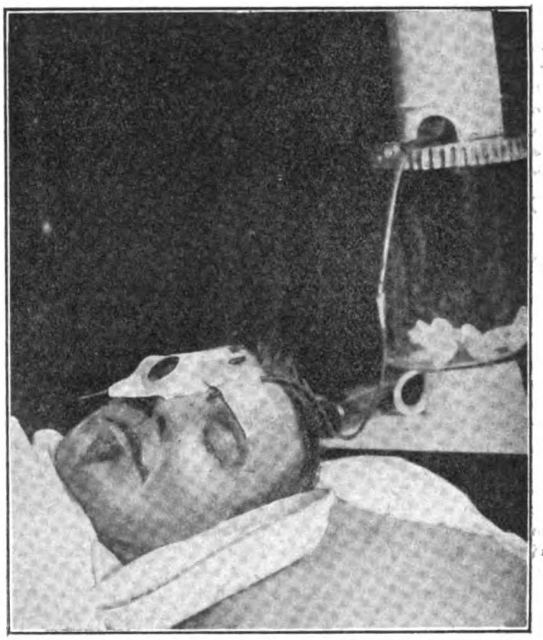
1. The patient should at once be placed in bed and remain there until all danger is passed.

2. A low diet should be prescribed, consisting of milk, barley water, eggs, fish, toast and butter, weak tea, &c., for the first ten days. The bowels should be kept freely open with mercury and saline purges, and aspirin (gr. x. thrice daily) and quinine bisulphate (gr. ii. thrice daily) are probably the best internal remedies to administer in this disease.

Local Treatment.

With regard to this all-important question we have found that the constant use of the douche is the primary curative factor. It may be applied either by a mechanical apparatus fastened to the head or by the hands of a relay of properly instructed nurses. These should sit behind the patient's head and apply the unintermitting stream as the surgeon may direct from time to time. No cessation in the flow is to be permitted for a moment either day or night. The solution which we have found most satisfactory for this purpose is one of permanganate of potash, varying in the early stages from 1 in 15,000 to 1 in 20,000, and in the later stages a solution of boric acid, gr. viii. ad ℥i., may replace this and is all that is necessary. The temperature should be from 85° to 90° F. in the can, where a thermometer is constantly present. We do not use any ointment either within the conjunctival sac or on the surrounding skin, as it tends to interfere with the proper application of the solution. When possible the patient should be encouraged to open his eyes slightly every ten minutes. No manipulation of the lids except by the surgeon should be permitted.

In the arrangement of the douche the can should be placed not higher than one foot above the patient's head. (See figure.) The end of the fine rubber tube leading from it should be either fixed by plaster or held at the naso-orbital margin, and the stream allowed to trickle constantly across the palpebral fissure, which it will be found that there is a tendency for it to do if properly adjusted. If a slight coating forms along the lashes it can be removed readily by a warm solution of sodii bicarb., gr. x. ad ℥i., the lashes being gently stroked downwards. For the first four days, provided that the sequelæ to which we shall refer later do not call for further examination, only the gentlest attempts should be made to



expose and inspect the eye. After this time, as the swelling is in all probability subsiding, the cornea should be carefully examined for minute specks, and signs of iritis or hæmorrhages into the anterior chamber should be looked for. The patient should be encouraged to open the lids himself, the surgeon merely assisting by the gentlest manipulation of the upper lid. It will be observed in the severer cases that the chemosis in itself tends to keep the lids apart, or at least prevents firm closure, and that the portion thus exposed and submitted to the stream of fluid includes that part of the cornea—i.e., the lower limbus—most susceptible to damage from the toxic inflammatory products.

If the disease is diagnosed in the first days and irrigation is at once adopted a surprising improvement will be seen in the course of the next four days, and the surgeon may be tempted to relax the continuous douche. Relapse is, however, much to be feared if the treatment is not continued for the next three or four days. It may be pointed out also that even in the neglected cases, where the patient is seen by a specialist at a dangerously late stage, eight days' continuous irrigation will be found sufficient to bring the case completely under control, provided the cornea is not affected when the surgeon is called in.

Complications and Sequelæ.

Lids.—A malignant form of the disease, where the lids become almost black and show signs of venous stasis and even threatened gangrene. In this condition the outer canthus should be freely incised, and, if necessary, its edges

sewn apart. There is no danger of orbital cellulitis ensuing if the continuous douche is persisted with. These cases are, however, rare if the disease has been early recognised and the irrigation treatment adopted.

Cornea.—If the douche is discontinued at too early a stage we have found that corneal complications are apt to appear as grey spots at the limbus or in the centre of the cornea. A renewal of the irrigation has led to rapid arrest of further trouble. Even if a definite ulcer appeared, which we have not seen under this method of treatment, we should continue to persevere with the douche and not resort to the more heroic measures of the cautery or the silver compounds. A slight vascularity of the upper corneal limbus should not excite apprehension. There is no tendency for ulceration to occur in this situation; it occurs in the centre from devitalisation, or at the lower part from contact of the secretion, or from exposure. We have not found it necessary to make radiating incisions into the chemosed tissue since adopting this method of treatment. The subsidence of the chemosis may be assisted after the tenth day, when the discharge has mostly ceased, by painting the conjunctiva of the lower lid only with gr. ii. ad ℥ i. of silver nitrate or the use of permanganate of zinc drops, gr. 1/8 ad ℥ i. The globe and upper lid should not be touched by these astringents. The eyeball is always tender on the slightest pressure during the first fortnight, and the eye is hypersensitive to light even through the lids. There is, however, but little true tendency to iritis at this stage under this treatment, but it is our practice to instil atropine solution every other day, gr. ii. ad ℥ i., after the eighth day for the general comfort of the patient. We have not found as sequelæ after this method of treatment papillary roughness of the conjunctiva, obliteration of the fornices, &c.—results by no means uncommon after the astringent and caustic methods of treatment usually adopted. Neither have we encountered such terrible results as orbital cellulitis, meningitis, &c.

It must be remembered that however well the eye may have recovered in certain cases the patient may suffer at a later stage from rheumatic troubles affecting the periarticular tissues and serous membranes. These occur chiefly in the urethral cases at about the fourth week, when the patient is up and about and scleritis may supervene at this period and ultimately cause staphylomata. We have, however, never met with this complication after the irrigation method. It points to the importance of carrying out suitable treatment for the urethral complications, to warm clothing and careful dieting, and the avoidance of anything which may expose the patient to cold and damp. Abstention from alcohol and tobacco and a diet consisting chiefly of milk and farinaceous food are indicated until the patient has completely recovered.

In the early stage the patient will naturally suffer somewhat from insomnia, owing to the want of rest which this treatment involves, but this should not prevent the surgeon from persisting with the douche, the issue being so vital. It is most important that the stream should trickle uninterruptedly and not fall by drops upon the eye, for it is then apt to produce a peculiar mental irritability. Veronal, gr. viii., in tea can be given at night, but a fair amount of rest is really obtained. The light of the room should be subdued, the sound eye protected by a Buller's shield well aerated above and below, which should not be removed unless absolutely necessary. The nurses should wear protecting gloves of indiarubber. All woollen swabs should be destroyed by burning. The fluid is collected by means of towels and mackintoshes, the towels being boiled, dried at the room fire, and used again. The room should be well aired and kept at a temperature of 65° F. The risk of infection to the attendants should be pointed out.

With regard to vaccine-therapy we have not satisfied ourselves of its efficacy, but we believe that the use of anti-streptococcic serum by the rectum is of service in the rheumatic complications which may arise.

HOSPITAL FOR SICK CHILDREN, GREAT ORMOND-STREET, LONDON.—The weekly demonstrations and lectures at this hospital have recommenced. These lectures are open free to all medical practitioners. The next lecture will be given on Jan. 18th, at 4 P.M., by Mr. E. M. Corner who will take as his subject Delayed Chloroform Poisoning.

PSYCHOTHERAPY AND GENERAL MEDICINE.

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I.—*Retrospect and Introduction.*

THE principle that mental impressions can influence bodily function has long since met with almost universal acceptance, and has been crystallised from time to time into a great variety of cults which have had their vogue and passed, or at the best survive as more or less local and sporadic fanaticisms. Our profession, with the rest of the world, has admitted the truth of the principle, but furtively or with an air of easy tolerance, as though it had no bearing on the problems set by sickness. The object of this paper is to submit that the profession cannot afford to continue in this attitude of detachment, while the furtiveness of such interest as is shown in the matter becomes readily intelligible upon a brief retrospect. Until the early years of the seventeenth century the science of medicine was the paradise of theorists. Then came the awakening, and during the succeeding centuries men witnessed an almost unceasing flow of important discoveries emanating from exact observations, post-mortem dissections, and the like. It is no wonder that the best minds in the profession were monopolised by strict materialism when they compared its harvest with that of the unchastened theorising which had held sway so long. In consequence the more nebulous regions of medicine, where mind and body meet most intimately, became—or perhaps one should rather say remained—the happy hunting-ground of impostors and charlatans, of Mesmers and Cagliostros; and the evil odour which clung to them when these worthies had come and gone left decent people less than ever inclined to risk their reputations in such doubtful company. So things went on till Braid, in the middle of the last century, took Mesmer's animal magnetism in hand, showed that it had nothing to do with magnetism, and did a great deal to place its manifestations on a scientific footing. Presently Charcot himself was persuaded, took up the practice of hypnotism, and made it temporarily orthodox. Soon, however, the scene of his labours became a by-word for functional manifestations of a degree never seen elsewhere, and the whole business sank again into a disrepute the deeper for its temporary emergence under such distinguished patronage. Yet in spite of the shady and undulating career of the methods by which men have tried formally to employ the mind as a therapeutic path, the fact of its usefulness in suitable cases remained unshaken and has continued to be applied in various ways. One of these is called "psychotherapy," and it is with a variant of this that I propose to deal. Amongst other offspring of the same stock which are still active may be mentioned "Christian Science" and Freud's psycho-analytical method of treating hysteria.

I suppose there are few young practitioners who have not had to puzzle their heads over the paradoxical things seen in the out-patient room: over the efficacy of gentian and rhubarb in the case of A, while in the case of B, whose affection seems identical, the draught shows no virtue of any kind. Being no exception to the rule, these and such discrepancies prompted me to keep my eyes open for help from someone of larger experience; but, whether through ill-luck or because the subject did not appeal to those to whom I looked for guidance, I continued to flounder along by myself until I made the acquaintance, through a book by Professor Dubois, of Berne,[1] of a method of practice called "rational psychotherapy." I knew, of course, that in the large family to which it belonged there had been several notorious members; but being unwilling to condemn them all because some had led so-so lives, and finding in the method much that appealed to me as reasonable, helpful, and explanatory of my difficulties, I began to exercise its precepts as well as I could some five or six years ago. Sufficient time has now elapsed for me to say that it can be invaluable sometimes, and often of considerable assistance.

[1] The Psychic Treatment of Nervous Disorders, American translation, Funk and Wagnalls Co., 1905.

So I imagine it may interest those who have not anticipated me if I give a slight sketch of what rational psychotherapy implies, of its virtues and limitations as they present themselves to me, and of the way to put it into practice. I ought perhaps to say that Dubois is beyond me as regards portions of his theory, especially its metaphysics, and that I have been a good deal less successful than my first reading of the book led me to hope. But I am persuaded that a knowledge of his principles is a great help in dealing with "nervous" people, under which heading may be included the bulk of people who have been out of health for any length of time, whatever they may be when well.

I must premise that no one need expect any success with this method who does not believe, without mental reservation, that a man may be genuinely ill even though he has no inflammation, tumour, fracture, or indeed any pronounced objective loss of physical or mental health. The practitioner must also have or achieve some degree of intuition as to what is at the back of a patient's mind, for the emotional states which underlie neurotic manifestations are often well concealed by the victims of them, whether from fear, or a dislike of being laughed at, or some more complex emotional stimulus, and the penetration of this disguise is a condition of success in treatment. He must have, too, a ready and persuasive tongue, a convincing air of optimism, and unwearying patience. Lastly, he needs a good supply of human kindness, and, most important of all, a capacity to let it appear on the surface; and this last is no easy accomplishment for English reserve.

Theoretically the method is based upon the following propositions. 1. That ideas, through the emotional states to which they give rise, are capable of disordering bodily function. 2. That disorders of function, on their part, are capable of evoking ideas and depressed emotional states which, in obedience to the first proposition, end by disordering function still further. 3. That in so far as a disease is ideogenic it ought to be treated on psychical lines—that is, by discharging the pathogenic idea. 4. That though pathogenic ideas can be discharged by an appeal to the imagination, it is better to discharge them by an appeal to the reason, for the former method tends to confirm imaginative and irrational leanings, while the latter tends to correct them.

These propositions are fundamental, and must therefore be established even at the risk of being tedious.

1. It is well known that a number of functions, partly reflex and partly under ordinary circumstances voluntary, can be inhibited by over-anxiety as to their performance. For instance, everyone is familiar with the difficulty experienced by some people in passing urine in the doctor's presence. Again, I once saw a man enter a room full of undergraduates and, producing a snuff-box, offer to bet half-a-crown that no one present could make himself sneeze within five minutes. The challenge was accepted freely, and a number of people plied themselves liberally with snuff—so liberally that they sneezed immoderately for some time afterwards; yet no one succeeded in performing the feat within the allotted time, anxiety for its accomplishment having inhibited the natural reflex. Conversely, a different form of emotion may have a precisely opposite effect. Thus the curious mixture of expectation, hope, and fear which is prone to attack those about to perform in public—the "needle" of the rowing man, the "stage-fright" of the platform speaker—is marked not only by polyuria but by frequency of micturition out of proportion even with the enlarged volume of urine; while when the emotion is pronounced a "nervous diarrhœa" is common enough during the half hour immediately preceding the trial. These events are evidence of variations in the irritability of the controlling centres at the instance of varying emotions. They will suffice to bear out the statement that emotional states can disorder function, though they could be multiplied without difficulty from the natural history of everyday life.

2. The converse proposition that emotional conditions are influenced by bodily states hardly needs to be laboured, but the proposition calls for some comment. It is a commonplace that a man's temperament in sickness is other, and generally less buoyant, than it is in health. This is not necessarily because the disturbance of function is itself to blame, but because its existence induces a superstructure of depressing emotions—apprehension, self-pity, vexation, and so forth—a superstructure varying interminably with the temperamental endowments of the invalid. Therefore it is that in one man a disturbance of function in itself trivial produces only trivial effects, while in another a disturbance intrinsically no greater than the first evokes a stream of secondary emotional effects of such consequence that they in their turn become capable of disordering function; and thus a reciprocating series is begun which not seldom leads the patient into pronounced and chronic invalidism. A hypothetical example will, perhaps, make this matter clearer than an abstract statement. Two healthy men, A and B, become equally and scandalously drunk one night at a respectable gathering, and both on the following day are paying the penalty in the shape, amongst others, of disordered gastric function. A is equable, phlegmatic, unimaginative. He surrenders himself to the inevitable, laughs off his lapse in good manners, starves himself for a day, and is well again. B is less stable, more sensitive, morbid, if you please. To his physical discomforts are added scruples of conscience, disgust at the way he has compromised his good name in his cups, and a general tendency to be seriously upset about his escapade. He thus passes easily into a pessimistic frame of mind well adapted to introspection and a tender care for the sensations arising from his outraged stomach. By dint of unremitting attention to his tongue and epigastrium he becomes satisfied presently that his rash indulgence has damaged his economy to some purpose, and in the course of five or six weeks is the perfect picture of a "nervous dyspeptic." By this time, of course, he is genuinely ill, for the gloom that oppresses him does not admit of any healthy digestion of food, while his strained attention does not miss a single sensation arising from his alimentary canal. In short, the reciprocating series I have mentioned has him fully in its grip, and his illness, though initiated by a physical disorder, is now far from physical in essence. In order to round off the fable and to point the moral, it may be permitted to invent a not unlikely future for this man. He now consults a doctor. If the latter be one of those who have no eyes or interest for anything but organic lesions, the patient leaves the consulting-room confirmed in his apprehensions. He has, let us say, a dilated stomach. He takes with him a list of forbidden articles of food, together with precise directions as to the eating of the few that are allowed him. He will next be found receiving lavage from a gastric specialist, and with some temporary benefit. Finally, after a series of relapses he may find partial salvation in a proprietary pill or electric belt, or he may visit a surgeon who by dint of gastro-enterostomy (i.e., suggestion), combined with rest and feeding (enforced by the operation), restores him to health until such time as his fancy shall renew its tricks upon him. This may be thought an overdrawn picture, but it is not. I have authentic knowledge of a lady who underwent six major operations for the relief of obscure abdominal symptoms, and was finally cured by a vaccine.

3 and 4. Assuming as self-evident the third proposition that in so far as a disease is ideogenic it should be treated psychically, it is necessary to say a few words concerning the choice of means for this end. Pathogenic ideas can be discharged, if at all, in one of two ways; either by an appeal to the imagination or by an appeal to the reason. The appeal to the imagination is the method of animal magnetism, of hypnotism, and of all forms of bald suggestion. It is pure chicanery (not that it may not be admissible in certain instances), and though its immediate effects are often beneficial *ad hoc* it does nothing to correct the underlying mental state, but rather, one might suspect, confirms it in its imaginative and irrational leanings. Rational psychotherapy, on the other hand, attempts to discharge the pathogenic notion by an appeal to the reason. It argues that pathogenic ideas exercise their harmful effects by virtue of apprehensive self-suggestions and the depressing emotional states produced by them; that these self-suggestions are generally unjustified by the facts, being the product sometimes of false premisses due to ignorance of physiology, or to rash conclusions prompted by alarm. If, therefore, the best is to be done for the patient, not only must the existing harmful idea be dismissed by attempting to explain the genesis of the disorder along rational lines, but the patient must be brought to understand the mechanism which has entrapped him in order that he may be on his guard in future. That is to say, he is not to be considered cured until he has been brought to realise how much his body is at

the mercy of his mind, and how vital it is to his future welfare that he should be more critical in his acceptance and interpretation of his sensations. So the method endeavours to follow out the chain of events which has evoked the harmful notion, to identify the physical basis, if there is one, and to separate it from the superstructure of self-suggestion which is often disproportionately developed, in order that each element may be dealt with on its merits. The former is then attacked by physical means, the latter by explanatory and reassuring conversation.

II.—*Some Definitions and Postulates.*

I now wish to submit a few further psychological considerations of importance. This may seem a fine description of the string of platitudes which follows, and if I cite them with a solemn air it is not from ignorance that they are platitudes, but because they seem to me to be overmuch forgotten in dealings with sick humanity. But first it is necessary to define the meaning which will be attached to two words of frequent occurrence in the sequel, for they are often vaguely employed in medical literature—viz., "neurotic" and "functional."

A *neurotic person* is here held to signify one who reacts with undue violence to a stimulus of given intensity, and nothing more. This exaggerated responsiveness is inherent in some people, while others who are usually of average balance may be made temporarily neurotic by circumstances. The term does not necessarily connote the lack of judgment which is characteristic of the hysterical person, though the latter is often neurotic; nor has the neurotic constitution in itself any sinister significance (beyond the nuisance of it to its possessor) provided that it be coupled with a critical and judicial mind. But undoubtedly the delicacy of the whole apparatus, which is a cardinal feature of the neurotic habit, does lead to an enhancement of the emotional and imaginative faculties, and the more these are enhanced the more need is there that they should be under the governance of the reason. It is only in so far as this critical control is lacking that the neurotic person tends to become hysterical. I imagine that Shakespeare must have been an example of the best neurotic type, combining in an extraordinary degree emotional and imaginative activity with judgment. Nelson, on the other hand, had far less balance, and academically considered, belongs to the commoner order of genius in which judgment readily goes by the board as soon as the emotions become engaged. It seems to me very important on medical grounds to recognise that the neurotic habit does not necessarily imply defective judgment. For the neurotic constitution cannot be altered unless it has been developed in response to circumstances, but a great deal can be done to call judgment into play so long as capacity for exercising it exists; and this is the basis of the therapeutical bearing of the subject before us.

A *functional disturbance* will be taken to mean a disturbance of function however arising—that is to say, the term will not carry any veiled significance indicative of a neurotic origin for the disturbance. It will simply mean what it says.

To resume. The first of the psychological commonplaces bearing intimately upon psychotherapy is that if we are expecting a sensation we appreciate it to the full when it arrives; while, conversely, in moments of detachment, many a stimulus beats idly upon us which would be considered quite pronounced if we were attentive to it. For example, how trifling a sound will not the ear detect when attention is concentrated for the purpose, and how loud a one may pass entirely unobserved when attention is absorbed in other directions. Similarly in the heat of a game an injury may pass unnoticed which if inflicted in cold blood would constitute a decidedly disagreeable experience. Here, obviously, is a useful counterpoise for the subjective exaltation of the neurotic, if only it can be brought into practice.

Secondly. Minor disturbances of function occurring without known cause are common in the healthy. They must depend upon some trivial disarrangement, chemical perhaps, or what you will, but whatever their cause it is essentially transient and unimportant. For example, there is the spontaneous twitching of an eyelid which most people have experienced, an occasional cramp, a momentary twinge of pain here or there which passes at once or soon and is never explained. The existence of these disturbances is of no intrinsic consequence, but they are evidence that the working of the normal organism is often not perfectly smooth. And when one reflects upon the vagueness of the sensations we receive by way of the sympathetic system it does not stretch imagination to suppose that if one were to translate the twitching of an eyelid into terms of a disturbance of, say, the alimentary canal, the resulting sensation might well be uncomfortable or in its very vagueness even alarming. Further, stimuli capable of producing a response in a normal subject will certainly act with greater effect in a neurotic one, while the latter will be at the mercy of an additional catalogue of stimuli too slight to produce any response at all in a stable subject. Lastly, the emotional consequences of these anomalies may be expected to assume in the neurotic a prominence proportioned to the latter's exaggerated sensibilities; and this, in fact, is constantly the case. These arguments must in the nature of things be somewhat nebulous, but they offer, I think, a reasonable explanation of the apparently causeless symptoms which are met with daily yet come to nothing; and a working hypothesis which will explain to a neurotic patient the bewildering multiplicity of his sensations is essential to the practice of psychotherapy.

Thirdly. Let me note that any considerable mental agitation, even when the emotion is exhilarating, tends to upset function in a good many people; while when the emotion is depressing it will affect unfavourably all but a small minority of ordinary individuals. The after-dinner speaker, unless case-hardened by experience, seldom does much justice to the food he has come to eat, at all events, until he has punished the wine. The billiard-player who is unaccustomed to play for money or in public commonly finds that these unfamiliar adjuncts to a game disorganise his accustomed power of coördinating hand and eye. As to the depressing emotions, I suppose there are few people so stolid as to be able to deal honestly with a meal offered them during the height of the distress occasioned by some overwhelming personal catastrophe; or, to put a milder case, let me suggest that my readers eat with more appetite amid pleasant and convivial surroundings than they can summon for the solitary discussion of a tough steak, served on a thick cracked plate and a dirty tablecloth, in a dingy eating-house. If the normal and healthy show this amount of dependence upon their emotional states it is easy to see how much the neurotic will suffer if he allows his emotions to run riot. Psychotherapy must teach him this piece of physiology and urge him to put it into practice according to the considerations given in the ensuing paragraph.

Fourthly. It would be an error to suppose that the emotion resulting from a given stimulus in a given individual is a fixed quantity; for emotional states are seldom instantaneously developed, but are the product of mental processes; and these, in their early stages at least, are more or less controllable. For instance, we speak of a man "working himself into" a rage or a fright or what not, and we know that if such emotional outbreaks are to be governed at all they must be attacked at or near their inception. "Obsta principiis" is therefore as truly the motto for the victim of florid emotions as it is for the victim of tuberculosis or cancer.

Fifthly. Since it is certain that attention increases appreciation of stimuli, and that a large proportion of neurotic sensations depend upon trifling derangements, it follows that a conscious and cool disregard, exercised by the patient, would be the ideal method for meeting these multifarious anomalies. This, no doubt, is what Christian Science achieves by employing religious exaltation. But if one seeks to urge this view on reasoned grounds, one is likely to be met by the somewhat nettled rejoinder that the patient has already "fought against" his ailment to the utmost of his power. It is on this account most necessary that both doctor and patient should appreciate that "fighting against" subjective manifestations is a wasteful and irrational method of obtaining what can often be managed more easily by other manœuvres. I can best explain what I mean by an example which a good many of my readers can put to the test in their own persons if they have the necessary enthusiasm. Let any determined and inveterate smoker set about to diminish his consumption of tobacco without positively abjuring it. He will then find that with each recurrence of a legitimate opportunity for smoking—according to the bargain he has made with himself—the temptation to exceed the self-prescribed limit recurs anew, and that it really requires a

painful exercise of constancy to abide by his determination. But let him now abjure the drug altogether, dismissing the possibility of using it completely from his mind, and he will find his undertaking an infinitely lighter matter. For in the entire absence of all reinforcement the mental associations built up by long habit become atrophied with surprising quickness, and this without the sense of constantly recurring effort so prominent in the earlier case. This is, of course, the reason why a reformed drunkard requires much more constancy of will to convert himself into a moderate drinker than would suffice to make him a total abstainer. An analogous reasoning may fairly be applied to the victim of multitudinous, though inherently trifling, symptoms. Fighting against them implies continual effort, continually recurring concentration upon the symptoms, and withal a development of self-pity at the burden of the business, and these together are most unfavourable to success. But if the patient can be roused to a pitch of hardihood which will enable him to take the upper hand and, fortified by the conviction that nothing formidable lurks behind his symptoms, to meet them when they come with a cool, disdainful determination not to bother his head about them, the battle is half won. For the mental placidity thus attained is itself a most potent sedative of the lesser functional derangements, and offers besides a favourable field for the action of such physical remedies as may be thought desirable. This may seem an impracticable ideal, but pains and patience and tact can accomplish much towards it in suitable instances.

Sixthly, and to conclude this part of the subject, it is a blunder to believe, as I long believed, that defective self-control is an element inherent in the neurotic. There is in my opinion no essential connexion whatever between them. For just as some people who pass for normal are self-controlled and some the reverse, so there are some neurotic people who belong to the loudly-lamenting class and some whose morale is of a high order. I mean that they put up uncomplainingly with a degree of mingled bodily and mental distress which, supposing that it could be reproduced in the critics who blame them when they do complain, would make those critics less confident of their superiority. This is a mere assertion and does not admit of proof, since we have no measure for distress. But everybody must know of people who are constantly ailing vaguely and are reputed to be *malades imaginaires*, yet who under circumstances of stress and anxiety exhibit fortitude, self-sacrifice, and endurance which anyone might be proud of; and it is not likely that those who can make little of grave objective troubles will yield without a struggle to trifling subjective ones, as on a superficial view they are often suspected of doing. The truth, I believe, is that people of this kind have often been pretty heavily taxed before they complain at all, and that the reception accorded to their complaints, coupled with the fact that there is so little to show for them, does not make the troubles any easier to put up with. The material point emerging from all this is that in a great many neurotic people who come for treatment of a physical symptom, that symptom is not, as it is made to appear, the first and paramount evidence of ill-health, but is, in fact, a late and chance product of those interactions between functional disturbance and emotional reply to which attention has been drawn already. But the patient will of his own motion say nothing of his antecedent discomforts and apprehensions. It is likely enough that he has hailed his definite physical symptom with delight as offering at last some tangible explanation of the preliminary phase. But unless the doctor can detect and penetrate the disguise in which the timidity or secretiveness of the patient has enveloped the truth, though he may effect a temporary cure by vanquishing constipation or anchoring a kidney, or stitching up a prolapsed uterus, his triumph is in danger of being shortlived.

III.—*Outlines of Practice.*

In the hope that I have taken my readers with me as regards the foregoing facts and presumptions, I will now try to indicate the types of malady favourable to the application of the precepts inculcated. The position can be stated quite simply in general terms. There is only one measure of the suitability of an illness for treatment with the aid of psychotherapy, and that is the measure of its emotional and ideogenic ingredients, provided always that rational faculty is not seriously in abeyance. There is practically no place for it in urgent and acute physical illnesses, nor in the graver developments of chronic ones; for in proportion as physical disturbances are profound, emotional ones tend to sink into insignificance. Nor can it be employed, I imagine, for developed psychoses, since an appeal to the reason is the essence of the practice. But of such psychoses I have no experience. On the other hand, it is applicable, in a greater or less degree, to a large assortment of chronic maladies of little urgency, however recalcitrant they be to treatment; to neurasthenic states, especially chronic ones; to the milder types of hysteria, and to a great variety of physical symptoms masquerading as physical diseases in the fashion I have described. These masking symptoms may be situated anywhere, and their position gives no guide to their character, but on the whole they appear most often in the guise of stomach symptoms.

The field of operations being so wide as it is, the practitioner must be armed with some means of knowing when he is face to face with a case suitable for psychotherapy. Often enough the emotional element can be detected at once, while at times it is rigorously concealed. There are, however, certain indications which are of assistance in determining it. Those which I have found most useful are the following.

(a) The character of the symptoms.—As is well known, the most constant characteristics of neurotic symptoms are vagueness and multiplicity, alone or together. An account of such symptoms, even when given with the most matter-of-fact air possible, should raise the suspicion that they are in part at least neurotic.

(b) The patient's manner of recounting his symptoms.—A self-contained neurotic patient will often succeed in veiling his character so long as he is on formal terms with his doctor. But with growing intimacy self-control tends to suffer occasional lapses which permit a peep at the real individual. Thus, a man may carry off his first interview with an absolutely impenetrable air of unconcern, yet at a later one may show by some trifling manifestation that he is labouring under an emotion not justified to all appearance by the state of his physical health. For example, his eyes may become momentarily suffused with tears, or he may be betrayed into an occasional superlative foreign to his previously indifferent utterances. Such things throw the strongest doubts upon the genuineness of the careless air, and suggest that whatever else the patient may need, he needs consolation and reassurance.

(c) The state of the knee jerk.—Whenever it is difficult on other grounds to form a judgment of the emotional state of a patient, the knee-jerk is a valuable aid, for this investigation takes him off his guard. Any considerable exaggeration of the knee-jerk, in the absence of other evidence of organic nervous disease, betokens a patient whose nervous irritability is exalted.

It follows, then, that the first step in practice is to attain a sufficient degree of intimacy with the patient to allow of a fairly accurate estimate of his temperamental condition at the time, and of the view he takes of himself. If it appears quite certain at the first interview that the emotional component of the illness is negligible, physical treatment will do all that can be done. If there is a doubt it is best to temporise and wait for further evidence. If, on the other hand, there is good evidence of a large emotional element in the case, the next step is to identify and appraise the physical basis, if it can be found. For just as it is futile to treat with aperients alone a man whose illness really depends upon an undetected fear of cancer in the rectum, though his complaint is of constipation, so it is futile to treat by reassurances alone a man whose multitudinous symptoms are founded upon, and continually reinforced by, an undetected nasal polypus or stone in the kidney. Confident though I am that emotional components bulk very large in the sum total of many diseases which present themselves to view as mainly physical, I am equally confident that in a large proportion of such cases there is an organic basis not to be neglected with impunity. Undoubtedly some functional derangements are purely ideogenic—e.g., hysterical paralyses of the mimetic order; but by comparison with the vast total of symptoms of whose physical cause we are ignorant, these instances are relatively rare. It is true that if there be physical sources for this great collection of symptoms they must be essentially unimportant, since commonly the symptoms are transient and do not develop a physical lesion

which can be identified. Still this does not prove that a lesion has not existed; and experience of such diseases as disseminated sclerosis warns us that symptoms regarded at their inception as physically baseless (or "functional" in the loose but special meaning of the word) may be shown by subsequent events to have had a sufficiently material foundation. I do not wish to suggest by this example that an ominous significance should be attached to these unassorted symptoms, but merely to urge that the physical aspects of a disease should not be neglected though its emotional component be never so greatly over-developed. To disregard this caution and rely upon psychotherapy alone, unless in most exceptional instances, is to court disappointment and to throw undeserved discredit upon a useful ally. Consider neurasthenia for example. No one, I take it, would deny that there is a pronounced ideogenic factor in most cases within this category; yet it is waste of time to treat neurasthenia by psychotherapy alone, especially when the fatigue-element is prominent. For it is pretty certain, though unproven, that a metabolic fault is at the bottom of neurasthenia, and it stands to reason that this fault cannot be met by arguments. This warning is of particular moment, for there is the same tendency for one interested in the psychical side of physical diseases to overlook organic faults as there is for the pure materialist to overlook emotional ones. Therefore it is an urgent matter that physical examination should be thorough.

Yet even here there is room for the play of judgment, for whereas there are some of these patients who will not be persuaded of their freedom from organic lesions unless after the most protracted and impressive investigations, there are others in whom the intricate procedures required for accurate diagnosis may themselves do harm by adding fuel to self-suggestions. In dealing with patients of the latter stamp it may be better practice to hazard an optimistic view somewhat insecurely based (unless it involves the risk of overlooking some grave but remediable lesion like early carcinoma), rather than to admit, even temporarily, the possibility of serious mischief. There can be no formal rule in such matters, and the physician must be guided by common-sense and intuition in selecting the course most likely to be beneficial to the patient in hand.

Let us suppose, then, that doctor and patient are by now on secure and fairly intimate terms, such terms I mean as have made the patient appreciate that the doctor understands him and is genuinely interested to help him. A frank relation of this sort is quite indispensable, for the sensitive type of patient most likely so be benefited by psychotherapy is precisely the type of patient most ready to take umbrage at any seeming suggestion that his sufferings are not real; and it is not an easy matter to persuade a man that one accepts the reality of a symptom, while at the same time one is proclaiming it in part at least ideogenic. Let us suppose, further, that the physician has satisfied himself of the existence of a large emotional element in the illness, and has set about trying to remedy the physical fault by the ordinary means. The next step is to select the moment suitable for embarking upon the rational explanations by which it is hoped to point out to the patient the path along which he has developed the mind-made factor of his malady, in order that he may be permanently protected, to some extent at all events, from similar tricks of fancy. Much depends upon a wise choice in this respect. For to ask attention for rather complex arguments from neurotic patients reduced by long ill-health to the last pitch of physical and emotional frailty is palpably ridiculous. The first care must be directed towards improving the physical health, if this is at all seriously impaired, by rest, feeding, massage, electricity, exercise, and so throughout the well-known category of good servants in such cases. Yet even during this period it is possible to do a good deal by speech and manner to reassure and encourage the patient, and gradually to restore such a degree of placidity and hopefulness as will afford a footing for the philosophical considerations presently to be employed.

And when the fit moment arrives, early in some cases, late in others, according to the bodily condition, how is the philosophic teaching to be applied? The answer is easily put on paper. It is to be applied by means of conversations based upon the postulates enunciated above, or such of them as seem to fit most accurately the case in point, or any others which the wit of the practitioner can conjure to his aid. The patient must be brought to know these elementary fragments of physiology and psychology, and urged to apply them to his own salvation. He must be tempted to abjure self-pity and ensue stoicism in some cases; in others, to realise the incubus of too ready and unjustified apprehensions; in others again to know that vague sensations are but poor guides for accurate inference. And always the aim must be to cultivate optimism and placidity, and the faculty for criticising and viewing with scepticism the rash conclusions concerning the relations of symptoms and diseases to which such patients are commonly given. I refrain from attempting any detailed description of the steps to be followed in these arguments: partly because there is no royal road for every case, partly because the trifling consolations, platitudes, and confidential exhortations, which will help a sick man who knows one is trying to help him, would be laughable if set down formally. Such readers as I may have kept to this point will know without telling of mine how best to suit their arguments to the changing circumstances. Patients vary greatly in the ease with which they are approached, and some are almost unapproachable. But patience and open friendliness will succeed if success is possible. I ought before concluding to say that the method I have tried to describe is hard to use in the out-patient room, partly on account of the time it takes, partly because publicity drives into their shells the patients most likely to be benefited. So I do not advise anyone to begin his experiments in this direction in the presence of other patients or before a roomful of students. With this I leave the subject, hoping that I have made out a case for treating by psychical means the mind-made factor in physical or pseudo-physical illnesses, the neglect of which factor has long been something of an opprobrium to medicine.

Devonshire-place, W.

Medical Societies.

MEDICAL SOCIETY OF LONDON.

The X Ray Diagnosis of Pulmonary Disease.

A MEETING of this society was held on Jan. 8th, Dr. J. MITCHELL BRUCE, the President, being in the chair.

Dr. G. HARRISON ORTON read a paper on the X Ray Diagnosis of Pulmonary Tuberculosis, in the course of which he said that his object was to try to show how pulmonary tuberculosis even in its very early stages could be demonstrated by the X ray examination, but before going further he insisted on the importance of regarding the examination as an additional aid to diagnosis, a method to be used not in place of, but in conjunction with, every other method at their disposal. As no one other method taken alone was infallible, neither was the Roentgen method, but there were many instances where its employment would enable a definite opinion to be formed in cases which would otherwise have remained doubtful. In utilising the Roentgen method they were bringing into play another, and in most of them the most highly developed, sense—namely, the sense of sight—and it could not but be to their advantage to be able to control with the eye the findings of the hand and the ear. It seemed to be the idea of many that the X ray examination consisted merely of putting a plate upon the chest and making an exposure, but he need scarcely say that that was not the case. A careful screen examination with every detail of technique properly carried out by a skilled observer was of the utmost importance, and that must be followed by the skilled interpretation of a satisfactory negative or negatives. Hasty and perfunctory examinations and imperfect technique had been, and were still, responsible for many errors which tended to bring that method into disrepute. He had not time to describe the appearances seen in all the positions employed, but would consider those seen in the postero-anterior and antero-posterior examinations—i.e., when the screen was placed either on the anterior or posterior surface of the chest. The X ray tube, of course, was on the opposite side of the chest to the screen in both cases. The appearances seen in those two positions were so similar that the same description would apply to both if he pointed out afterwards the slight differences which enabled them to distinguish between the two. What they might call the radioscopic image of the normal chest presented three vertically disposed zones, a median which

was dark and corresponded to the shadows cast by the vertebral column mediastinal contents (including the heart), and the sternum, and two clear lateral zones which were situated on either side of the median and corresponded to the areas occupied by the lungs. They were crossed by the curved shadows of the ribs, and in the upper part by the somewhat denser shadows of the clavicles; they were bounded above by the shadows of the first ribs, laterally by the shadows of the overlapping ribs and lateral walls of the thorax, and below by two dark dome-shaped shadows, which rose and fell with the movements of respiration and corresponded to the diaphragm. When the screen or plate was placed on the anterior surface of the chest the lattice-work effect caused by the crossing of the ribs was a very marked feature, which was almost absent when the screen was on the posterior surface, and that was due to the fact that the anterior portions of the ribs were much less dense than the posterior, dense enough to cast a very distinct shadow when the plate was almost in contact with them, but being very much less distinct when it was at such a distance from them as it must needs be when placed on the posterior surface. The heart being nearer the front than the back of the chest the shadow of that organ was sharper and more distinct when the screen was on the anterior surface. In addition to what they might call those grosser shadows there were to be seen on either side of the median shadow certain somewhat ill-defined shadowy lines, which became less and less evident as they passed from the region of the root of the lung towards the periphery and were more marked on the right side than on the left. He would not weary them with all the explanations which had been put forward to account for those; they were due to the vessels and bronchi radiating from the roots of the lungs, in the main he thought due to vessels which were more likely to cast shadows, being filled with blood, than the bronchi which were filled with air. In addition to those radiating lines there were to be seen also near the root of the lung on either side certain opaque spots and circles, no doubt due to vessels and bronchi seen in cross section. It was important that those should be recognised as normal shadows. Having briefly touched upon the normal appearances, Dr. Orton proceeded to investigate the various departures from the normal which could be made out in pulmonary tuberculosis. Omitting very advanced cases the following were the chief changes, and one or more of them would be found to be more or less marked in all cases: (1) A dimness and failure of one or both apices to brighten on deep inspiration; (2) the movement of the diaphragm was restricted on the affected side or sides, that restriction being as a rule in the lower part of the excursion; (3) the heart in a large majority of early cases was smaller and more vertically placed in the chest than normal; and (4) definite shadows were cast by the diseased portions of the lung.

EDINBURGH MEDICO-CHIRURGICAL SOCIETY.

Exhibition of Cases.

A CLINICAL meeting of this society was held on Dec. 21st, 1911, Mr. J. M. COTTERILL, the President, being in the chair.

Dr. DAWSON TURNER showed a case of Leucoplakia in a man aged 50, and one of a male child, aged 1¾ years, with a Congenital Nævus at the lower part of the left cheek, in both of which the condition disappeared under exposure to radium for 60 mgm. hours and 37½ mgm. hours respectively.

Dr. JOHN EASON showed a case of True Gout in a man, aged 70, who had been a heavy beer-drinker. His father was by occupation a butler. There were numerous gouty deposits of varying size; one over the right olecranon was of the size of a golf ball. The disease began 14 years ago with an attack in the great toe. The deposits were either "shotty" or soft and almost fluctuating, and they were chiefly composed of sodium biurate and organic matter.

Mr. D. P. D. WILKIE showed two cases to illustrate the beneficial effects of salvarsan. 1. A woman nine months after this treatment had been adopted for pronounced tertiary specific lesions. She had contracted syphilis 25 years ago and had been treated in the lock wards of the infirmary for several months for severe secondary lesions, and mercurial treatment had been continued until the present year. For 15 years she had regularly attended as an out-patient for syphilitic psoriasis and leucoplakia. Salvarsan, 0·5 grm., was given intravenously in March, 1911. The psoriasis disappeared in 15 days, but at first the leucoplakia and fissured tongue did not seem to improve. Of late, however, great improvement had resulted. 2. A woman who had suffered from a specific ulcer of the right leg for six years in spite of local and general treatment, and had given birth to still-born children. Salvarsan was administered intravenously, 0·5 grm., in March, 1911. The ulcer healed within four weeks, and in October she gave birth to a healthy child. There had been no recurrence of syphilitic lesions in either case up to the present or after an interval of ten months.

Dr. D. CHALMERS WATSON showed a case of early Rheumatoid Arthritis, in which recovery took place under careful regulation of the diet with daily administration of saline aperients. He thought rheumatoid arthritis should always be cured if taken early in the disease. The source of disease lay in the alimentary, urinary, or genito-urinary tract.

Professor FRANCIS M. CAIRD showed: 1. A male, aged 27, who had suffered from Tropical Abscess of the Liver and Empyema which was incised after resection of the eighth rib and drained, the pus containing the colon bacillus or perhaps that of Mediterranean fever. After draining amœbæ were discovered in great numbers. (He had had dysentery in Burma.) Each night he received 20 grains of chloral hydrate and a little later 15 (subsequently increased to 20) grains of ipecacuanha in pill form. The discharge ceased as if by magic, and though the sinus was still open there was hardly any discharge. 2. A female, aged 32, who all her life had suffered from extroversion of the bladder, in which an epithelioma developed. The neoplasm and mucous membrane of the bladder were removed, entailing division and removal of part of the right ureter, and the stump had to be implanted in the cicatrix. The operation was performed in May and there had been no return of the trouble; but in the right renal region an ascending pyelitis had developed owing to the removal of the valvular action of the lower end of the ureter which had previously prevented the ascent of any infection.

Dr. EDWIN BRAMWELL showed a case of Hysterical Contracture of the Hip in a single woman aged 21. The condition dated from a fall down a flight of stairs two years previously. She had twice been in hospital for the condition and had been ordered to wear a thick-soled boot for "hip-joint" disease. On admission to the Edinburgh Royal Infirmary on Nov. 11th, 1911, there was extreme lateral curvature with tilting of the pelvis upwards and to the left. There was great apparent shortening of the left leg. Examination with the X rays showed no disease of either hip-joint. On Dec. 7th the patient was examined under chloroform, when the deformity completely disappeared under the anæsthetic. The subsequent treatment consisted in isolation and suggestion and rapid recovery had since then taken place. The wearing of the high boot had probably kept up her idea of real disease.

Mr. C. W. CATHCART showed several cases of Fracture to illustrate the good effects of massage and movement in producing satisfactory functional results, although the restoration of the contour of the bones was not perfect.

Mr. GEORGE L. CHIENE showed a girl, aged 7, after wiring for Oblique Fracture of the Shaft of the Left Femur.

Mr. HENRY WADE showed:—1. A case of Right Nephrectomy by the transperitoneal route for acute consecutive suppurative nephritis. The patient, a married woman aged 40, had been sent to the infirmary as a case of acute suppurative appendicitis; but as the frequency of micturition with dysuria had dated from before the onset of the acute symptoms acute suppurative nephritis was diagnosed. 2. Cellulitis of the leg due to an Anthracoid Organism. A man, aged 19, was admitted on Nov. 11th, 1911, with acute cellulitis of the leg (thought to be osteomyelitis). The inflamed area was incised and the tissues were found to be almost necrotic, with no free fluid pus; improvement was very slight. An inflammatory focus which formed on the thigh was incised four days later with similar appearances and similar result. On pathological examination of the fluid obtained at this second operation an organism

identical with the true anthrax organism was found, but clinically the symptoms were not like those of anthrax, and the virulence of the organism was small as compared with the true anthrax organism; it was not toxic to mice. Under Sclavo's serum rapid improvement followed.—The PRESIDENT stated that he had met with an exactly similar case which rapidly recovered after incision merely.

Mr. ALEXANDER MILES showed:—1. A patient whose Fingers had been Amputated on account of being crushed between toothed wheels. The granulating surface had been covered over by making a pocket in the skin of the anterior abdominal wall and fixing the hand there until adhesion had taken place. The lower margin of the skin pocket was divided and a plastic operation had thus been completed. 2. A female patient to illustrate a stage in the restoration of the nose and upper lip due to Syphilitic Ulceration. To support a flap which Mr. Miles intended to take from the forehead, a bony septum had been formed by implanting a slice of bone obtained from the astragalus of another patient on whom arthrodesis of the ankle had been performed.

Mr. J. V. PATERSON showed a case of Arterio-venous Aneurysm of the Orbit in a woman who three weeks previously had fallen down a stair. The lesion was due to a communication between the carotid artery and the cavernous sinus.

ROYAL ACADEMY OF MEDICINE IN IRELAND.

SECTION OF MEDICINE.

Rat-bite Fever.—Splenomegaly.—Pancreatic Cyst.

A MEETING of this section was held on Dec. 15th, 1911, Sir JOHN W. MOORE, the President, being in the chair.

Dr. J. F. O'CARROLL gave an account of a case of Rat-bite Fever. The patient had been bitten by a rat in the lip in March, 1910. After some time the submaxillary glands enlarged, and there were recurrent attacks of remittent pyrexia. Each attack lasted four or five days, with an interval between each of three or four days. A month afterwards the patient developed a very marked nephritis, with an accompanying pleural effusion. By the end of 1910 the patient had so far recovered as to be able to return to heavy work, and has since remained well.

Dr. W. A. WINTER gave an account of a case of Splenomegaly in a man aged 35. His personal and family history were good. Enlargement of the spleen was noticed first in 1905. The patient had had hæmatemesis on several occasions. The blood showed a moderate degree of anæmia, with distinct leucopenia, absence of abnormal forms of leucocytes and of nucleated red corpuscles. The spleen had altered very little in size since 1907. The liver was not enlarged; no jaundice, no ascites. Dr. Winter suggested that the case might eventually show the full picture of Banti's disease. He had advised splenectomy, which was refused by the patient.—The PRESIDENT asked if the liver was cirrhotic. As to the splenic murmur he remembered attention having been called to this before in a case of enlarged spleen.—Dr. T. P. C. KIRKPATRICK said that he had under treatment a boy, aged 8, suffering from Banti's disease. There was a history of his stomach having been trampled upon five weeks previously, and a good deal of blood had been vomited a fortnight afterwards. A very much enlarged spleen and liver were discovered. There was no jaundice. Von Pirquet's reaction was negative on two occasions. Operation was advised to get rid of ascites. Examination of the blood showed a certain amount of anæmia, but no marked departure from the normal in the number or variety of white cells. The child went on well for some time, but then had another severe hæmorrhage, followed by swelling of the abdomen, and he was again admitted to hospital. The blood then showed a reduction of the red cells, with the hæmoglobin considerably reduced. The enlarged spleen was removed, but the child had not done well since, and recovery appeared doubtful. It was his opinion that if good results are to be obtained operation must be done as early as possible.—Dr. W. M. CROFTON said that he had examined the blood in both cases. In Dr. Winter's patient there were a large number of mononuclear cells in the first count, the classification of which would be difficult. The patient at one time suffered from micro-sepsis, and he thought that this might have some bearing on the condition.—Dr. WINTER, in reply, said that the great risk of operation seemed to be the difficulty of controlling the hæmorrhage, which arose through having to turn over the spleen so as to get at the vessels. However, taking everything into consideration, he was very much disposed to recommend operation, and he thought that all the literature on the subject was in conformity with this.

Dr. T. G. MOORHEAD reported a case of Pancreatic Cyst, which was discussed by the PRESIDENT, Dr. CROFTON, Dr. J. A. MATSON, and Mr. F. K. CAHILL.

HARVEIAN SOCIETY.—The annual general meeting of this society was held on Jan. 4th, Mr. J. Ernest Lane, the President, being in the chair. The election of officers for the ensuing year having been proceeded with, the President delivered his address, entitled "Unity in the Medical Profession." Having thanked the members for their kindness to him during his term of office, he briefly referred to the work of the past year, and then began his address by reading an extract from a medical gazette of June 20th, 1835, at which time the St. Albans Memorial was presented to the Poor-law Commissioners with reference to the appointment of medical officers for attendance upon the poor. He then went on to discuss the present Insurance Act, more particularly with reference to the number of patients that every medical man working under the scheme would have to attend and the remuneration for the same. He briefly alluded to the future financial position of voluntary hospitals, and ended by urging upon his listeners the importance of unity of purpose. Mr. Lane then vacated the chair, and Dr. H J. Macevoy, the new President, was inducted. Subsequently a smoking concert was held. About 50 members and visitors were present.

SHEFFIELD MEDICO-CHIRURGICAL SOCIETY.—A meeting of this society was held on Dec. 21st, 1911, Dr. H. E. Knight, the President, being in the chair.—Dr. Percival J. Hay, in a paper on the Pathology, Diagnosis, and Treatment of Corneal Ulcer, discussed the clinical and pathological characters of serpiginous ulcer and the etiology of the disease. He showed that the age-incidence of the hypopyon ulcer coincided with that of pneumonia in adults, a circumstance which seemed to have escaped notice, and which suggested that after middle life there was a lowering of resistance to the pneumococcus. The statement of certain German authors that the disease was a seasonal one and was favoured by exposure to heat was shown to be based on false premisses and to be only partly true. The seasonal variation found in country towns was absent in manufacturing and mining centres, such as Sheffield and Birmingham, and was due to increased dust and dirt in agricultural occupations during the summer months. Statistics covering more than 1700 cases demonstrated that the visual results were very unsatisfactory. Over 50 per cent. of the cases ended in vision less than 6/60. No treatment could be considered satisfactory that did not secure the average vision of 6/18. In the best series of statistics only 25 per cent. of the patients obtained 6/18. Other statistics showed percentages as low as 10 and 7. By instituting new methods of treatment, in which greater attention was paid to the treatment of the conjunctiva and treatment in the open air, he had obtained vision 6/18 in 40 per cent. of his hypopyon cases. Details of his method of treatment were given, and the paper closed with a discussion of measures of prevention.—Dr. F. H. Waddy, in a paper on Four Cases of German Measles, referred to the confusion in nomenclature of the diseases variously known as rubella, rubeola, and roseola, and quoted Nothnagel's opinion that the disease known as German measles was not entitled to a separate existence, and the later opinion of Griffith that its existence was denied only by those who had not seen it. Dr. Waddy urged that this disease presented sufficient distinctive characteristics, especially peculiarities of the rash, to admit of early diagnosis with as much certainty as in the differentiation of chicken-pox from small-pox. He related his four cases of German measles occurring in one family and presenting a strong resemblance to scarlet fever, differing from it, however, in the period of incubation, the symptoms of invasion, the

nature of the eruption, and the condition of the throat and tongue. None of the patients had ulceration of the throat, but the glands of the neck were swollen. The interval in the eruption between the first case and those succeeding it was 24 days, and between these and the last case 22 days. The first case was followed by rheumatism and endocarditis. The second case occurred immediately after measles and was followed by suppuration in the ear, and three weeks later by acute nephritis. The cases of the parents presented no important complications or sequelæ. Profuse desquamation occurred in all the cases except the second, in which there was no trace of it.—Mr. F. A. Hadley showed the following specimens of uncertain pathology: (1) Cysts filling and distending the whole abdomen in a child nearly 2 years old, and originating in tissue about the pancreas; (2) an Appendix converted into a large cyst, containing jelly-like mucus; and (3) an Appendix from an old woman, aged 63, gangrenous in its whole length.—Dr. Ralph P. Williams showed a girl suffering from Melanotic Sarcoma. The child's general health was quite good. It was proposed to remove the growths and to treat with Coley's fluid.

NOTTINGHAM MEDICO-CHIRURGICAL SOCIETY.—A meeting of this society was held on Dec. 20th, 1911, Dr. F. H. Jacob, the President, being in the chair.—Dr. S. E. Gill, in an address on "Ringworm," remarked that ringworm was a contagious skin disease characterised by (*a*) the formation of a mycelial network on the surface of the skin, and (*b*) an infection of the hairs and hair follicles, these characters being usually present together in varying proportions, but often with great predominance of one or the other. The organisms causing it were two—the trichophyton and the microsporon. The latter was much the more resistant to treatment and constituted about 60 to 90 per cent. of all cases found. Ringworm was a disease of children, especially between the ages of five and nine, hence its importance from a school medical officer's point of view. As it was necessary that all cases should be excluded from school on account of its contagiousness, and as from 1 to 4 per cent. of school children, according to locality, were affected, this disease caused a very large loss of grant to local education authorities, especially as the time which elapsed before cure took place was many months, and occasionally years, by the ordinary methods employed. The usual treatment was by (1) antiseptics, which inhibited the spread of the disease, but had little effect in curing the parts affected; (2) counter-irritants, which did good in so far as they caused epilation; and (3) epilation pure and simple, such as X rays, which in the most capable hands cured in about seven weeks as compared with many months by the other methods. The dangers of X ray treatment were much exaggerated, permanent baldness being very rare, and colour changes also were rare. From an administrative point of view it was advisable that the exclusion of ringworm-children from school should be in the hands of one person, and consequently their readmission should also be in his hands. If general practitioners would send their cases to the medical inspection department from time to time for microscopic examination and report it would be useful to them in dealing with a troublesome disease from which very little credit was to be obtained with their patients, and would also be of service in helping the school authorities to prevent the return of children to school who were still in an infective condition.—In the discussion the President spoke of the disappointing results from the use of copper ions, which he had tried extensively.—Mr. R. Wood (Ilkeston) favoured the use of sulphurous acid (B.P.).—Mr. H. G. Ashwell and others spoke of the very disappointing effects of ordinary treatment, even when carried out systematically in institutions.

LIVERPOOL MEDICAL INSTITUTION.—A meeting of this society was held on Dec. 21st, 1911, Dr. T. R. Bradshaw, the President, being in the chair.—Mr. A. A. Bradburne reported the case of a family in which Ptosis and Immobility of the Eyes had been present in five generations, being traceable as far back as 1710. He described the condition of the six members who are at present alive and of seven who are known to have the affection.—Dr. W. B. Warrington referred to a case of congenital but not hereditary ophthalmoplegia that he had recorded.—Dr. E. W. Hope read a note on the Compulsory Notification of Pulmonary Tuberculosis, in which he traced the various stages through which the notification of this disease had passed, and called attention to the fact that after Jan. 1st all cases of pulmonary tuberculosis were to be notified as if tuberculosis were included in the Infectious Diseases Notification Act, 1889.—Dr. W. Murray Cairns read an account of difficult delivery, in which he had performed the operation of kleidotomy.—Mr. R. E. Kelly showed a boy, aged 9, who had been run over by a motor-car and on whom he had performed splenectomy. He was admitted to the Royal Infirmary suffering evidently from internal hæmorrhage, but no exact diagnosis could be made. He was operated on within an hour of the accident. The spleen was severely lacerated and had to be removed. Recovery was uneventful. The boy now (six months later) appears perfectly healthy, with the exception of some slightly enlarged lymphatic glands.—Dr. Campbell showed that the blood had undergone the following changes: Red cells, increased hæmoglobin index but no poikilocytes or erythroblasts; white cells, increased lymphocytes, a basophilia of 2½ per cent., and an eosinophilia.—Dr. H. R. Hurter related that in a case of his in which the spleen had been expelled, owing to torsion of the pedicle, there were no blood changes.

Reviews and Notices of Books.

Manual of Surgery. By ALEXIS THOMSON, F.R.C.S. Edin., Professor of Surgery, University of Edinburgh; Surgeon to the Edinburgh Royal Infirmary; and ALEXANDER MILES, F.R.C.S. Edin., Surgeon to the Edinburgh Royal Infirmary. Vol. I., General Surgery. Fourth edition, revised and enlarged, with 297 illustrations. London, Edinburgh, and Glasgow: Henry Frowde and Hodder and Stoughton. 1911. Pp. 809. Price 10*s.* 6*d.*

IN this, the fourth, edition of this well-known text-book, the first volume of which has just been published, the authors are making some important changes in the general arrangement of the work; they are adding a third volume, which will deal with operative surgery. In this first volume general surgery is considered, while the second volume will be devoted to regional surgery.

One of the most important points that strike a reader, even in opening a work on surgery, is the manner in which it is illustrated, for illustrations are the best means of giving to the reader rapidly an impression and an interpretation of the text. They are, so to speak, the illuminant which sheds light on the author's train of thought, and in this volume the illustrations are numerous and well chosen, and they fulfil their object. The process by which they are reproduced is good and gives a soft effect. The many skiagrams should prove useful to the student, and they show good detail.

It is difficult to mention any part as pre-eminently good, when all is good, but we are inclined to think that the account of fractures is especially deserving of approval, for this subject, often difficult for students, is described as clearly as possible. Of all fractures those of the neck of the femur appear to cause students the greatest difficulty, but the description given here is clear and should be comprehensible to every one. We are glad to see that an account is given of Chiene's test which is often of value in recognising elevation of either trochanter and yet it is rarely mentioned in text-books. It is used thus: Two lines are drawn, one at the level of the anterior superior iliac spines, and the other at the level of the tips of the great trochanters. Any want of parallelism of these lines indicates an altered position of one trochanter. The modern treatment of fractures is well described.

In the chapter on Tuberculosis, for diagnosis von Pirquet's test is rightly given pre-eminence for practical use. The authors consider that the subcutaneous injection of Koch's tuberculin is not well suited for use on human beings, and Calmette's

conjunctival test is not mentioned, probably as being too dangerous both to the patient's eye and to the surgeon's reputation. Moro's tuberculin ointment test might perhaps have found a place; it has the advantage that no preliminary abrasion of the skin is necessary.

This manual can be recommended to the student and also to the practitioner, for it is clear, concise, and thoroughly trustworthy: it is, and well deserves to be, one of the standard text-books of the present day. We suppose that it is inevitable that the work should increase in size, but we hope that the authors will do their best to keep it within a moderate compass.

Unity in Nature: An Analogy between Music and Life. By C. E. STROMEYER. London: Sherratt and Hughes. 1911. Pp. 589. Price 12*s.* 6*d.* net.

No intelligent reader can fail to find this book of absorbing interest. Mr. C. E. Stromeyer is the engineer-in-chief to the Manchester Steam Users' Association and the author of a well-known book, "Marine Boiler Management and Construction." With reason we are all more or less shy of the metaphysician of to-day, and we welcome with delight the work of a practical engineer on the greatest of all subjects; for, to quote the author, engineers base no conclusions "on false evidence or on sophistical arguments. They abhor every suggestion of finality, for that is a stumbling block to improvement and progress. They lean on analogy, feeling that, from first to last, each experiment is but the analogue of the next one ..... and that there is no end to possible researches and improvements."

Every modern science now rests upon two established principles—the indestructibility of matter and the conservation of energy—and to Mr. Stromeyer there is a parallelism of these two realities—matter and energy—in our world of space and time with the rhythm and melody in the music-world of time. Music, of course, has no existence in space but only in time, while its two constituents differ in a remarkable way. "Rhythm can lead an independent life, as in the drum beating of the Orientals; melody without rhythm is inconceivable; in fact, melody has to be carried, she cannot walk alone, and yet she gives the impression of being the superior."....."Melody loves change, yet she is never without her supporting partner, rhythm; she may leave one musical measure for another and yet she will be recognisable as the same musical theme; but if she attempts to live alone she is dead as a melody." In a similar way we only know of energy when it is in association with its more stolid partner, matter, in our complex world of space and time.

A quite rudimentary idea of the subject of this book may be given by these extracts, but the analogy is so novel that there is a great difficulty in explaining the point of view in the space of a review. After dealing with Matter, Energy, Geology, Evolution, the Creator and His work, Mr. Stromeyer considers What is Perfect Music? and, in the following chapter, Perfect Life and Human Happiness; he then treats of Ethics, Education, Political Economy, State Harmony, and the Reserve Power of the State. Finally, he scathingly criticises some of the prevalent State incongruities and discords. A few quotations will probably give an indication of some of his views and of the simple and clear way in which he expresses them. Thus, speaking of education, he says, "Examinations if necessary at all should be, as regards mental capacities, what mechanical tests should be as regards properties of minerals. ..... The tendency amongst examiners will always be to arrange their tests so as to be able to judge decisively, not what the boy will be, but what he is; ..... so a premium is placed on memory, which more often than not is a sign of weak reasoning power." After comparing the automatic tool machine, which excels in turning out uniform work, with an amateur's lathe, which can do almost anything with any material, he says it is the amateur's brain, not the automatic brain, that can think quickly and correctly on all things, and can deal with any modern event in a rational spirit. About Board School teachers he gives this pregnant sentence: "It is truly surprising that the sturdy British artisans, whose Unions exclude labourers from their trades, should allow the labourers' children to become their children's teachers." In another place he commends the ancient Chinese system of ennoblement, according to which each child would have to pass through a grade that is one degree lower than that of his parent, if noble; consequently, as in China, a man can only rise two grades during life; it would be only possible for him under the most favourable conditions eventually to attain a dignity one grade higher than that of his parent.

When dealing with ethical questions the author suggests that a perfect life requires the maintenance of a due balance between the two opposing functions—reason and instinct. If reason unduly intensifies instinct, immorality results, whereas crime occurs when reason crushes instinct. The analogy in the music world is not adduced, but as instinct is more primitive than reason the reader is led to institute comparison with the imperfect music that results from the predominance of rhythm in drum tattoos (immorality) and the absence of rhythm that kills all musical life (crime).

One or two errors must be noted. Few biologists, we imagine, will agree with Mr. Stromeyer's remarks about the conclusions that have been drawn from Mendel's observations. Napoleon was not the undisputed possessor of a "perfect bodily constitution," while the statement that "repeated doses of opium are demanded" when Bright's disease is threatened is startling. On p. 327 there is a reference to the Greek Testament (1 Cor. vii. 21) which we have been unable to verify, but this may be due to a printer's error.

The scope of Mr. Stromeyer's knowledge, ranging over all the sciences with frequent illuminating historical references, is immense, and we cordially recommend this stimulating book to our readers.

Triumphs and Wonders of Modern Chemistry. By GEOFFREY MARTIN, B.Sc. Lond., M.Sc. Bristol, Ph.D. Rostock. London: Sampson Low, Marston, and Co., Limited. 1911. Pp. 358. Price 7*s.* 6*d.* net.

THE author may well be excused his unbounded enthusiasm over the triumphs of modern chemistry, for they are marvellous. It has been Dr. Martin's lot as a lecturer on chemistry to come into frequent contact with many pupils of different ages and of both sexes who have felt much interest in the new chemistry, as solving the grand questions of the universe in which they live and of the matter which surrounds them on every side; but often these pupils have had neither the leisure nor the inclination to master the technicalities and enter into the minutiæ of the regular text-books of chemistry. He has therefore provided for a wide class of readers who are intelligent without being learned.

The most satisfactory feature of the book is the author's clear exposition of the significance of those elementary chemical facts the importance of which, in the ordinary text-book on chemistry, are commonly left to the reader to find out for himself. The chapters with the headings, "Life on a Nitrogen World," "How Lightning Combines Nitrogen," "Nitrogen in Living Matter," "Problem of Fixing Nitrogen," "Manures," "Will our Food be Made in Future in Chemical Laboratories?" "Circulation of Nitrogen in Nature," illustrate this attitude exactly;

while in the chapters on the element carbon and carbon dioxide will be found some most interesting considerations upon such points as the cycle of carbon in nature, the rôle of coal, the life-history of the diamond, the steadily increasing amount of carbonic acid in the air, the evolution of that gas from volcanoes, its occurrence in effervescent springs, and so on. The chapter on "Fire, Flame, and Spectral Analysis" contains graphic descriptions characteristic of the book. Take, for example, the following: "It seems incredible that man, an animalcule crawling upon a grain of dust flung at random into a fathomless abyss, should have succeeded in actually analysing mighty suns millions, nay billions, of miles away with as much ease as he analyses a piece of rock, or a lump of salt, found to hand on the surface of the earth." Then follows a description in terms perfectly clear to the lay reader as to the part played by the spectroscope in making such an accomplishment simple.

The illustrations throughout the pages are vivid, although in places they are distinctly grotesque. But this counts for little in view of the freedom from exaggeration which marks the text; the temptation which the treatment of fascinating subjects offers to an enthusiastic writer to "let himself go" having been manfully resisted. This book will solve problems which worry many people of an inquiring mind; they will be grateful for the clear glimpse into the nature of things afforded by recent discoveries as expounded by Dr. Martin. The book gives to all not highly equipped in chemistry, physics, and technical knowledge an opportunity of appreciating the greatest phenomena of the universe.

The Real Cause of Stammering, and its Permanent Cure. A Treatise on Psycho analytical Lines. By ALFRED APPELT, Principal of the Institute for Stammerers, Goldington, Bedford. London: Methuen and Co. 1911. Pp. 234. Price 3*s.* 6*d.* net.

No one who has had any long experience with stammerers will be inclined to doubt that their affliction is in the great majority of cases a disturbance on the highest, or psychical, level of nervous function. It would be perhaps too much to maintain that peripheral causation of the condition is impossible, but the facts that plead in favour of the former localisation are impressive in their significance. Stammering, in other words, is essentially a neurosis, and once careful examination has dispelled the likelihood of any extrinsic source for the mischief, the condition should be treated in the light of this knowledge. Mr. Appelt, evidently an enthusiastic follower of the Freudian school, hails in psycho-analysis the panacea of stammering. He has felt it incumbent on him to "remove the veil of mystery" which he supposes has hitherto hung over the treatment of stammering, and has written this book admittedly from the point of view of the stammerer himself. Whether the latter is likely to be impressed or influenced or instructed by the "revelations" of the causation of his trouble furnished by the author is another matter. He will, no doubt, be interested to read that his sexual life begins from the day of his birth; that in his tender years he has come into contact with the sexual problem and "feels a libidinous emotion from his unconscious," which is experienced by him (for some unexplained reason) as dread; that his "mother, father, nurse, or nursemaid is ..... his first erotic love" (one is thankful Mr. Appelt has not employed the even more repulsive language of Freud himself in this connexion); and he will learn that thereafter "introversion of his libido" sets in, that "a superfluity of libido in the child's soul (conscious) and in repression (unconscious) results in the formation of an emotional complex" (whatever that may mean), and that once this is formed the impediment of stammering may develop. Oddly enough, Mr. Appelt seems to be aware of certain difficulties associated with the acceptance of these Freudian commonplaces, for he declares that in these circumstances stammering will set in *in cases where the child is disposed to stammer* (italics ours). Further, after asserting that shock, fright, or disease never produces permanent impediments of speech, he says a few pages later that the emotional complex will not take the form of stammering unless "the speech nerves are weakened owing to heredity, to a shock, or to diseases like whooping-cough or diphtheria."

We cannot follow the author through the long chapters on therapeutics, which may reasonably be expected to be those to which the embarrassed stammerer—his prospective reader—will first of all turn. Yet in them the uninitiated will find, we venture to say, a great deal that is difficult of comprehension, as well as much that is hypothetical to a degree. We can find no hint of possible difficulties in the way of the application of the psycho-analytic method to children, who must form a large, if not the major, portion of the stammerer class. To ask a child to give with concentration and sincerity a detailed account of its life and environment, to enjoin it to allow thoughts to come forward that inner resistances are repressing, to tell it to react in a subjective manner on the stimulus-word, and so on, is absurd. Mr. Appelt embraces whole-heartedly Freud's interpretation of dreams, but it is not clear in what way the pages devoted to a consideration of this very debateable matter can be expected to aid the stammerer, whose knowledge of such scientific jargon as "latent content" and "manifest content" must be limited. It is unfortunate that a slip-shod use of medical terms should occur with some frequency in the book. Stammering is referred to at one time as a manifestation of hysteria, again as a phobia, in another place as a condition akin to writer's cramp. The use of the term "neurosis" by the author is confusing and inaccurate—e.g., "the soil from which neurosis sprang into existence was already prepared by erotic emotion," &c. There is a curious mistake on p. 146 in reference to a statement attributed to Professor Janet.

A Manual of Practical Hygiene for Students, Physicians, and Health Officers. By CHARLES HARRINGTON, M.D., and M. W. RICHARDSON, M.D. Fourth edition. London: Henry Kimpton. Glasgow: Alexander Stenhouse. Pp. 850. Price 21*s.* net.

BEFORE his departure in 1908 for England, where he died unexpectedly, Dr. Harrington, the late professor of hygiene at Harvard University, had been preparing a revision of the "Practical Hygiene," of which he was the author, then in its third edition. His manuscript, as well as the remainder of the volume, have been revised and brought up to date by Dr. Mark Wyman Richardson, secretary to the State Board of Health of Massachusetts. The revision has been extensive, and Dr. Richardson has rendered a great service in undertaking it with such care and thoroughness. The present edition has lost nothing in clearness of exposition and excellent literary style; it is well printed, illustrated, and indexed. As a rule, text-books on public health matters which are published in the United States are used in this country principally for reference on matters in which American practice or theory differs from our own, but this volume makes a wider claim, as European and tropical work has been freely drawn upon, and the purely administrative questions, where each country has its own methods, find only a secondary place.

The first half of the volume deals with foods, air, soil, and water; the second principally with the hygiene of habitations, sewage disposal, disinfectants, military and naval hygiene, occupation and disease, insects in relation to human

disease, vital statistics, infection and immunity, vaccination and quarantine. The exposition of current theories of infection and immunity is particularly good, and in this, as in most sections of the book, the authors have made it their primary object to present a trustworthy review of facts gathered from all sources and of broad principles which should be accepted, while avoiding dogmatic statements on matters which remain controversial.

In any work of this nature there are necessarily subjects which individual readers would have wished to see amplified, and statements which seem to need qualification in the light of observations which are not referred to; but, as a whole, we have found very little to which serious exception could be taken. In view of the very full consideration given to milk in its relation to human tuberculosis, it is unfortunate that the volume was completed before the issue of the final report of the recent Royal Commission on Human and Animal Tuberculosis, which would have placed the authors on surer ground in dealing with the potential infectivity of tuberculosis of bovine origin. And for future editions, which are certain to be called for, we would suggest that in such matters as the methods of spread of small-pox, enteric fever, and scarlet fever greater use might be made of the publications of the Epidemiological Society of London (now continued in the Proceedings of the Royal Society of Medicine), which form so useful a compendium of the developments of preventive medicine, in its scientific aspects, in this country. We anticipate for this useful manual the increasing popularity which it fully deserves.

Manual of Toxicology. By R. A. WITTHAUS, A.M., M D., Professor of Chemistry, Toxicology, and Medical Jurisprudence in Cornell University. Reprinted from Witthaus and Becker's "Medical Jurisprudence, Forensic Medicine, and Toxicology" (second edition). London: Baillière, Tindall, and Cox. 1911. Pp. 1261. Price 30*s.* net.

THE general plan of this book is excellent, and the labour of reference is considerably lightened by the classification adopted. There is no preface, but the introductory chapter is an admirable essay upon the history of toxicology, at the end of which is a very complete bibliography of the subject, divided into—A, works exclusively toxicological: I., printed since 1850; II., between 1700 and 1850; III., before 1700. B, modern works on medical jurisprudence, &c., having reference to toxicology. The reader is next introduced to the difficulty of defining in succinct terms a poison. Dr. Witthaus distinguishes chemical agents which may cause death or injury by their destructive action upon the stomach as "corrosives." Clearing such harmful agents out of the way his definition of a poison becomes: "A poison is a substance which being in solution in, or acting chemically upon, the blood may cause death or serious bodily harm." A corrosive, however, is defined as "a substance capable of causing death or injury by its chemical action upon a tissue with which it comes in direct contact." The matter of definition does not rest so simply there, for obviously a substance, for example, hydrochloric acid, is a corrosive in strong form, whereas in dilute form it has no corrosive properties at all. Then what definition will include pathogenic bacteria which are not poisonous *per se*, but which are capable of elaborating poisons in a suitable soil? The best attempt at defining a poison is the French one quoted by the author, that "a poison is any substance which taken into the interior, or applied to the exterior of the body, is capable of causing death, or at least of destroying or seriously affecting health." The chapter on general toxicology begins thus with an interesting discussion, and the succeeding sections on causation, statistics, treatment, absorption, distribution, and elimination are most carefully done. The chapter on special toxicology includes the corrosives, the mineral acids, the alkalies, and the halogens.

The mineral poisons are first considered, of which arsenic, antimony, and phosphorus are examples; then the metallic poisons, such as barium, bismuth, copper, and zinc (chlorates are included in this category for a reason that is not quite clear, except it be that of convenience); then vegetable poisons (acids and alkaloidal); then animal poisons; and, finally, what the author calls synthetic poisons, which include carbon monoxide, chloroform, chloral, phenols, and nitrobenzene. Of course, certain poisons included in other sections also may be called synthetic, but he refers here to the poisonous organic substances which have no existence in nature or occur therein naturally only in minute quantity—substances which are the products of the chemical laboratory or of industrial processes. The care taken to record trustworthy methods of chemical detection and to indicate where the possibility of fallacies may arise is admirable. Such a single sentence as "we have failed to obtain this reaction by proceeding as directed above" (p. 908), is a mark of the author's precision and scientific attitude, and inspires confidence in the processes accepted. The experience of actual laboratory work at the bench is obviously of the utmost importance when that work is connected with the detection of poisons by chemical means.

The references to literature are very copious, and the index is a model of its kind. In particular will be appreciated the inclusion under the word "process" of the proper names of persons connected with various tests and analytical methods. The list, in alphabetical order, contains about 80 such names. The work is thorough-going, and already ranks high amongst the standard books of reference upon the subject.

The Ancient Egyptians and their Influence upon the Civilisation of Europe. (Harper's Library of Living Thought.) By G. ELLIOT SMITH, M.A., M.D., F.R.S., Professor of Anatomy in the University of Manchester, &c. With frontispiece and 15 figures in the text. London and New York: Harper and Brothers. 1911. Pp. 186. Price 2*s.* 6*d.* net.

THE impression left upon the mind of an attentive reader after the perusal of this book is likely to be that of astonishment—astonishment that so much new thought has been crowded into a small book of unpretentious exterior. The volumes of Harper's excellent series comprise semi-popular essays by a distinguished group of authors, and one expected to find no more, perhaps, than a clear and easily read account of the well-worn stock-in-trade of the Egyptologist. The present volume is, however, a fascinatingly daring excursion into the origin of the early population of the Nile Valley and its influences upon the ancient peoples of Asia, Africa, and Europe. Professor Elliot Smith in his nine years' familiarity with Egyptians, ancient and modern, had exceptional opportunities; and he was fortunate, too, that his graveside investigations were conducted with archæologists who, working with the best scientific methods, were able to provide him with what no other anthropologist in Egypt has hitherto had—viz., an accurate dating of all the material that he handled. Under these best of conditions he has examined a vast series of bodies representative of all periods of Egyptian history. It may be said truly that even the proto-Egyptian, the inhabitant of the Nile Valley who lived some 6000 years ago, has been made to parade all the details of his person, his clothing, his diet, and his whole life before us to-day. The author shows that, so far as our present knowledge goes, everything points to the fact that these people were indigenous to the Nile Valley, and that neither they nor their culture were imported from without. He depicts their life

in Egypt and Nubia and traces their kinsfolk in neighbouring lands; he shows how their arts evolved, till finally the tiny spark they kindled in a humble way lit up that great world-fire—the knowledge of metals—which, though it left the quiet dweller on the banks of the Nile comparatively undisturbed, set neighbouring hordes moving as waves across the mountains of Asia right to the western limits of Europe itself. The book, one feels, has somewhat the same tendency as the early evolution of Egyptian domestic arts of which it treats, for it seems to fire whole trains of thought, and to turn into a living thing what before was merely material for academic calisthenics.

LIBRARY TABLE.

Report on the Housing of Miners in Stirlingshire and Dumbartonshire. By JOHN C. MCVAIL, M.D. St. And., LL.D. Glasg., County Medical Officer. Glasgow: Robert Maclehose and Co., Limited. 1911.—The Local Government Board has recently called for reports from the medical officers of mining counties in Scotland on the housing of miners. A stranger to the subject might ask why the housing of miners should be specially investigated, but the answer is to be found in the conditions of the industry. Other workers, save agricultural labourers, are usually employed in or close to towns or cities where house accommodation is obtained in the ordinary way, the nature and cost of the accommodation being governed by the law of supply and demand. But coal-mines may be sunk far from any centre of population, and houses have then to be provided within a convenient distance of the shafts. This is seldom or never done by private enterprise, and a mining firm when opening a new colliery not near a town has usually to build a village for its employees. Much valuable, and at the same time interesting, information on the "Housing of Miners" has been embodied in this report which is published by the local county council at the request of the Local Government Board. Many defects are brought to notice, the commonest, most serious, and most flagrant nuisance that can be found in a village community, whether mining or ordinary, being the privy-ashpit system, which still prevails in so many places in Scotland, and which exists, though in very varying degrees, at most of the colliery rows in the counties to which Dr. McVail's report refers. Such privy middens, situated perhaps only 10 or 15 yards, occasionally much less, from dwelling-house doors and windows, are serious factors in the production and conveyance of disease, particularly by the breeding of flies, which, with their feet dipped in filth, invade the houses and infect food. Dogs and cats may rake amongst the refuse and afterwards play with children or contaminate food or milk that is standing exposed in the living room. Other points appearing to require attention are the provision of sculleries, indoor water-supply, water-closets, dustbins, washing houses, hot water-supply if practicable, coal cellars, paved footpaths, good roads, and garden plots. The maintenance of houses, roadways, drains, water-pipes, wells, sanitary conveniences, fences and drying greens in good order and repair is also urged. Truly such a deplorable condition of affairs as is shown in this report requires immediate remedy.

District Nursing. By MABEL JACQUES, Graduate of the Hospital of the University of Pennsylvania. With an introduction by JOHN H. PRYOR, M.D. 1911. New York: The Macmillan Company. Pp. 162. Price 4*s.* 6*d.* net.—It was a wealthy and philanthropic merchant of Liverpool, the writer tells us, who first conceived the idea of giving to the poor, in their own homes, the care of a trained nurse, so essential an adjunct in the saving of lives. As a result the first district or visiting nursing association was formed in Liverpool. Other cities quickly recognised the advantage of the movement and adopted it. District nursing, however, is no modern innovation, for in the early Christian era we know that there were certain women who visited from house to house caring for the sick. The need of a handbook dealing with the problems of organisation and expansion of district nursing is manifest at the present time, and this book indicates concisely the lines upon which district nursing should be based. Recent advances in charitable and social work make the district nurse an important factor in many new phases of philanthropic endeavour. In the campaign against tuberculosis and infectious diseases she will become more and more a necessary agency in preventive medicine. The time has now come when no public health department can be administered without the aid of a properly supervised and directed staff, comprising, amongst others, district visitors and district nurses. The writer has evidently studied her subject well, and this small handbook forms a welcome addition to a medical library.

Herbert Fry's Royal Guide to the London Charities. Edited by JOHN LANE. London: Chatto and Windus. 1912. Pp. 371. Price 1*s.* 6*d.*—This cheap and handy guide to the charities of London is now in its forty-eighth annual issue. The names of the various charities are given in alphabetical order, and brief particulars are supplied with regard to their aims and results, together with the dates of their foundation, the names of the chief officials, and their official addresses. There is also a classified index of institutions, which considerably enhances the value of the book. In an interesting preface on the charitable work of the year it is satisfactory to learn that for the support of the various charities a sum of no less than £30,000,000 sterling is held in investments, while large bequests are added year by year. Still, the fine sums available for charitable purposes do not adequately supply the needs of the institutions designed to ameliorate the undesirable social conditions which are a consequence of the growth of civilisation. The Insurance Act is causing much anxiety to our hospital managers, who fear that the provisions of the Act will affect adversely the contributions which they receive from employers of labour and from the better class of workmen, and, indeed, complaints that such is already occurring are now appearing in the daily press. As the editor of "Fry's Charities" points out, the public will be pursuing a singularly short-sighted policy should this prove to be the case, for "besides the direct treatment they" (the hospitals) "offer for disease and accidents, they act as schools of medical research and as unrivalled training grounds for the doctors and nurses, upon whose skill, patience, and genius the whole fabric of our medical world is built up."

JOURNALS AND MAGAZINES.

The Bristol Medico-Chirurgical Journal.—In the December issue of this magazine Mr. Charles A. Morton discusses the present position of the surgery of malignant growths, giving valuable advice as to the treatment of carcinoma of the rectum. Dr. J. A. Nixon calls attention to the spread of syphilis among members of a household by simple contagion, especially in the case of infants; and Dr. Newman Nield contributes some observations on tea poisoning, which he finds to be a not very rare condition. Dr. Carey Coombs writes on cardiac arrhythmia, with records of five cases, and Mr. G. Munro Smith on herpes and brachial neuritis, which may be different manifestations of the same affection.

The Birmingham Medical Review.—The two original articles which are contained in the December number of this review are devoted to diseases of children. Dr. Hugh

Thursfield] discusses errors and difficulties of diagnosis, including obscure cases of fever and of œdema, abdominal tumours and meningitis; and Mr. Seymour Barling deals with abdominal emergencies in childhood, especially with appendicitis and intussusception.

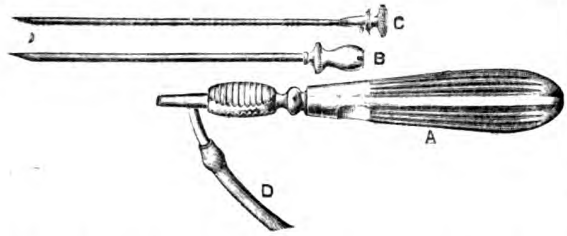
The Medical Chronicle.—Professor W. Stirling, writing in the December issue of this journal, makes a plea for the study of the history of medicine, and gives a brief summary of the chief events in this field, founded on the recently published work of Professor Neuburger, now translated into English. Dr. R. T. Williamson writes on the use of the spectroscope in medicine, and Mr. Robert Ollerenshaw discusses the causes and treatment of coxa vara.

The Edinburgh Medical Journal.—The late Professor Sir John Struthers made provision in his will for a lecture on anatomy to be delivered every third year in the Royal College of Surgeons of Edinburgh. The first of these lectures, delivered by Dr. Arthur Keith, is published in the current number of this journal. It deals with the progress of anatomy during Struthers's life and with the various men of note by whom advances were made. Dr. William Russell writes on the position of the stomach as a guide to pyloric or duodenal difficulty; and Dr. James Ritchie contributes a cautious paper on the subject of vaccine therapy, noting that practice in this field is in advance of actual knowledge. Mr. J. W. Struthers records a case of a Dermoid Cyst of the Neck, containing a number of curious soft white concretions.

New Inventions.

A CONVENIENT AND SIMPLE APPARATUS FOR THECAL (LUMBAR) PUNCTURE.

I FIND that the little apparatus, of which an illustration is here given, facilitates lumbar puncture and enables the operator to have greater control than if a syringe is used. Most authorities agree that suction should not be employed, therefore the syringe usually only serves as a handle. The syringe needle is usually unprovided with a stilette and the fluid is liable to become contaminated when dripping from the end of the needle after the syringe has been removed. A glass syringe is also liable to crack whilst being sterilised, and the process of sterilisation must take some time, as the syringe must be put into cold water which is brought up to



the boil and then of course must be allowed to cool down again before the syringe can be removed, if we wish to avoid the risk of cracking. This procedure takes at least a quarter of an hour. My little apparatus can be plunged straight into boiling water and taken out without any fear of injury. The cerebro-spinal fluid is conducted through the rubber tube D into a sterile test-tube, and thus there is practically no fear of contamination. If, after the puncture has been made, the fluid does not flow into the test-tube the holder A is removed and the stilette C passed down the needle B. I find, however, that it is only very occasionally that the stilette has to be used.

The apparatus was made for me by the Holborn Surgical Instrument Co., Limited, Holborn Circus, London, E.C.

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REPORT OF THE ASYLUMS COMMITTEE OF THE LONDON COUNTY COUNCIL FOR THE YEAR ENDING MARCH 31ST, 1911.

Statistics.

THE average daily numbers on the registers of the nine London County Council asylums and epileptic colony was 19,997. There were admitted during the year 3727 patients, and 1143 persons were discharged recovered. There were 1645 deaths. The patients for whom on Jan. 1st, 1911, the Council was primarily responsible to find accommodation was 20,158, this number including, besides the patients in the asylums, patients in other county and borough asylums under the committee's contracts or under arrangements made by the guardians. The accommodation available on Jan. 1st, 1910 (excluding Claybury Hall), was 19,867 beds, being an increase of 140 beds. The increase would have been greater but for a reduction in the accommodation for women effected at Hanwell Asylum through the disuse of some basement dormitories which had been adapted for occupation during a time of great pressure. The above number of patients is only a proportion of the total number coming under the purview of the London Poor-law authorities. It excludes patients in the Metropolitan Asylums Boards asylums, in workhouses, and those living with relatives and friends who are visited quarterly by the parish medical officer. This year's figures of the number of patients for whom the Council has been responsible show an increase of 244 on those for the previous year, and the rate of increase is again ascending, though the average rate of increase over the past 21 years appears to be declining.

Mental Hospital: Selection of Site.

Plans of a new asylum on the villa principle to be erected on the Horton Estate are still in preparation. A contract for the purchase for £10,000 of two freehold properties at Denmark Hill has been entered into, and is waiting the approval of the Secretary of State. The land, some 4½ acres in area, it is hoped will provide a satisfactory site for the mental hospital for 100 patients towards the cost of which Dr. Henry Maudsley in 1908 promised to contribute a sum of £30,000. It appears that the task of selecting a suitable site within four miles of Charing Cross has been particularly difficult. So far as it is possible to form an estimate of the cost of building and equipment, it is anticipated that this will amount to another £40,000.

Recurrent Insanity.[1]

Attention is drawn to a remarkable instance of a male patient admitted to Banstead Asylum on Feb. 13th, 1911, for the eighth time. This man is only 37 years old, and in addition to the periods passed at Banstead has been in Bethlem Royal Hospital, Ayrshire Asylum, the Kent County Asylum, Hanwell Asylum, and in a private licensed house. He has therefore been admitted to asylums on no less than 13 occasions. He married in 1903 and there are five children by the marriage, two males and three females (ages ranging from a little more than 1 year to 7 years), all of whom are now chargeable to the guardians of a London parish. The guardians' general relieving officer further states that the patient's wife is at present employed in service, but that the whole of the family have on and off been in receipt of indoor and outdoor relief since 1906.

These facts plainly indicate the great difficulty experienced in dealing with cases of recurrent insanity. Such cases, as the law stands at present, must be discharged as soon as they are apparently recovered, but it is often quite evident that with the removal of the fostering restraints of asylum life and the re-subjection of the patient to the stress and hardships of normal existence he will speedily break down. Moreover, as in the present instance, opportunity is afforded by the intervals of liberty for the propagation of children who must share in the mental and nervous instability of the parent, and who in their turn will probably swell the number of persons for whom asylum accommodation and care have to be provided.

Chapter XXIX. contains the report of the director of the Pathological Laboratory, Dr. F. W. Mott. It contains long lists of the papers issued and about to be issued.

[1] See THE LANCET, Dec. 16th, 1911, p. 1721.

THE LANCET.

LONDON: SATURDAY, JANUARY 13, 1912.

The National Insurance Act.

THE feeling among the medical profession with regard to the National Insurance Act has undergone no change during the week, unless it be that the general distrust of its provisions has increased. Many practitioners, the exact figure being rather uncertain, have signified public disapproval of the measure in response to questions submitted from two different sources. This was absolutely certain to be the result of the reference of any general question on the point to the whole constituency. For the future the feeling of the medical profession as a whole that the measure in its present form threatens sorely their professional and scientific status can be taken for granted, leaving all free to work towards a fair solution of the grave sociological difficulties that have been thrust upon us—and thrust upon us, we have always believed, with the best of intention towards mankind, if with small knowledge of medical circumstances.

Dr. LAURISTON SHAW addresses a letter to us this week in which he points out "the great need ..... to search out our points of agreement and work steadily together for their achievement. No sense of false pride or petty ambition must stand in the way of making use of every individual or institution that may be useful in securing our common aim." That is well said, but it is one thing to use an institution for a common aim and another to have a common aim in using an institution. The medical profession may easily endorse Dr. LAURISTON SHAW'S words, which have often appeared in our own columns, as to the potentialities for union contained in the British Medical Association, and yet may believe—as a large majority do—that the executive of the Association has not developed those potentialities at a critical point in medical history. It is for this reason, and for no other, that two movements have quickly sprung up to reinforce the Association, and as far as the Association is concerned its first task is to arrange that its members agree to live together in peace. On this matter sound advice is given them by Dr. CHARLES HARFORD in our columns this week. When the Association is a harmonious institution, it can be made use of in the way which Dr. LAURISTON SHAW advocates. Its task will be that of all of us—namely, to consider what are the regulations under which the Act, now the law of the land, can be so worked that medical service receives proper recognition, and that the public obtain benefits that are benefits in reality as well as benefits under an Act. It is expressly stated in the National Insurance Act that the Commissioners are to frame regulations in accordance with which the Local Insurance Committees will arrange with practitioners for the medical treatment of insured persons. These regulations will soon be forthcoming, and, as we said last week, union within our ranks must produce an impression upon those charged with framing them. It is these regulations which the medical profession must consider before deciding to take part in, or to stand aside from, the working of the Act, and what has to be done now is to prepare to meet the regulations in the spirit in which they are offered. The great corporations of the profession may here be able to play a part.

The Qualities of a Consultant.

THE principal teachers in any school of medicine would probably be nearly unanimous in any endeavour to select from among their students those who were most likely to achieve distinction in some branch of their future calling; but it may be doubted whether they would be equally in accord concerning the still more definite selection of those in whom this branch would be what is commonly known as consulting practice, whether generally medical or surgical, or confined within the narrower limits of a specialty. We should do no more than bare justice in admitting that the physicians and surgeons who, by common consent of the profession and of the public, have come to occupy what may be described as the highest pinnacles of consulting rank, have almost invariably been worthy of the confidence reposed in them; but we must equally admit that many others who, in the estimation of those best acquainted with their merits and attainments, have been at least equally worthy, have continuously failed to secure equal recognition, even though assisted by the ordinary opportunities of practice and teaching which are afforded by hospital appointments. Consideration of the causes alike of the successes and of the failures indicates that the circumstances of student life and of training may tend to the ultimate development of either issue, but the indication is a rough one. Is the successful consultant born with special qualifications in which the unsuccessful, although in some respects equally learned men, may be deficient; or do the two classes differ only in respect of the bearing upon their respective careers of the "time and chance that happeneth unto all"? In either case is it possible for the ambitious student so to regulate his studies or so to train his faculties that his chances in this particular competition may be improved? Are there any things which, with special reference to this object of ambition, he should strive to do, or any other things, perhaps more important still, which it is necessary for him to avoid? What, in short, are the special characteristics of consultants as a class, and in what manner, and to what degree, are these characteristics of a kind to admit of cultivation? The essential preliminaries of adequate professional knowledge, and for surgeons of adequate manipulative skill, must, of course, be assumed to exist as essential foundations in every case.

Taking, in the first instance, the needs of the practitioner by whom the consultant is called in, it may perhaps be assumed that one of the first of them is the support to be derived from the suggestion of a perfectly definite

course of procedure, founded upon an equally definite recognition of the true character of the departure from health. In some cases this character may be altogether obscure; in others it may appear to admit of one out of two or more solutions; and in all the first-aid asked for from the consultant is accuracy and completeness of diagnosis, or, in other words, not only the truth, but the whole truth, as far as it is ascertainable. The power of meeting this demand in a satisfactory manner is generally gained in one way—by the most minute possible study of symptoms (whether prominent or obscure) in the wards of a hospital, and by the most accurate possible comparison of these symptoms with the conditions which are disclosed either in the progress of the case towards recovery or ultimately in the post-mortem room. Such a comparison will usually be the more fruitful the less it is associated with hypothesis; the collection of observations should be large before any attempt is made to use them as a foundation for general deductions, lest these, being premature or erroneous, become distorting media for subsequent experience. No two cases of illness are alike, and the differential phenomena are those which it is of the greatest importance to observe and to remember. The consultant will constantly be called upon to deal with some apparently obvious malady *plus* x, and his power of determining the value of x will be the element on which his success will in all probability depend. But although assistance in the recondite may be what is generally sought from the consultant, the general practitioner and his patient may stand in need of reassurance where there seems no reasonable doubt of the diagnosis that has been made. It is often particularly difficult to follow the recommendation that the same course should be pursued that has been tried already, and that patience should be maintained in the face of the seeming failure of that course to remove the conditions. In this situation no one will be found more useful than that rather exceptional person, the consultant who is developing or who has developed from the general practitioner into the counsellor of general practitioners. It is true that throughout the busiest years of a successful career such a consultant may be in no close way in touch with the pathological side of hospital work. He must rely for his appreciation of the merits of many new therapeutic developments upon a much smaller personal experience than he who is in honorary charge of many beds in a great public institution; and his chances of having seen more than an isolated case of rare disease will not be so great. So far he must be at a disadvantage in comparison with the more usual type of consultant surgeon or physician; but, on the other hand, his great experience of the domestic treatment of disease may enable him more readily than one whose professional life is largely confined to the wards of his hospital and the walls of his consulting room to estimate how far in an uncertain case a certain treatment should still be persevered in; how far his brother practitioner is right in estimating the general condition of the patient to be no better or no worse over a long term of illness; and, lastly, how far details of nursing and treatment could be made less irksome. There is every room for such consultants, and the practical help which they can be to their fellow practitioners is truly great; with the present great developments of post-graduate work they may well become more numerous as the opportunities of renewing familiarity with the latest hospital experience grow more numerous and effective.

The main thoroughfares of diagnosis have been marked out by the footsteps of many generations of practitioners; and it is chiefly in the by-ways that opportunity can now be found for the display of exceptional acumen, or for the exercise of powers of observation trained to notice and to interpret the smallest departures from the customary course of things. There can, nevertheless, be no more fatal error than to allow the obvious to divert attention from the possibly obscure, or to lead to neglect of methods of observation not immediately suggested by the symptoms. The consultant can neglect nothing, and his most remarkable successes will often be the results of leaving no element of the case unexplored. This is the answer to all questions about the born capacity of the student to become a consultant, and as to the part played by luck in the attainment of success in such a position. The special characteristics of successful consultants are observation to see and judgment to weigh, and neither can be acquired save by industry. The most able student may start with the best chance of developing what may be termed the detective faculty, but unless his ability is reinforced by painstaking, minute, and laborious work in the wards his *flair* will avail him little. The general practitioner who has arrived at the position of a consultant owing to the gratifying fact that he becomes recognised, first in his own locality, and later through a more extensive range of country, as a man who is worth consulting, would never have arrived at that position had he not made extraordinarily good use of his opportunities when attached to a hospital, and could not maintain that position if he did not take all possible steps to keep himself abreast of both scientific and technical progress. A consultant is not a man who is ready to be consulted so much as a man whom his colleagues want to consult, a fact which sometimes escapes the attention of the laity.

The Uses of Medical Statistics.

THE limitations of statistics as applied to medical problems are well indicated in the following words of Mr. ARTHUR BOWLEY, the author of one of the best modern treatises on elementary statistics. Speaking of the want of recognition by statisticians themselves of the limitations of their work, he says: "At best they can measure only the numerical aspect of a phenomenon; while very often they must be content with measuring, not the facts they wish, but some allied quantity. We wish to know, for instance, the extent of poverty, its increase or diminution: poverty we cannot define or measure, and we cannot even count the number of the poor; all we can do is to state the number of officially recognised paupers, and add perhaps some estimates from private sources; but this gives us no clue to the intensity of poverty in individual cases. Or we wish to obtain statistics of health: all we can measure is the death-rate, and average length of life—very different

matters. The statistician's contribution to a sociological problem is only one of objective measurement, and this is frequently among the less important of the data; it is as necessary, however, to its solution as accurate measurements are for the construction of a building." Now this is quite true but the time has assuredly passed when it is necessary to justify the skilful employment of statistical methods for the elucidation of medical problems. Certain it is that without such help medicine, as a science, could never have achieved even its present degree of precision.

Our first text-books in the study of preventive medicine are the publications of the Registrar-General, with which the honoured name of WILLIAM FARR, the founder of vital statistics, must ever be identified. The value of the aid received from this source has been appreciated by all interested in the health and prosperity of our people, even where the qualified nature of that aid has been most clearly perceived. Half a century ago RUMSEY of Cheltenham emphasised the contention that as no public account is taken of the number and duration of the attacks of illness which shorten the effective life-time of the people, their condition in respect of health and vitality must be inferred solely from the number of lives lost; and there are facts in abundance to prove that the mere number of deaths in any locality bears no constant, or even approximate, ratio to the amount of unhealthiness actually existing there. Both the personal antecedents of the dead and the remote causes of death now generally escape notice, while the deaths of those who enter a district to die there belong rightfully to another district. Vast numbers succumb in our large hospitals, workhouses, and asylums whose diseases were not contracted in the places where they died, and who can scarcely be said to have lived there. Accordingly, the mere death-rate without the life-rate of the inhabitants, may, and often does, lead to fallacious conclusions as to local unhealthiness. Moreover, when the ages of a population are examined, the crude and hasty deductions from a general death-rate are not infrequently reversed. We doubt whether public opinion would at present support a proposal for the State registration of sickness of all kinds throughout the country. It would appear, however, that with medical officers everywhere responsible for the public health, with the army of parochial medical officers in attendance on the sick poor, and with the Central Department in Whitehall at their head, the setting on foot of such a project ought not to be impracticable; and it should follow that, given the coöperation of the registration staff at Somerset House, the cost of the supplemental service should not be prohibitive. Read in the light of codified information as to sickness incidence the figures relating to death-rates would assume a new importance; moreover, such a scheme of sickness registration might be highly valuable to public health authorities.

The opening years of the current decennium will be remarkable in the history of English vital statistics, as the period in which far-reaching changes have been inaugurated in the arrangement and publication of our national records of mortality and its causes—changes which must necessarily exert a profound effect on the future of State medicine as well as on the progress of sanitary science in this country. We have already noticed[1] the general tendency of the new arrangements adopted at Somerset House for the compilation of statistics, as set forth in the Registrar-General's report for 1909, but we feel it desirable again to allude to the matter for the information of those who are not familiar with the official document. Successive Registrars-General have deplored the discrepancies existing between the statistical data prepared by the local administrative authorities and those published by the Central Office. This anomaly is due to the fact that whereas, on the one hand, the local administrative authorities require statistics relating to urban or rural sanitary districts, on the other hand the tables published annually by the General Register Office relate not to administrative but to registration districts. But, unfortunately, the two types of districts are coextensive in very exceptional cases only. Hitherto the difficulties of general coördination of areas have proved insuperable, although something has already been achieved in this direction at the request of certain of the larger municipalities. It is satisfactory to learn that such of the difficulties as were removeable without alteration of statute law have now been surmounted, and, in view of the almost prohibitory character of those difficulties, the credit due to Mr. BERNARD MALLET is on that account proportionately increased. Accordingly, from the year 1911 onwards the returns of natality and of mortality will be arranged and published according to administrative areas, although the facts must still be collected for registration areas as heretofore. The substitution of the former for the latter of these areas renders desirable a still further correction of the returns. In order to ascertain even approximately the death-rate of a given place the deaths of strangers occurring therein must be excluded, the deaths of natives of the place that have been registered elsewhere being, of course, included. It may, indeed, reasonably be contended that in order to secure for medical statistics a reliable and permanent foundation the establishment of a national system of sickness registration is essential. As a first step the returns of sickness now required by the Local Government Board's orders from the hospital and Poor-law authorities may provisionally be tabulated and circulated, after expert analysis and criticism by the statisticians now dealing with the statutory records of birth and death.

[1] See THE LANCET, March 25th, 1911, p. 827.

FOREIGN UNIVERSITY INTELLIGENCE.—*Amsterdam:* Dr. K. Herman Bouman has been recognised as *privat-docent* of Diagnosis of Mental Diseases.—*Berlin:* The title of Professor has been granted to Dr. Julius Wohlgemuth, Oberarzt of the Frederick the Great Orphanage for Berlin at Rummelsburg; Dr. Erich Müller, surgeon to the Berlin and Brandenburg Cripples' Home; Dr. Konrad Biesalski, a laryngologist and otologist; Dr. Josef Herzfeld; Dr. Max Josph, an eminent dermatologist; and Dr. Ferdinand Hein, assistant in the University Anatomical Institute. —*Bonn:* The title of Professor has been granted to Dr. Karl Grube, well known for his researches on diabetes; Dr. Arthur Hübner, Oberarzt of the University Clinic for Nervous and Mental Diseases.

Annotations.

"Ne quid nimis."

THE SIGNIFICANCE OF THE THEORY OF HEREDITY IN OPHTHALMOLOGY.

THE influence of heredity in disease has long been an accepted fact, and many persons would assert that it has been even an exaggerated fact; but it is only comparatively recently that the hereditary transmission of physiological or pathological characteristics has been sufficiently investigated to afford some insight into the laws which govern the process. The experiments and deductions of Mendel, published in 1865, passed almost unnoticed until attention was drawn to them again in 1900 by de Vries. Since that date the subject has been assiduously worked at experimentally and theoretically by Professor Bateson and many others whose names are familiar to English readers. The Mendelian theory has not been accepted without cavil, and the criticisms of Professor Karl Pearson and others have but added to the impetus of the investigation. All, however, are agreed that the fundamental requirement is the accumulation of well-authenticated and scientifically certified material on the lines introduced by Sir Francis Galton. In no domain of pathology has the collection of illustrative examples been hitherto more productive than in ophthalmology. The types of ocular disease which display most clearly the influence of hereditary transmission are often more sharply defined and less obscured by the possibilities of extraneous influences than most other types of bodily ailments. Nowhere has the investigation been carried on with greater enthusiasm than in England, and the work of Mr. E. Nettleship in this domain stands out *facile princeps*. Professor Peters,[1] in his useful review of past work on heredity in relation to ophthalmology, gives Mr. Nettleship and his English colleagues due credit for their work on the various forms of hereditary cataract, hereditary night-blindness, and the inheritance of errors of refraction. But his paper will be specially welcomed for his review of the publications of German writers on the influence of heredity in congenital abnormalities of the eye. The rival theories of delayed or disordered development and intra-uterine inflammation as explanatory of congenital opacities of the cornea and anterior staphyloma have been warmly discussed in England and abroad, and his remarks on these subjects will be read with interest. Hereditary optic atrophy, an example of maternal transmission, receives less attention than it merits, and the late Mr. Ilbert Hancock's excellent paper is not mentioned. Congenital colour-blindness, too, another and better example of the same mode of transmission, is not dealt with. The author is on less solid foundations when he enters upon the discussion of the hereditary influence in senile cataract and concomitant squint. His remarks upon squint are well worthy of careful consideration, for if it should be proved that there are groups of cases of squint in which the hereditary principle is of prepotent influence it will not be without significance in the rational treatment of this disorder. If, for example, in such cases it should be proved that either congenital amblyopia or the loss of the power of fusing the images derived from the two eyes is a hereditary characteristic little hope of improvement by orthoptic treatment can be held out. The inheritance of optical defects of the eyes has hitherto thrown little light on the laws of heredity, chiefly owing to number and complexity of possible modifying factors. It is in examples of this nature that scientifically controlled statistical investigations are most needed, and such investigations could not be in better hands than Professor Karl Pearson's, who, with Miss Barrington, has already issued a valuable communication on the relative influence of heredity and environment on sight from the Galton Eugenics Laboratory.

[1] Die Bedeutung der Vererbungslehre für die Augenheilkunde. By Professor A. Peters, Rostock. Halle: Carl Marhold. Pp. 30. Price M.1.

DECEMBER AT HOME AND ABROAD.

THE last month of 1911 will rank as one of the mildest and wettest Decembers on record in this country, but both the high temperature and the rainfall were more marked in the south-western, southern, and south-eastern districts than in the north and north-west. There was, nevertheless, a fair amount of sunshine for the time of year. The mildness of the weather was very noticeable during the daytime, and particularly so after sunset. No frost except an occasional whitening of the ground occurred after the 7th or 8th. All the subsequent nights were very mild for the season in nearly all parts of the kingdom, many of them having a minimum temperature reading higher than that of an average December afternoon. Again and again the thermometer rose to 50° sometime between sunrise and sunset, while in the south and south-west that figure was reached or exceeded on a large majority of the days. At Torquay the mean maximum temperature was as high as 52°. In the metropolitan area the mean maximum at Westminster was 50·5°, this being more than a degree higher than that at Kew and Greenwich and as much as 3½° higher than at Hampstead. The nights were also rather milder at Westminster than in the suburbs, the mean minimum being 40 7°, against 39·5° at Hampstead and Greenwich and 39° at Kew. Very few days passed without bringing more or less rain. In the London district generally there were only seven or eight days without a measurable quantity. The aggregate was about 4 in. at Westminster and Greenwich and 4·5 in. at Kew and Hampstead. This, although more than twice the average, is very light compared with that which was common over a wide area in the south-west of England, where numerous localities reported a total exceeding 8 in. and some exceeding 10 in. Over these islands as a whole the sunshine showed little divergence from the normal, some places registering an excess and others a deficit. At some of the most rainy spots in the south-west of England, however, there was much more sunshine than is usual in December. At Torquay, for instance, where rain fell on 26 days and attained a total of 10·4 in. (6·5 in. above the average for December), the sun shone brilliantly during 73 hours, a figure 21 hours above the normal. In the more central parts of London the aggregate sunshine was much in excess of the average. At Westminster the average is only 13 hours, but last month the figure was 27 hours. In the metropolitan suburbs there was nearly as much sunshine as at many of the resorts on the south coast, the respective figures at Kew, Greenwich, and Hampstead being 42 hours, 41 hours, and 35 hours. In the City the value was lower, the total being no more than 10 hours. The City average for December is, however, only seven hours. At Westminster, Greenwich, and Hampstead there were 15 sunless days, and in the City 21, but at Kew there were only 11. The extreme south-west evidently benefited by the main wind current being from the south-westward, the smoke and dust being driven further to the east and north-east. In Switzerland and the central countries of the Continent the weather was mild for the time of year. Severe frost was unknown, and on some days the warmth was almost abnormal. The Riviera expects more or less rain in December, and on this occasion it had a fair amount during the first fortnight. The dry intervals were,

however, very pleasant, with a clear sky and a rather high temperature, and during the latter half of the month the weather was generally very fine, with the thermometer rising to nearly 60° during the day and remaining at a fairly high figure at night. As a rule the Riviera was almost 10° warmer than the south coast of England. Biarritz was not so sunny as the Riviera, and on no less than 13 days there was a measurable quantity of rain. The temperature, too, had a greater range than on the Riviera, many of the days being warmer and some considerably colder. In Italy the earlier half of the month was more or less rainy, some of the falls being heavy and prolonged and a cloudless sky the exception. Subsequently the general condition underwent great improvement, and although the temperature was rather lower and the wind at times stronger than on the sheltered Riviera, the weather was extremely agreeable as a whole. Frost occurred occasionally at some of the inland places in the north, and the nights over a large portion of the country were often colder than in England. The Algerian coast and the islands of the Mediterranean experienced generally fine weather, broken rarely by rain and sometimes by strong, squally winds. A temperature of 70° in the shade was not very uncommon during the early days, and even towards the end of the month the thermometer remained rather high. At Paris the weather was very little better than in London. Rain fell on as many as 22 days and yielded a total of 3·9 in., while the sun shone for no more than 47 hours, and on 16 days it was not seen at all. As in this country, the main wind current in France was between west and south-west, and its average velocity high.

DEFINITIONS OF VINEGAR.

THE desirability of having an official definition for vinegar was represented to the President of the Local Government Board by a deputation of the London and County Vinegar Brewers' Association, Limited, last autumn. The Assistant Secretary of the Board has now replied to the effect that while the Board has not at present any power to frame definitions of vinegar or artificial vinegar, it is desirable to state its views on the subject. These views are as follows:—

General Standard for Vinegar.

Vinegar is a liquid derived wholly from alcoholic and acetous fermentations; it shall contain not less than four grammes of acetic acid (CH_3COOH) in 100 cubic centimetres of vinegar; it shall not contain arsenic in amounts exceeding 0·0143 milligramme per 100 cubic centimetres of vinegar, nor any sulphuric or other mineral acid, lead or copper, nor shall it contain any foreign substance or colouring matter except caramel. Malt vinegar is derived wholly from malted barley or wholly from cereals, the starch of which has been saccharified by the diastase of malt. Artificial vinegar.—Artificial vinegar is any vinegar, or substitute for vinegar, containing, or derived from any preparation containing, any added acetic acid which is not wholly the product of alcoholic and subsequent acetous fermentation. It shall contain not less than four grammes of acetic acid (CH_3COOH) in 100 cubic centimetres of the artificial vinegar. It shall not contain arsenic in amounts exceeding 0·0143 milligramme per 100 cubic centimetres of artificial vinegar, nor any sulphuric or other mineral acid, lead or copper, nor shall it contain any foreign substance or colouring matter except caramel.

It cannot be doubted that these "views" will largely guide magistrates in cases in which a liquid described as vinegar is in dispute; just as the recommendations of the Departmental Committee upon Preservatives and Colouring Matters in Foods are regarded as authoritative, although they have no real statutory force. If the principle of definitions or standards is recognised by the Local Government Board, as seems to be the case in its recent communication on the vinegar question, great developments should follow. We realise that the general subject requires careful handling, but it would be more satisfactory if instead of official "views" or "recommendations" the statutes of the land provided a very definite line to go upon. As things are, the expression of "views" by the Local Government Board or the drawing up of "recommendations" by a Departmental Committee are apt to mislead our legal and judicial authorities besides the layman into thinking that these views and recommendations are sure ground upon which a decision will be based. The Local Government Board acknowledges that it has no power to frame definitions, but practically expresses an opinion as to what these definitions should be. That may be an awkward position for a Government department to take up.

THE MEDICAL DIRECTORY, 1912.

THE sixty-eighth annual issue of Messrs. J. and A. Churchill's Medical Directory[1] is now out. It shows a total increase of medical practitioners of 411 over last year, the entire number now being 41,053 disposed as follows: London 6480, provinces 17,735, Wales 1370, Scotland 3982, Ireland 2802, abroad 5364, Services 3320. As heretofore, the Directory contains an abstract of the principal laws affecting the medical profession, revised to date by Mr. W. Oliver Hodges, barrister-at-law. No reference, of course, could be made to the Insurance Act, as it was not an accomplished fact at the time of publication. There are the usual lists of the members of the General Medical Council and the Central Midwives Board, the holders of medical appointments to the King and the Royal Family, and of members of the medical profession on whom titular distinctions have been conferred. Mr. Norman Forbes contributes a gazetteer of the principal places of health resort, both British and foreign. Lists of officials of the Local Government Board and of the coroners of England and Wales, as well as of medical journals published in Great Britain, of Royal Commissions still sitting to deal with medical and public health questions, and of insurance offices follow. The Medical Directory fully maintains the reputation increasingly established through nearly seven decades.

A STUDY OF THE PAIN-SENSE IN THE PLEURAL MEMBRANES.

IT is well known that in some cases of pleurisy the pain is felt locally, while in others it may be referred, more especially in basal cases. An interesting experimental study of the pain-sense of the pleural membranes is recorded in the *Archives of Internal Medicine* of Dec. 15th, 1911, by Dr. Joseph A. Capps, of Chicago. It is known from anatomical investigations that the parietal pleura is innervated by the intercostal, sympathetic, and vagus nerves, while the visceral pleura is supplied by fibres from the pulmonary plexuses derived from the vagus and sympathetic nerves. The diaphragmatic pleura is supplied by the phrenics, and it has been shown by Cavalie that the last six intercostal nerves penetrate from 1 to 2 cm. into the margin of the diaphragm. Dr. Capps has studied the distribution of pain in 240 cases of pleurisy and pleuro-pneumonia, and in 75 cases of thoracocentesis he has attempted to explore the pleural surfaces with a long wire. In only 35 of these were the conditions favourable to free exploration, since a pleura covered with a thick exudate may obviously give no response to irritation. He finds that the visceral pleura is devoid of pain-sense. Irritation of the parietal pleura produces sharp pain that is accurately localised by the individual over the spot that is touched. It does not give rise to referred pain in the neck or in the abdomen. Irritation of the central portion of the diaphragm—viz., the part that is supplied by the phrenic nerve—sets up pain in the neck. Irritation of the periphery of the diaphragm—viz., the part supplied by the last six intercostal nerves—produces pain in the lower thorax, in the lumbar region, or in the abdomen The neck pain produced by irritation of the

[1] The Medical Directory, 1912. London: J. and A. Churchill. Pp. xliv. + 1964. Price 14s. net.

central part of the diaphragm is a true referred pain. The afferent impulses reach the spinal cord through the fibres of the phrenic nerve and excite painful impressions in the skin and superficial tissues supplied by the third and fourth spinal segments. The maximum point of pain has a marked tendency to appear along the ridge of the trapezius muscle. The pains elicited by irritation of the peripheral portions of the diaphragm are also referred pains, being distributed over the thorax and epigastrium in areas corresponding to the dorsal segments from the seventh to the twelfth. Both with these pains and with the neck pain there are associated cutaneous hyperæsthesia and hyperalgesia. The distribution of the referred pains varies with the part that is touched and with the degree of irritation. The more intense it is the greater the tendency of the pain to spread down over the lower abdomen. When the posterior part of the diaphragmatic pleura is irritated the pain is most marked in the lumbar region. Irritation of the pericardial pleura was followed by pain in the neck similar in character to that induced by irritation of the central portion of the diaphragm. It is interesting to note that in a series of cases of diaphragmatic pleurisy, in some of which the diagnosis was confirmed by necropsy, pain was present in the lower thorax, abdomen, or lumbar region in the great majority, while in about half of the cases there was pain in the neck. This affords an interesting illustration of the practical value of Dr. Capps's observations, which demonstrate clearly the origin and nature of pleural pain, and explain the difficulties which not infrequently arise in the diagnosis of conditions immediately above and below the diaphragm. Dr. Capps further states that he has a few observations which tend to show that the phrenic and intercostal nerves supply the peritoneal surface of the diaphragm with pain-sense as well as the pleural. His observations merit very careful consideration, and are an important contribution to the study of pleurisy.

THE TREATMENT OF BURNS.

IN the *International Journal of Surgery* Dr. J. F. Alexander has reported an interesting investigation of the treatment of burns. Having the unusual opportunity of treating simultaneously 27 cases of burns of the first, second, and third degrees he made a comparative test of five methods. All the patients were injured in trying to escape from the second floor of a burning building, and nearly all presented burns of the face, arms, and chest. Varying but very extensive areas of skin were involved; in four cases duodenal ulcers occurred; all the patients recovered. Seven cases of burns of the first, second, and third degree were treated by the boric acid solution bath, 5 of same degrees by picric acid solution, 5 of the second and third degree by carron oil, 5 of the second and third degree by unguentine, and 5 of the third degree by ichthyol ointment (48 grains of ichthyol added to 2 drachms of olive oil and incorporated with enough lanolin to make three ounces). The boric acid baths were given for two to six hours and repeated at intervals of two to six hours. A little experience showed that the parts should remain three hours in the bath. In the second group of cases gauze was saturated with picric acid solution and covered with oiled paper. The gauze was kept continuously moist and the dressing was renewed every second or third day. The ichthyol ointment was applied to the burns and covered with gauze and then with oiled paper. In all cases the lesions were thoroughly cleansed with soap and water before any dressing was applied. If there was considerable destruction of skin peroxide of hydrogen solution was then applied. If the dressing adhered to the raw surface a few drops of this solution allowed to fall on the gauze quickly dissolved the inspissated material and allowed easy and painless removal. All exfoliated epithelium was removed. In burns of the first degree the picric solution gave much the best results, and in burns of the second degree perfectly satisfactory results. In spite of extensive areas of skin involved no symptoms of picric acid poisoning were observed. In some cases the urine was darkened, but this condition soon cleared up under the administration of magnesium sulphate. The boric acid baths gave the best results in burns of the second degree and the ichthyol ointment in burns of the third degree.

CAVIARE.

IN spite of the esteem which caviare enjoys we have known it to be regarded by medical men as oily, indigestible, and unwholesome. We are inclined to dispute the accuracy of this view, having regard to the peculiar character of the constituents which the roe of the sturgeon contains. Numerous analyses have from time to time been made and the composition of caviare when averaged appears to be as follows:—Water, 50·92 per cent.; protein, 27·92 per cent.; fat, 13·59 per cent.; and mineral salts, 7·57 per cent. It differs sharply from the flesh of fish by containing a much larger quantity of fat. Moreover, this fat contains the peculiar oily phosphorus compound known as lecithin, which is a stimulant to metabolism affecting favourably the processes of nutrition. Caviare is, in fact, highly nutritive, and its digestibility has been determined, the time taken for its absorption being relatively short. If there is anything to be said unfavourably of caviare it is that its constituents err slightly on the side of "richness." The proteins of caviare contain a good deal of nuclein, and physiological experiments have shown that nuclein is a source of uric acid. The same is true, however, of sweetbread, kidney, *foie gras*, and these delicacies share with caviare the drawback of prohibition for persons of a gouty disposition. Like most foods with a peculiarly attractive and delicate flavour, caviare is expensive, and this fact holds any important consumption of it in check. It may be added, however, that caviare differs but a very little in composition from the much more familiar milt of the herring or the bloater roe. Bloater roe, like caviare, is rich in lecithin, though we are not prepared to assume that a measured course of bloater roe would have the same favourable effects in neurasthenia and in disturbances of nutrition generally as are obtained by administering the isolated fatty phosphorus compound.

THE RELATIONSHIP OF TUBERCULOSIS TO ACCIDENT AND INJURY.

IN another column we publish an address by Dr. W. C. Bosanquet on the relationship of tuberculosis to accident and injury. This is a subject which has claimed considerable attention during the past few years, mainly on account of its importance in connexion with the Workmen's Compensation Act. There is, unfortunately, a tendency on the part of workmen to try to attribute any illness to an accident, with the result that numerous cases are tried under arbitration which have no sound foundation in fact, and the time of the court is wasted, and the masters or the insurance companies are put to large needless expense. It is not denied that direct infection with tubercle bacilli may take place; numerous instances are on record. Further, many authorities maintain that tuberculosis of joints may follow injury, and Dr. Bosanquet quotes the French military surgeons who maintain that the majority of cases in their army in which amputation of the foot has to be carried out for tuberculous disease are attributable to old sprains. Instances of tuberculosis of the lungs following injury to the chest have been recorded, but in most of the cases it is not absolutely clear that the tuberculosis was

produced by the injury. It has also been suggested that in regard to pulmonary tuberculosis the accident may stir into activity a latent or quiescent lesion. To deny such a possibility would be difficult, but it is at least doubtful whether such a sequel could be proved. On the other hand, when active disease is present cases have been recorded in which an accident has apparently aggravated the disease. In a legal case, however, when damages are claimed on such a ground, the time that elapsed between the accident and the alleged aggravation would have an important bearing on the facts. Dr. Bosanquet remarks that if it were claimed that an injury and its resultant shock had so depressed a healthy person's resistance that he subsequently fell a victim to tuberculosis of the lungs considerable doubt would arise. We are acquainted with a case in which a widow of a deceased workman made a claim of this nature. The man sustained a Pott's fracture and died some nine months afterwards from pulmonary tuberculosis. For the woman it was suggested that the accident had so lowered the man's resisting power that he had become tuberculous. A medical assessor was sitting with the judge and the case was stopped without the defendants being called upon to reply. The occurrence of such legal cases by themselves cause the subject of "traumatic tuberculosis," as it is sometimes called, to be an important one, and many problems are involved which merit close attention and study.

THE CYTO-ARCHITECTONIC STRUCTURE OF THE CEREBRAL CORTEX [1]

WITHIN the last few years, owing largely to the researches of A. W. Campbell in this country, and of Brodmann and the Vogts in Germany, immense strides have been taken towards the perfecting of our knowledge of the structure of the cerebral cortex; and as this knowledge is sure to prove, indeed has already proved, to be of the first importance as a key to the pathology of certain mental and nervous states, it is well for the physician who is interested in the scientific side of his profession to have an intelligent idea of the progress that has already been made. It was known years ago, of course (since the researches of Bevan Lewis), that the cerebral cortex varied in thickness and in naked-eye and microscopical characters in different areas, but incompleteness of knowledge led invariably to confusion of thought until the subject was tackled afresh in its entirety, and with the aid of comparative anatomy, by the investigators whose names have been given above. Basing their work on the examination of transverse sections of the cortex from all its different parts, cut in series, they have definitely established the following first principle—viz, that the cerebral cortex is everywhere stratified, i.e., its cells are arranged in layers. In mammals the fundamental type of stratification is the six-layer type. By inversion, division, or diminution there may be derived from this type other varieties, to be referred to subsequently. The six layers, from without inwards, are described as (1) the zonal layer; (2) the external or outer granular layer; (3) the pyramidal layer; (4) the internal or inner granular layer; (5) the ganglionic layer; and (6) the multiform layer, according to the terms employed by Brodmann. Layers 1 and 6 are constant in man and the mammals generally, whereas layers 2 and 4 are very inconstant, and are frequently absent in man in certain areas of the cortex; layers 3 and 5 are also variable, but to a less extent than the preceding. Brodmann has also shown that this six-layer type may be present in the fœtus in parts of the cortex where at a later stage variation sets in, and that the rate of development of the six layers is not the same for all divisions of the cortex. The next point is that there are certain parts of the cortical surface where this six-layer type is not found, even in the embryo, constituting, roughly speaking, about one-tenth of the cerebral surface, nine-tenths being normally six-layered. Further, there are areas where during embryonic evolution the six-layered cortex becomes considerably modified, by augmentation or diminution of the number of layers. These areas take up about one-fourth of the cerebral superficies, and are of great importance, for they correspond to well-known physiological areas. Among them may be mentioned the visual area round the calcarine fissure in the occipital lobes, the motor area in front of the fissure of Rolando, certain parts of the frontal lobes, and the cortex of the island of Reil. In the calcarine area, for instance, the fourth layer is subdivided into three: in the motor area the fourth layer is awanting, while the giant pyramidal cells of Betz appear in the fifth layer, and so on. In this way it becomes readily understandable that the cerebral cortex can be mapped out into areas just like a geographical chart, each area corresponding to a particular type of cyto-architectonic arrangement. It is true, no doubt, that in the present state of our knowledge many of these areas are not of definite clinical interest, but some certainly are. Brodmann has distinguished 48 different regions, and it is a remarkably interesting fact that two of them are without homologue in the whole mammalian series—viz., the area corresponding to Broca's convolution and the area corresponding to the posterior end of the upper temporal convolution. These areas are a speciality, so to speak, of man, and naturally they may be taken to be of significance in connexion with the development of the faculty of speech. There is reason to suppose that not a few mental diseases have for their anatomical basis some disturbance, as yet not fully recognised, of the structure of the cortical stratification, and this is a pathological field on which investigation is only commencing. The belief, however, that in the prosecution of research along the lines sketched above, and based on the splendid work of Brodmann and others, results of far-reaching importance will sooner or later be attained, seems amply justified by the progress that has already been accomplished, of which the recent Goulstonian lectures of Dr. J. Shaw Bolton afford convincing evidence.[2]

[1] See, in particular, a recent paper by Dr. Ladame, of Geneva, in the *Revue Neurologique*, Nov. 30th, 1911.

THE MEDICAL LIBRARY ASSOCIATION OF AMERICA.

THE first two numbers of the *Bulletin of the Medical Library Association*, of America, edited by Dr. John Ruhräh and Miss M. C. Noyes, have been forwarded to us. This well-printed journal is worthy the consideration of the profession here, and of all those who take an interest in medical libraries, medical education, or the bibliography of medicine, surgery, and the kindred sciences. In a prefatory note the purposes of the *Bulletin* are briefly outlined as being primarily a means of communication between members of the association and a medium for the publication of lists of "wants" and of books and journals for exchange. In addition to this, at least one article on the work of medical libraries will be published in each issue of the journal. The first of these is from the accomplished pen of Dr. John H. Musser, president of the association. It is the record of his address, delivered at Atlantic city in May last. Dr. Musser reviews the work of the association and its finance, now flourishing under the management of an experienced treasurer. He further makes the satisfactory announcement that he was enabled, during the past twelvemonth, to hand to the association a card catalogue of the important books published in

[2] THE LANCET, vol. i., 1910, pp. 905, 980, 1047, 1077.

England, France, Germany, and Italy in the course of the past three years. "Members of the association," he continues, "can secure from the exchange titles of books on particular subjects in their respective languages." This is as it should be; a library association may be said to be justifying its existence when it can do this adequately. In the United States and Canada we gather that medical libraries are much of a size—that is to say, there are many medical collections scattered throughout those great countries which have all of them much the same equipment and resources. Here in Great Britain and Ireland matters are somewhat different. We have a few—a very few—preponderant libraries, and a number of small ones, and when the large libraries are asked to coöperate with the little ones cases arise in which, in vulgar parlance and so far as the large libraries are concerned, it is "all give and no take." The list of headings ("classification used at the Library of the College of Physicians, Philadelphia"), published in *Bulletin* No. 2, is valuable for purposes of reference. It is an ideal classification. That we on this side of the Atlantic use a somewhat simpler system is chiefly owing to the fact that we began the work of classifying many years ago—in the dark ages of library existence. Our system works well here, but the American system is none the less admirable.

THE PRESENT ASPECT OF SOME CANCER PROBLEMS.

THE opening lecture of the year at the Medical Graduates' College and Polyclinic was delivered by Dr. E. F. Bashford on Jan. 8th on the Present Aspects of Some Cancer Problems. In concluding, Dr. Bashford emphasised that up to the present all the methods which had been found efficacious in preventing the grafting and growth of carcinoma or sarcoma in normal animals had as yet no bearing whatsoever upon the treatment of the disease, but only upon the biology of cancer. All these methods, when applied to transplanted tumours already established, if they had any effect at all, produced inconstant results which could not be reproduced again at will. When applied to spontaneous cancer in mice they were as yet devoid of all therapeutic value, as the pictures exhibited showed. Similar remarks could also be applied to other suggested methods of treatment—e.g., by radium, which was found to cure certain transplanted tumours by Apolant in 1904, and by Bashford, Murray, and Cramer in 1905. This effect was obtained only for certain tumour strains and was not constantly obtained even in the same strain at different times. Toxic doses of adrenalin had been shown in 1905 by the latter authors to assist in the disappearance of transplanted tumours, and Reichert in 1909 had confirmed this observation; adrenalin was, however, as inconstant and unreliable as radium. Sera of different kinds had been found completely inactive. The possibilities of active immunisation lay entirely in the future, and mainly for this reason, that when healing occurred spontaneously, either in a transplanted or in a spontaneous tumour, whether a change in the animal was of moment or not, it had been satisfactorily demonstrated that local conditions obtaining in the tumour cells themselves played the determining rôle. Their elucidation was necessary if spontaneous healing was to be imitated experimentally. The extreme rarity of complete healing of spontaneous tumours required to be borne in mind in estimating both the difficulties of the investigation and its therapeutical possibilities. On a basis of the careful following of the clinical course of almost 1000 spontaneous tumours in mice, Dr. Bashford estimated attempts at healing, either partial or complete, at not so high as 1 per cent. In conclusion, he referred to some highly suggestive experiments carried out by A. von Wassermann in Berlin.

Dr. Bashford said: I returned from Berlin yesterday where I have been for some time on matters unconnected with cancer, but being there I considered it my duty to obtain personal experience of Wassermann's work, and he generously placed all his knowledge at my disposal. By following a line of thought inseparably associated with the name of my respected teacher—Ehrlich—Wassermann conceived the possibility of making a direct attack upon the cancer cell by approaching it through the blood stream. His reasoning was that since the cancer cells were growing rapidly their oxygen requirement would be very great—i.e., in Ehrlich's sense there would be a differential between the avidity for oxygen of the tumour cells and the rest of the cells of the body. The tumours would be very susceptible to anything which interfered with their supply of oxygen. Without going into details the problem resolved itself into how to convey selenium not only into the neighbourhood of the cell, but, if possible, also into the cell substance. After testing some hundreds of preparations it was found possible to do this by means of eosin. The idea of handing on such an element as selenium by means of such a dye as eosin could hardly have occurred to one not trained in the Ehrlich school as Wassermann has been, and its fruitfulness was at once seen. The pink solution of the eosin-selenium combination when injected in the venous system of a tumour-mouse at once colours the skin pink, but in a few hours the colour disappears from the surface of the body, and if the mouse is killed and examined it is found that the tumour alone is deeply stained. After repeated injection, if the mouse survive the tumour disappears in accordance with an orderly sequence of events. By this method Wassermann has achieved more than can be claimed for any of the other methods I have described to you, since the result is both constant—i.e., under given conditions can always be obtained—and equally efficacious when tested on spontaneous tumours. But the method is only in its infancy, and we know how radium and other agents have in the past had the aggravating property of giving the best results at the beginning. Still, it would be unfair of me to offer any criticism at this stage, for Wassermann has himself published ample warning. He states that the substance is a dangerous poison. In an experiment Wassermann and Keysser performed for my instruction it killed four out of six mice, but of the two that survived both were cured, and this is the inevitable result if the mice can withstand the treatment. The substance is difficult to prepare and its exact constitution is not yet known, but as in the case of all purely chemical problems these are difficulties laboratory skill and patience will speedily overcome. Wassermann does not claim to have found a cure for cancer, but merely to have demonstrated that what was previously deemed impossible has been demonstrated as a fact—viz., that a chemical substance can be prepared which when injected into the blood stream has an elective affinity for tumour cells injuring and killing them while sparing the rest of the body. To all who can appreciate the significance of this step forwards it will appear that the possibilities of following up this clue open up one of the most hopeful prospects as regards our ultimately being able to treat the disease in man. Great patience will, however, be necessary, new knowledge of the cancer cell and new applications of biological methods may be required to heighten the susceptibility of the tumour cells to interference with the oxygen supply. What is efficacious in a mouse may not work in a rat, rabbit, dog, or cow, and in any case no application to man will be possible until a less toxic preparation can be produced, and a more extensive application has been made to spontaneous tumours of varied nature. Nevertheless, I feel bound to admit the importance attaching to Wassermann's experiments.

THE annual dinner and smoking concert of the South Wales Mounted Brigade Field Ambulance, R.A.M.C. (T.), took place recently at the Imperial Café, Hereford. Lieutenant-Colonel J. R. I. Raywood, the officer commanding, presided, and was supported by Captain Griffiths, R.A.M.C., on a thoroughly successful occasion. The work done by the unit in 1911 included an Easter camp at Ledbury, annual brigade training at Builth, and camp at Carnarvon. Three officers and 18 non-commissioned officers and men attended special courses at the Royal Army Medical Corps School of Instruction, Cardiff, and one officer and three men the Army Service Corps Depôt, Manchester. The strength of the unit is 115 non-commissioned officers and men and four officers. The training this year is at Porthcawl, South Wales.

THE PRESENT POSITION OF ANTI-MALARIAL METHODS IN INDIA.

IT has been recently stated that malaria causes more sickness and mortality in India than any other disease. The late Sanitary Commissioner with the Government of India calculated that more than a million deaths from endemic malaria occur in ordinary years, and that in particular years when malaria epidemics arise this mortality may be well-nigh doubled. As malaria is not usually a very fatal disease this enormous number of deaths must represent a vast amount of non-fatal sickness, giving rise to a great deal of suffering and resulting in considerable economic loss to the State.

Efforts in the Past.

In the past strenuous efforts have not been wanting to prevent the ravages of this formidable malady in India, reliance having been placed hitherto mainly upon the use of quinine both as a curative and as a prophylactic agent. Under Government auspices the cultivation of the cinchona plant has been greatly extended, and this has led to a large reduction in the price of quinine, which has thus now become obtainable even by the poorest classes in India. But it is well known how difficult it is to secure the regular and systematic taking of quinine by natives, and even by Europeans sometimes, in malarious districts. It is true that better results are found in prisons and other institutions, or among bodies of men under discipline, but these form only a fraction of the great number that need protection against this disease. It may, therefore, be said generally that notwithstanding the efforts which have been made in the past, with the help of quinine, the ravages of malaria in India have not been materially reduced or greatly alleviated.

Anti-mosquito Measures.

It is now about 14 years since Sir Ronald Ross, then an officer of the Indian Medical Service, working at Secunderabad, discovered the mode in which the protozoal parasite of malaria is transmitted from man to man through the agency of a species of water-breeding mosquitoes, the Anophelinæ; and this discovery at once suggested new methods of fighting the disease by measures to extirpate the incriminated mosquitoes and destroy their breeding-places. Major works for draining swampy land and marshes and minor operations for filling up pools and hollows or coating the surface of the standing water with crude oil were strongly advocated. But these proposals did not apparently find much favour at the time in official circles, objections being raised mainly on the score of the great expense which the measures would entail, and also on the ground of their impracticability and unsuitability to the special circumstances of a country like India.

In 1901 an experimental trial of the new methods was initiated at Mian Mir, but in 1909 a Government Commission, which had been appointed to investigate the results, gave an unfavourable report upon them. This test, however, in the opinion of Sir Ronald Ross, was hardly a fair one, and in public he has characterised it as having been "ill-judged and ill-conducted." It is beyond doubt that the Mian Mir experiment was the means of hindering, for a time at least, the adoption of mosquito destruction as an important antimalarial measure in India.

Imperial Malaria Conference.

The new methods have already been successfully tried in some other countries, and the facts associated with these instances were brought to the notice of the Indian Government, which in 1909 summoned an Imperial Malaria Conference to meet at Simla, where after due discussion a series of recommendations was passed. These included the need for establishing a permanent organisation to direct a campaign against malaria in India and to undertake scientific investigations; the advisability of carrying out measures for the extirpation of mosquitoes; the continuation of efforts to secure a wide distribution of quinine in the affected districts; and lastly, the need for educating the native population in the main facts about malaria. Since this conference was held a change has seemingly taken place in the official attitude towards the modern methods of fighting malaria. This is noticeable in the address which the present Director-General of the Indian Medical Service, Sir C. P. Lukis, K.C.S.I., gave at Bombay in November last before a malaria conference and in other recent official statements. A central scientific committee for the study of malaria in India, with provincial committees and a general committee, have now been set up to organise the anti-malarial campaign. In order to provide the necessary special training in modern methods of malarial research a central malarial bureau has been established at Kasauli, with a museum, laboratory, and reference library, and with a new journal called *Paludism* as its organ, to spread the knowledge acquired by the bureau and to publish reports and other useful information. At Amritsar also an institute has been founded and a laboratory opened for special malarial research and for purposes of instruction. Already 48 officers and subordinates have gone through special courses of training, and at the present time most, if not all, of the Indian provinces are provided with the services of expert officers, who are aided by an adequate staff devoting their whole time to anti-malarial work.

Measures now being taken in Various Provinces.

Sir C. P. Lukis furnished a statement to the Imperial Legislative Council at Simla last September, in which he summarised the measures in progress against malaria in the provinces. In Madras Presidency, for example, in addition to the appointment of a special staff under expert direction, the following practical measures are being carried out—viz., the introduction of effective drainage in different places, the filling up of useless ponds and pits, the prohibition of "wet cultivation" in the proximity of dwellings, the destruction of mosquito larvæ by petrolage, along with the free distribution of quinine. Almost identical measures are being taken in the Presidency of Bengal, where, in addition, an important proposal from the local government is under consideration for a special engineering establishment to deal with drainage schemes. As a further indication of the change which has occurred in the official attitude towards mosquito reduction we may mention the case of the city of Bombay, where malaria has been of late years increasing in amount, and where in consequence Dr. C. A. Bentley, a well-known expert, has been investigating the causes of this increase. In his report he pointed out that the breeding-places of the anophelines must be destroyed, and it is gratifying to learn that the provincial government has intimated to the municipality that if vigorous measures are taken by them on the lines suggested by Dr. Bentley they will be assisted with a grant of 1 lakh of rupees from provincial revenues.

The Punjab is a special sufferer from epidemics of malaria, and Major S. R. Christophers, I.M.S., a member of the Central Committee for the Study of Malaria in India, who has made inquiry into their cause, has pointed to the flooding of certain areas, and especially of low-lying land near the banks of rivers, as an important factor in the production of these epidemics. Works for the prevention and control of these floods are recommended, and are at present under the consideration of the Government. Lastly, we may draw attention to an important statement made by Sir C. P. Lukis to the effect that in the fiscal year of 1910–11 a special non-recurring grant of no less than 57 lakhs of rupees was made from Imperial revenues for expenditure, chiefly on drainage schemes likely to prove of benefit to towns affected by malaria. The above gives a summary of much that is already known to our readers, while in THE LANCET of Oct. 17th, 1911, we drew attention to the Indian Research Fund, one of the objects of which is to provide means for carrying out various methods by which the people of India may be educated in subjects of elementary hygiene and domestic sanitation, and in the knowledge of how they may best protect themselves against malaria and other diseases.

New Era Inaugurated.

From what we have said it is apparent that at no previous time has so much been done to check the disease and to utilise the most modern methods for reducing the widespread ravages of malaria in India. A new era has thus been inaugurated, the prophylaxis by means of quinine being now reinforced by much-needed major and minor works instituted with a view of reducing mosquitoes and destroying their breeding places. These efforts, we believe, must lead to a marked diminution of the disease, and as a result should lead to a decrease in the human suffering and economic loss which have for so long afflicted our Indian Empire.

MEDICINE AND THE LAW.

Death from a Wasp's Sting under the Workmen's Compensation Act.

A CLAIM for compensation by a widow named Potter, in which Judge Mulligan, K.C., gave judgment recently in the Downham county court, gave a fresh illustration of the difficulty of determining what constitutes an accident arising "out of and in the course of" a workman's employment. The deceased husband of the applicant was engaged as a waiter at an entertainment following a wedding in a country district, and on the day following the wedding a dinner was being prepared for the villagers, the deceased man Potter being in the service of the caterer, Mr. C. W. Smith, who supplied the refreshments. The remains of champagne in the emptied bottles, and of food provided for the first day, had attracted a number of wasps, and on the second day when Potter with his companions had stopped working in order to eat their luncheons in the tent, he suddenly exclaimed, "I am done," and removed a dead wasp from his tongue. He had been stung and he died an hour later, a post-mortem examination, of which evidence was given at the inquest, showing that he had suffered from valvular disease of the heart. The verdict of the coroner's jury, which was put in as evidence on the application of the widow for compensation, ascribed death to "Heart failure caused by shock consequent upon the sting of a wasp on the tongue—Accidental death." The county court judge held that death was due to the accident of the sting and that "the fact that the man's condition predisposed him to succumb to such an accident was immaterial, and the medical alibi—valvular disease of the heart—in this case could not prevail." He was also satisfied that the accident occurred in the course of the employment of the deceased. This left the question whether it arose out of that employment, and as to that he had to ask himself whether the accident resulted from a risk reasonably incidental to the employment. He found as to this as a matter of fact that the deceased, by reason of the work that he had to perform in the tent, was exposed to an extraordinary and peculiar danger of being stung by wasps, and that his death was the result of a risk reasonably and peculiarly incidental to his employment. He pointed out that the question was one to be decided upon the facts of the particular case before him, and quoted from the Lord Chancellor's judgment in the case of Kitchenham (1911, Appeal Cases, 417) to the effect that the words "out of and in the course of the workman's employment" admit of inexhaustible varieties of application according to the nature of the employment and the character of the facts proved. The Lord Chancellor said with regard to this "the facts in different cases are infinitely different, and if we (the House of Lords) were upon each argument to discuss them and to differentiate one from another, judgments of courts of law would be interminable and would lead rather to confusion than to enlightenment." The case of Potter *v.* Smith would appear to be one likely to lead to an appeal, but if the man was provided with food by his employers as one of the conditions of his service, and it was food which, owing to circumstances, contained wasps, or if he was expected to eat his luncheon in a place infested by wasps, it would seem not unreasonable to say that the accident of being stung arose out of the employment. The expression, however, used by Judge Mulligan and quoted above, "a medical alibi," as applied to the proof of the existence of valvular disease of the heart is not easy to understand. An alibi that fails is usually an incident in a trial discreditable to the witnesses who appear in support of it. There certainly, however, can be nothing discreditable in giving evidence of the presence of a disease without which death would not have taken place, or in an advocate, as distinct from the medical witnesses, laying stress upon it on behalf of his client. Not to prove its existence, either at the inquest following the death or in an inquiry such as that held in the county court, would be to suppress evidence of an essential fact connecting the death with the accident of the sting.

The Death of Mr. Terence Barclay.

It has been stated in the newspapers that an inquest has not been considered necessary in the case of Mr. Terence Barclay, who was mauled by a lion cub kept as a pet, dying from subsequent blood poisoning. The occurrence was of a very unusual and extremely tragic nature, and the relatives of the deceased are entitled to warm sympathy in their loss. To them, no doubt, the avoidance of an inquest was a welcome relief from attendance at an inquiry which would have increased their pain. At the same time, we are puzzled as to why an inquest should have been dispensed with in consequence, according to the information before us, of the acceptance of a certificate of the cause of death. No doubt the medical man or medical men who attended the deceased after he received his wounds were able to state accurately in a certificate the cause of his death, and we are not aware that there could be any objection to this being done. It, however, could not by itself free the coroner from the obligation to hold an inquest where there is reasonable cause to suspect that a violent or an unnatural death has occurred, and it can hardly be suggested that the death of Mr. Barclay, the main facts attending which have been described in the public press too fully to need recapitulation, was in the ordinary acceptance of the term a natural one. On the other hand, so far as the reported facts are concerned, the case was one which on public grounds might well have been inquired into in some detail. The keeping of dangerous wild animals in the grounds of a country gentleman's house cannot be a safe proceeding unless extreme care is exercised to ensure that the confinement imposed is such as to preclude the possibility of escape, and to prevent as far as possible danger to their immediate owners and to others. An inquest is not held with a view only to the punishment of those, if any, who may be criminally responsible for a death, but in order that by a full inquiry into unnatural deaths the public may be protected or reassured according to the circumstances of the individual case. The death to which we have referred will, however, no doubt, serve as a warning to those who wish to rear young lions, or other naturally fierce animals, of the danger of so doing. The gradual growth of such beasts may disguise the development of their adult tendencies and of their mature physical strength, but those tendencies will probably supervene, and combined with a strength of which neither they nor their masters may be aware, will one day render them dangerous possessions.

VITAL STATISTICS.

HEALTH OF ENGLISH TOWNS.

IN 77 of the largest English towns, having an estimated population of 16,157,797 persons in the middle of the year 1911, 6673 births and 4881 deaths were registered during the week ending Dec. 30th, 1911. The annual rate of mortality in these towns, which had been 15·2, 16·4, and 15·9 per 1000 in the three preceding weeks, declined to 15·7 in the week under notice. During the 13 weeks of the fourth quarter of last year the mean annual rate of mortality in these towns averaged 14·7 per 1000, and was 0·4 per 1000 in excess of that recorded in London during the same period. The annual death-rates in the 77 towns in the week under notice ranged from 4·9 in Hornsey, 7·7 in Hastings and in Halifax, 9·1 in Ipswich, and 10·9 in Rhondda and in Merthyr Tydfil, to 21·6 in Bootle, 22·0 in Burnley, 22·2 in Bury, and 23·1 in St. Helens.

The 4881 deaths from all causes in the 77 towns were 30 fewer than the number in the previous week, and included 290 which were referred to the principal epidemic diseases, against 305 and 291 in the two preceding weeks. Of these 290 deaths, 76 resulted from whooping-cough, 66 from measles, 54 from infantile diarrhœa, 53 from diphtheria, 21 from enteric fever, and 20 from scarlet fever, but not one from small-pox. The mean annual death-rate from these diseases last week was equal to 0·9 per 1000, against 1·0 and 0·9 in the two preceding weeks.

The deaths attributed to whooping-cough, which had steadily increased from 16 to 52 in the eight preceding weeks, further rose to 76 in the week under notice, and caused the highest annual death-rates of 1·1 in Birmingham, 1·6 in St. Helens, 1·7 in Derby, 1·9 in Great Yarmouth, and 2·8 in Walsall. The deaths referred to measles, which had been 52, 71, and 70 in the three preceding weeks, declined to 66 in the week mentioned; the highest death-rates from

this disease were 1·3 in Norwich and in Stoke-on-Trent, 2·0 in Nottingham, and 3·9 in Burnley. The 54 fatal cases of infantile diarrhœa were 1 fewer than the number in the preceding week, and included 18 in London and its suburban districts, 5 in Birmingham, 4 in Liverpool, and 4 in Manchester. The deaths attributed to diphtheria, which had risen from 57 to 67 in the four preceding weeks, declined to 53 during the week, and of this number 17 were registered in London and its suburban districts, 4 in Leeds, 3 in Wallasey, and 3 in Manchester. The deaths referred to enteric fever numbered 21, being 1 less than the average in the seven preceding weeks; 4 deaths were recorded in Leicester, 3 in Sheffield, 2 in London, and 2 in Hull. The fatal cases of scarlet fever, which had been 27 and 25 in the two preceding weeks, further fell last week to 20, and included 3 in London, and 2 each in Norwich, Aston Manor, Coventry, Liverpool, and Bradford.

The number of scarlet fever patients under treatment in the Metropolitan Asylums and in the London Fever Hospital, which had steadily decreased from 2213 to 1912 during the six preceding weeks, were equal to 1914 on Dec. 30th; 162 new cases of this disease were admitted to these institutions during the week, against 241, 224, and 182 in the three preceding weeks. These hospitals also contained on the date mentioned 1308 cases of diphtheria, 233 of whooping-cough, 105 of measles, and 77 of enteric fever, but not one case of small-pox. The 1325 deaths from all causes in London were 38 fewer than the number in the preceding week, and included 332, which were referred to diseases of the respiratory system, against numbers steadily increasing from 170 to 390 in the eight preceding weeks.

The deaths attributed to different forms of violence in the 77 towns, which had declined from 201 to 185 in the three preceding weeks, further fell to 170 in the week under notice, and 461 inquest cases were registered. The causes of 60, or 1·2 per cent., of the deaths registered in the 77 towns last week were not certified either by a registered medical practitioner or by a coroner after inquest. All the causes of death were duly certified in Manchester, Leeds, Bristol, West Ham, Bradford, Newcastle-on-Tyne, Nottingham, and in 48 other smaller towns. The 60 uncertified causes of death last week included 9 in Birmingham, 8 in Liverpool, 6 in Gateshead, 4 in Preston, and 3 each in London, King's Norton, St. Helens, and Rochdale.

From the commencement of the current year the Registrar-General's weekly returns will relate to the 94 largest towns of England and Wales which at the recent Census contained populations exceeding 50,000 persons. The aggregate population of these towns in the middle of the present year is estimated to be 17,559,219 persons. During the week ending Jan. 6th 8657 births and 5152 deaths were registered in these towns. The deaths were equal to an annual rate of mortality of 15·3 per 1000, against 16·4, 15·9, and 15·7 in the former 77 towns during the three preceding weeks. The annual death-rates in the several towns ranged from 4·9 in Eastbourne, 5·2 in Hastings, 8·0 in Wakefield, 8·3 in Wimbledon, and 8·8 in Ilford, in Oxford, in Devonport, and in Middlesbrough to 19·5 in York, 19·7 in Enfield, 20·0 in Stoke-on-Trent, 20·7 in St. Helens, 21·3 in Preston, and 23·3 in Dudley.

The 5152 deaths from all causes in the 94 towns last week included 313 which were referred to the principal epidemic diseases, and of these 83 resulted from measles, 78 from whooping-cough, 57 from infantile diarrhœa, 49 from diphtheria, 24 from enteric fever, and 22 from scarlet fever, but not one from small-pox. The mean annual death-rate from these diseases last week did not exceed 0·9 per 1000 of the estimated population, and was equal to the rate in the 77 towns during the two preceding weeks. The highest annual death-rates from measles were 1·3 in Swansea, 1·4 in Warrington, 1·5 in West Bromwich, 1·8 in Salford, and 3·0 in Norwich; from whooping-cough, 1·2 in Newport (Mon.), 1·8 in Great Yarmouth, 1·9 in Dewsbury, 2·1 in St. Helens, and 3·9 in Walsall; and from infantile diarrhœa, 1·1 in Stoke-on-Trent and 1·2 in Hornsey. The 49 deaths attributed to diphtheria included 12 in London and its 14 suburban districts, 5 in Leeds, and 3 in Bristol.

The number of scarlet fever patients under treatment in the Metropolitan Asylums and in the London Fever Hospital, which had steadily decreased from 2213 to 1914 in the seven preceding weeks, had further declined to 1845 on Saturday last; 193 new cases of this disease were admitted to these institutions during the week, against 224, 182, and 162 in the three preceding weeks. These hospitals also contained on Saturday last 1279 cases of diphtheria, 255 of whooping-cough, 116 of measles, and 65 cases of enteric fever, but not one of small-pox. The 1347 deaths from all causes registered in London during the week under notice were 24 in excess of the number in the preceding week, and were equal to an annual death-rate of 15·5 per 1000. During the 13 weeks of the fourth quarter of last year the average annual death-rate in London did not exceed 14·3 per 1000, and was 0·4 per 1000 below that recorded during the same period in the 77 large English towns. Of the 1347 deaths in London last week, 21 were attributed to measles, 17 to infantile diarrhœa, 14 to whooping-cough, 6 to diphtheria, 5 to enteric fever, and 3 to scarlet fever. The deaths referred to diseases of the respiratory system, which had been 390 and 332 in the two preceding weeks, rose again to 382 last week, and were 93 in excess of the number in the corresponding week of last year.

Of the 5152 deaths in the 94 large towns last week 194 were attributed to different forms of violence, and 455 were the subject of coroners' inquests. The causes of 45, or 0·9 per cent., of the deaths registered last week were not certified either by a registered medical practitioner or by a coroner after inquest. All the causes of death were duly certified in Sheffield, Leeds, Bristol, West Ham, Bradford, Hull, Newcastle-on-Tyne, Nottingham, and in 69 other smaller towns. The 45 uncertified causes of death last week included 10 in Birmingham, 10 in Liverpool, 4 in Gateshead, and 3 in Darlington.

HEALTH OF SCOTCH TOWNS.

In Glasgow 399 births and 274 deaths were registered during the week ending Dec. 30th, 1911. The deaths were 1 in excess of the number recorded in the previous week, and were equal to an annual rate of 18·2 per 1000, against 18·4 and 18·2 in the two preceding weeks. During the 13 weeks of the fourth quarter of 1911 the annual death-rate in Glasgow averaged 17·9 per 1000, and was 3·6 per 1000 above the rate recorded in London during the same period.

The 274 deaths from all causes during the week mentioned included 36 which were referred to the principal epidemic diseases, against 31 and 38 in the two preceding weeks. Of these 36 deaths, 17 resulted from measles, 5 from diphtheria, 5 from diarrhœal diseases, 4 from whooping-cough, 3 from scarlet fever, and 2 from enteric fever, but not one from small-pox; these 36 deaths were equal to an annual death-rate of 2·4 per 1000. The deaths from measles, which had increased from 7 to 25 in the three preceding weeks, declined to 17 in the week under notice; the 5 fatal cases of diphtheria were 4 in excess of the number in the previous week. The deaths referred to diseases of the respiratory system, which had declined from 62 to 44 in the three previous weeks, rose to 54 in the week under notice. Thirteen deaths were attributed to different forms of violence, and 83 were recorded in public institutions. The causes of 10, or 3·6 per cent., of the deaths were not specified or not certified.

In Edinburgh 105 births and 95 deaths were registered in the week under notice. The deaths were 13 fewer than the number in the previous week, and were equal to an annual rate of 15·5 per 1000, against 15·1 and 17·6 in the two preceding weeks. The 95 deaths from all causes included 6 which were referred to the principal epidemic diseases, of which 4 resulted from diphtheria and 2 from measles; these 6 deaths were equal to an annual rate of 1·0 per 1000. The deaths referred to diseases of the respiratory system, which had averaged 18 in the four preceding weeks, declined to 12 in the week under notice. Three deaths were attributed to violence, and 44 were recorded in public institutions. The causes of 2, or 2·1 per cent., of the deaths were not certified.

The weekly returns issued by the Registrar-General of Scotland will, from the commencement of the current year, relate to the 18 largest Scotch towns, which at the last Census contained populations exceeding 30,000 persons. The aggregate population of these towns in the middle of the present year is estimated to be 2,182,400 persons. During the week ending Jan. 6th, 1037 births and 705 deaths were registered in these 18 towns; the deaths were equal to an annual rate of 16·9 per 1000, or 1·6 per 1000 above that recorded in the 94 English towns.

In the eight towns to which the Scotch return formerly related, the death-rate last week was equal to 17·4 per 1000, against 18·6 and 17·3 in the two preceding weeks. The annual death-rates in the several towns ranged from 3·4 in Partick, 11·6 in Kirkcaldy, and 13·2 in Govan, to 22·5 in Hamilton, 23·3 in Clydebank, and 24·7 in Greenock. The 705 deaths from all causes in the 18 towns included 83 which were referred to the principal epidemic diseases, and included 34 from measles, 13 from diphtheria, 13 from whooping-cough, 11 from scarlet fever, 8 from infantile diarrhœa, 2 from enteric fever, and 2 from typhus, but not one from small-pox. These 83 deaths were equal to an annual rate of 1·9 per 1000, or 1·0 per 1000 above that recorded in the 94 English towns from the same diseases. Of the 34 deaths from measles, 13 were registered in Glasgow and 9 in Aberdeen; 3 deaths from scarlet fever were recorded in Glasgow, 3 in Aberdeen, and 3 in Greenock; the 2 fatal cases of typhus occurred at Motherwell.

The deaths referred to diseases of the respiratory system in the 18 towns numbered 134, and 22 deaths were attributed to different forms of violence. The weekly return of the Registrar-General for Scotland no longer affords information as to the numbers of uncertified causes of death, or of deaths occurring in public institutions.

HEALTH OF IRISH TOWNS.

In the 22 town districts of Ireland, having an estimated population of 1,149,495 persons in the middle of the year 1911, 560 births and 396 deaths were registered during the week ending Dec. 30th, 1911. The annual rate of mortality in these towns, which had been 20·9 and 18·2 per 1000 in the two preceding weeks, further declined to 18·0 in the week under notice. During the 13 weeks of the fourth quarter of last year the mean annual rate of mortality in these towns averaged 18·4 per 1000; while the death-rate in the 77 large English towns during the same period did not exceed 14·7 per 1000. The annual death-rates in the week under notice in the several Irish towns were equal to 19·9 in Dublin (against 15·3 in London), 16·9 in Belfast, 21·1 in Cork, 14·1 in Londonderry, 20·4 in Limerick, and 7·6 in Waterford, while in the 16 smallest of these Irish towns the death-rate did not exceed 16·6 per 1000.

The 396 deaths from all causes in the 22 Irish towns were 5 fewer than the number in the previous week, and included 34 which were referred to the principal epidemic diseases, against 35 and 39 in the two preceding weeks; of these 34 deaths, 10 resulted from whooping-cough, 7 from diarrhœal diseases, 6 from scarlet fever, 5 from diphtheria, 4 from measles, and 2 from enteric fever, but not one from small-pox. These 34 deaths from the principal epidemic diseases were equal to an annual death-rate of 1·5 per 1000, and was 0·6 per 1000 above the mean rate from the same diseases in the 77 large English towns. The deaths attributed to whooping-cough, which had increased from 6 to 16 in the three preceding weeks, declined to 10 in the week under notice, and comprised 4 in Dublin, 3 in Belfast, and 3 in Lurgan. The deaths referred to diarrhœal diseases, which had been 11 and 4 in the two previous weeks, rose to 7 during the week, all of which were of infants under two years of age; 3 deaths were recorded in Dublin and 3 in Belfast. The fatal cases of scarlet fever which had been 3 and 4 in the two preceding weeks, rose to 6 in the week under notice, of which 5 were registered in Belfast and 1 in Dublin. The 5 deaths referred to diphtheria were 4 less than in the number in the previous week, and comprised 3 in Dublin and 2 in Belfast. Three of the 4 fatal cases of measles were recorded in Dublin, while the 2 deaths from enteric fever were registered in Dublin and Newry respectively.

The deaths referred to diseases of the respiratory system, which had been 105 and 83 in the two preceding weeks, rose to 85 in the week under notice. Of the 396 deaths from all causes in the 22 Irish towns 120, or 30 per cent., were recorded in public institutions, and 10 were attributed to different forms of violence. The causes of 22, or 5·6 per cent., of the total deaths during the week under notice were not certified either by a registered medical practitioner or by a coroner after inquest, while in the 77 English towns the proportion did not exceed 1·2 per cent.

In the 22 town districts of Ireland, having an estimated population of 1,157,014 persons in the middle of this year, 598 births and 413 deaths were registered during the week ending Jan. 6th. The annual rate of mortality in these towns, which had declined from 20·9 to 18·0 in the three preceding weeks, rose to 18·6 per 1000 in the week under notice. During the 13 weeks of the fourth quarter of last year the mean annual rate of mortality in these Irish towns averaged 18·4 per 1000, and was 3·7 per 1000 above the mean rate recorded in the 77 large English towns. The annual death-rates last week in the several Irish towns were equal to 23·3 in Dublin (against 15·5 in London), 17·2 in Belfast, 17·7 in Cork, 19·1 in Londonderry, 9·5 in Limerick, and 17·1 in Waterford, while in the 16 smallest of these Irish towns the death-rate did not exceed 13·3 per 1000.

The 413 deaths from all causes in the 22 Irish towns were 18 in excess of the number in the previous week, and included 29 which were referred to the principal epidemic diseases, against 39 and 34 in the two preceding weeks; of these 29 deaths 7 resulted from diphtheria, 6 from measles, 6 from diarrhœal diseases 4 from scarlet fever, 4 from whooping-cough, and 2 from enteric fever, but not one from small-pox. These 29 deaths from the principal epidemic diseases were equal to an annual rate of 1·3 per 1000; the death-rate from these diseases did not exceed 0·9 in the 94 English towns, while in the 18 Scotch towns it was equal to 1·9 per 1000. The 7 deaths attributed to diphtheria were equal to the average in the two preceding weeks, and comprised 4 in Dublin and 3 in Belfast. The deaths referred to measles, which had been 7, 6, and 4 in the three preceding weeks, rose last week to 6, all of which occurred in Dublin. Five of the 6 deaths from diarrhœal diseases, all of which related to infants under two years of age, were recorded in Dublin. The 4 fatal cases of scarlet fever, of which 3 were registered in Dublin, were equal to the average in the three preceding weeks. The deaths attributed to whooping-cough, which had been 16 and 10 in the two preceding weeks, declined to 4 last week, and included 2 in Belfast. The 2 fatal cases of enteric fever were recorded in Dublin.

The deaths referred to diseases of the respiratory system, which had been 83 and 85 in the two preceding weeks, further rose last week to 99. Of the 413 deaths from all causes in the 22 Irish towns 143, or 35 per cent., were recorded in public institutions, and 4 were attributed to different forms of violence. The causes of 15, or 3·6 per cent., of the total deaths during the week under notice were not certified either by a registered medical practitioner or by a coroner after inquest; in the 94 English towns the proportion of uncertified causes of death last week did not exceed 0·9 per cent.

THE SERVICES.

ROYAL NAVY MEDICAL SERVICE.

THE following appointments have been notified:—Fleet-Surgeons: R. Hickson to the *Africa*; C. S. Woodwright to the *Minotaur*, additional, for sick quarters, Yokohama; J. E. Coad to the *Leviathan*, and for general staff duties; E. H. Hodnet de Courtmacsherry to the *Renown*; D. J. P. McNabb to the *Hercules*, and for general staff duties; R. Hill to R. M. Infirmary, Deal; and E. B. Pickthorn to the *Cressy*. Staff-Surgeons: J. Fullarton to the *Cressy*; H. W. M. Rees to the *Hawke*, for voyage out, and to the *Flora*; and K. H. Jones to the *Enchantress*. Surgeon R. F. MacMahon to the *Excellent*.

ARMY MEDICAL SERVICE.

Surgeon-General Sir Francis W. Trevor, K.C.S.I., C.B., K.H.S., is placed on retired pay (dated Jan. 1st, 1912).

ROYAL ARMY MEDICAL CORPS.

The undermentioned Captains to be Majors: Charles S. Smith, Arthur F. Carlyon, William C. Croly (dated Dec. 4th, 1911); Patrick H. Henderson, William M. H. Spiller, Archibald D. Jameson, Bernard B. Burke, Walter B. Fry, and Percy C. Douglass (dated Dec. 21st, 1911).

Lieutenant John Gilmour is seconded for service under the Foreign Office (dated Dec. 8th, 1911).

Surgeon-General A. T. Sloggett, C.B., C.M.G., principal medical officer of the Sixth (Poona) Division, has taken up duty as Principal Medical Officer, His Majesty's Forces in India, in succession to Surgeon-General Sir F. W. Trevor, K.C.S.I., C.B., retired from Jan. 1st. Lieutenant-Colonel

N. C. Ferguson, C.M.G., in charge of the Military Hospital at York, has been selected for the higher rate of pay under Article 317 of the Royal Warrant. Lieutenant-Colonel H. C. Thurston, C.M.G., at present serving at Aldershot, has been selected for appointment as Medical Officer to the Royal Military College, in succession to Lieutenant-Colonel C. C. Reilly, whose tenure of the appointment has expired. Lieutenant-Colonel F. J. Morgan, commanding the Station Hospital at Barrackpore, has been granted six and a half months' leave of absence home from India. Lieutenant-Colonel S. Westcott, lately in charge of the Military Hospital at Chakrata, United Provinces, has arrived home, tour-expired. Lieutenant-Colonel E. G. Browne has been selected for appointment to hold charge of the Military Hospital at Jullundur. Lieutenant-Colonel W. A. Morris, commanding the Station Hospital at Cawnpore. has been detailed as Senior Medical Officer in charge of the transport s.s. *Plassy*, leaving Bombay for Southampton on Jan. 11th. Lieutenant-Colonel R. L. R. Macleod has arrived home for duty from Aden on completion of his tour of foreign service.

Major H. B Fawcus, from Bloemfontein, has been selected to succeed Major C. F. Wanhill as Assistant Professor of Hygiene at the Royal Army Medical College. Major J. Hennessy, commanding the Station Hospital at Poonamallee, has been detailed for duty on board the transport s.s. *Dongola*, which left Bombay for Southampton on Dec. 28th. Major G. B. Riddick, at present serving at Maymyo, Burma, has been permitted by H.E. the Commander-in-chief in India to extend his tour of service by one year. Major R. C. Elliott has taken over charge of the Military Hospital at Jhansi. Major L. Way, from Cosham, has been appointed for duty with the Northern Army in India, and will be posted on arrival to the Seventh (Meerut) Division. Major L. P. More and Major W. A. Woodside have embarked for a tour of service in India. Major A. J. MacDougall, recently employed as Specialist Sanitary Officer at Ceylon, has been ordered to join the Irish Command, and on arrival will be posted to the Belfast District for duty.

Captain D. Ahern has been transferred from Alexandria to the Military Hospital at Cairo for duty. Captain H. T. Stack, from Londonderry, has taken up duty at Belfast. Captain J. E. Powell, from Rhayader Camp, has joined at Alderney. Captain H. H. J. Fawcett, from the Royal Victoria Hospital at Netley, has been posted to the Military Hospital at Maidstone. Captain E. M. Glanvill has been transferred from the Military Hospital at York to Leeds. Captain O. Ievers has arrived home from South Africa for duty on the Home Establishment. Captain A. F. Weston has embarked for a tour of service at Jamaica. Captain M. B. H. Ritchie has been granted six months' leave of absence home from India. Captain C. Scaife has been appointed Specialist in the Prevention of Disease, Bombay Brigade, and placed in charge of the Brigade Research Laboratory at Colaba. Captain D. T. McCarthy has been transferred from the Eighth (Lucknow) Division to Burma for a tour of service. Captain W. C. Nimmo, from Chakrata, has taken up duty at the Station Hospital, Meerut. Captain C. T. Edmunds, from Cherat, has been detailed for a course of instruction in radiography at the X Ray Institute, Debra Dun, United Provinces. Captain G. F. Dawson, from Meerut, has been appointed to the Station Hospital at Chakrata. Captain D. de C. O'Grady has been transferred from Barian to Peshawar for duty at the Military Hospital. Captain D. M. Corbett, from Dalhousie, has taken up duty at Multan.

Lieutenant R. C. Priest, on arrival in India for a tour of service, has been posted to the Eighth (Lucknow) Division, instead of the Fifth (Mhow) Division as previously directed. Lieutenant R. C. G. M. Kinkead, at present serving at the Military Hospital, Queenstown, has been placed under orders by the War Office for service in South Africa, and will embark about the end of January. Lieutenant R. C. Paris, from the Royal Victoria Hospital at Netley, has embarked for duty in India.

INDIAN MEDICAL SERVICE.

Lieutenant-Colonel G. F. W. Ewens has been appointed Superintendent of the Punjab Lunatic Asylum at Lahore, on return from leave of absence. Lieutenant-Colonel W. Westropp White has received an extension of his leave of absence home from India from the Right Honourable the Secretary of State. Lieutenant-Colonel R. B. Roe, principal medical officer of the Abbotabad and Sialkot Brigades, has been selected for appointment as Principal Medical Officer of the Karachi Brigade. Lieutenant-Colonel P. C. Strickland has arrived home on leave of absence from India.

Major R. P. Wilson, officiating civil surgeon at Cuttack, has been granted privilege leave, combined with furlough, for 15 months. Major H. E. Berry has been appointed Specialist in Ophthalmology to the Fifth (Mhow) Division. Major J. W. Cornwall has arrived home on leave of absence from Madras Presidency.

Captain B. Higham has been selected to officiate as Deputy Sanitary Commissioner of the Central Registration District, Bombay. Captain O. A. Sprawson has been selected for appointment as Professor of Physiology at the Lucknow Medical College. Captain A. W. Overbeck Wright, officiating superintendent of the Central Prison at Agra, has been appointed to officiate as Superintendent of the Lunatic Asylum at Agra. Captain R. E. Lloyd, professor of biology at the Medical College, Calcutta, has been granted furlough out of India for two years. Captain R. B. S. Sewell, surgeon naturalist to the Marine Survey, has been appointed to officiate during Captain Lloyd's absence. Captain A. G. McKendrick has been placed on special duty under the Acting Sanitary Commissioner with the Government of India. Captain W. C. Long has been granted combined leave and furlough on medical certificate for one year. Captain R. McCarrison has arrived home on leave of absence from India. Captain J. H. Burgess has been appointed Specialist in Advanced Operative Surgery to the Ninth (Secunderabad) Division of the Southern Army. Captain R. T. Wells has taken up duty as Superintendent of the Dera Ghazi Khan Jail. The services of Captain E. J. C. McDonald, plague medical officer at Gurgaon, have been placed at the disposal of the Government of India, Department of Education. Captain W. J. Powell, officiating superintendent of the Central Jail at Jubbulpore, has been appointed to officiate as Civil Surgeon of Jubbulpore during the absence on leave of Major P. F. Chapman. H.E. the Governor of Bombay in Council has been pleased to appoint Captain J. Smalley to act as Second-class Surgeon, Ahmednagar. Captain J. W. Barrett has returned to India on the expiration of his leave of absence. Captain H. Halliday has taken up duty at Lyallpur as Civil Surgeon. Captain P. S. Mills, whose services have been temporarily placed at the disposal of the Punjab Government, has been appointed Plague Medical Officer at Delhi, vice Captain H. C. Keates, transferred to civil employment.

TERRITORIAL FORCE.

Royal Army Medical Corps.

2nd South Midland Mounted Brigade Field Ambulance, Royal Army Medical Corps:—The undermentioned officers to be Captains (dated Nov. 13th, 1911): Lieutenant Alfred W. Moore and Lieutenant Gurney W. Buxton.

Welsh Border Mounted Brigade Field Ambulance, Royal Army Medical Corps: Captain Alexander G. Hamilton to be Major (dated Jan. 6th, 1912). Captain James Herbert Dixon, from the list of officers of the Royal Army Medical Corps attached to Units other than Medical Units, to be Captain (dated Jan. 6th, 1912).

1st London (City of London) Field Ambulance, Royal Army Medical Corps: Arthur Donald Griffith to be Lieutenant (dated Nov. 22nd, 1911).

2nd North Midland Field Ambulance, Royal Army Medical Corps: Claude Marriott Cowper to be Lieutenant (dated Oct. 17th, 1911).

Attached to Units other than Medical Units.—The undermentioned officers to be Captains: Lieutenant Hugh Richardson (dated Jan. 1st, 1909), Lieutenant Percy Moxey (dated Oct. 1st, 1911), and Lieutenant Harry F. Wilkin (dated Nov. 19th, 1911). Captain Oliver Eaton resigns his commission (dated Jan. 6th, 1912).

For Attachment to Units other than Medical Units.—Devonshire Penrose Hawkes Gardiner, to be Lieutenant (dated Nov. 1st, 1911).

JOURNAL OF THE ROYAL ARMY MEDICAL CORPS.

In the opening number of the new volume of this journal Lieutenant-Colonel Sir William B. Leishman continues his Critical Review of Kala-azar and Tropical Sore. A joint paper by Major T. W. Gibbard, Major L. W. Harrison, and Lieutenant A. S. Cane deals with Further Investigations on the Use of Salvarsan in Syphilis. Its authors have had

great success with the technique which they have adopted, but they add a note of warning that "the fact that there is nothing in the technique which is beyond the capacity of anyone with ordinary skill and intelligence does not make salvarsan a remedy which can be administered carelessly with impunity." Captain G. J. Keane has some Notes on the Treatment of Syphilis in Uganda, which will be read with interest. The author points out that the natives will be wiped out by syphilis unless energetic measures are taken to enforce more strongly the treatment of the disease. Major M. H. Babington's article on An Outbreak of Paratyphoid B. Fever in Malta is also worthy of attention. In a note which occupies only two pages Colonel R. H. Firth makes a suggestion which, though perhaps not absolutely novel, comes with striking force from a scientific journal. After referring to the work of Loeb on parthenogenesis and its extension by other investigators, Colonel Firth points out that Bataillon of Dijon has succeeded in mechanically fertilising the ripe eggs of the common frog with the ultimate production of tadpoles as a result. Thus the segmentation brought about by altered environment of the ova of invertebrate animals in which gamogenesis is normal, has been followed by the fertilisation of the ova of a vertebrate animal without the physical contact of the two sexes. This, Colonel Firth suggests with all reverence, may throw light on the story of the birth of Christ. The time was not so very long ago when the Church looked upon science as her enemy, but it is more and more being recognised that the Church and Science may be expounders of two aspects of one truth. "This generation," says the author, "may not live to see the removal of all the difficulties which stand in the way of a scientific explanation of many things which are still mysteries, yet, in the light of what little glimmer we possess, it is desirable that hasty criticism of unintelligible things should be avoided."

Correspondence.

"Audi alteram partem."

THE MEDICAL PROFESSION AND THE NATIONAL INSURANCE ACT.

To the Editor of THE LANCET.

SIR,—Sir Alfred Pearce Gould's judicious letter in your columns cannot fail to have a good effect upon our sadly distraught profession. The great need now is to search out our points of agreement and work steadily together for their achievement. No sense of false pride or petty ambition must stand in the way of making use of every individual or institution that may be useful in securing our common aim. In our search for points of agreement, points of disagreement, some old and well known, others new and forced to the front by powers outside ourselves, will certainly be conspicuous. These latter can only be met either by a loyal submission of the minority to the views of the majority or by considered compromise.

Sir Alfred Pearce Gould and I, I fear, will never agree as to the merits and demerits of "contract practice." I cannot bring myself to believe that my professional colleagues are so different from mankind in general that it is impossible to obtain from them the best work unless for each item of added service they receive additional remuneration. This principle of payment is absent from the remuneration given to the navy, the army, the church, to the majority of teachers, and even to Cabinet Ministers. Those who believe that this principle must be an essential feature in professional remuneration in order to secure efficient service, are in my opinion misreading human character as badly as are those who assert that surgeons who receive large fees for each service rendered are incapable of making their pecuniary interest subservient to their patient's welfare.

I believe that medical men when properly paid, by whatever system, will give the best service of which they are capable, even as I rejoice to believe the majority of medical men do now, however inadequate their pay may be. Despite our fundamental differences, I am sure that if it were necessary in the interests of the profession Sir Alfred Pearce Gould or I, finding himself in the minority on this question, would loyally support the wishes of the majority. Fortunately this is not necessary. As Sir Alfred Pearce Gould points out in his letter, "the Act is wide and vague." It will therefore be possible for us to compromise and to support the fourth cardinal point as follows: "*The method of remuneration of medical practitioners adopted by each Local Health Committee to be according to the preference of the majority of the profession of the district of that committee.*" In some districts we may have a "capitation grant," in others a "fee for attendance," and in yet others, perhaps, we may have a combination of these two methods—a smaller capitation retaining fee combined with a fee for each attendance. It even seems possible that in some districts the medical benefit for all insured persons may take the form of a direct contribution to the cost of medical attendance.

To secure that these diverse systems shall be set up on a proper basis so as to provide adequate remuneration and other conditions of service satisfactory to the profession, medical men must present a united front. As Sir Alfred Pearce Gould says, the profession must look to the British Medical Association to take the chief part in this work. Valuable help may be given by the Royal Colleges and other institutions. The profession must, however, never forget that the only body in the deliberations of which representatives of every class of practitioner, medical officers of the Royal Household and of Poor-law unions, censors of the Royal College of Physicians and colliery doctors, surgeons who earn 100 guineas in an hour and others who earn scarcely so much in a year, can meet on equal terms and support such of their special privileges and interests as do not clash with the common good, is the British Medical Association. I am, Sir, yours faithfully,

Harley-street, W., Jan. 8th, 1912. LAURISTON E. SHAW.

To the Editor of THE LANCET.

SIR,—We must all be grateful to you for your endeavours to unite the profession, and as one who feels keenly the need of some strong lead in the direction of practical unity, I venture to ask you to permit me to offer a few suggestions.

It seems to me that the profession is absolutely united in its desires, but hopelessly disunited as to the means by which these should be attained. I take it that we all feel on the one hand that an income-limit of not more than £2 a week is the irreducible minimum under which the profession could work the Act, and that the financial estimates under which the Act has been prepared are quite inadequate to meet the needs of the case, and we are determined that unless these difficulties can be got over no one should undertake to give medical treatment under the Act.

When, however, we come to consider how these difficulties may be met there seem to be three policies advocated by different sections of the profession: (*a*) One section appear to be of opinion that it is impossible under the Act to get these demands adequately conceded, and therefore that the only thing to be done is to refuse to have anything to do with the Act, whether in the way of forming Medical Committees or accepting posts on Insurance Committees, and of course of forming a panel. (*b*) Another section believe that it might be possible to obtain the concessions desired from the Insurance Commissioners, and consider that unless the Insurance Commissioners will agree upon conditions applicable to the whole Kingdom, which would therefore all be on the same scale, no one should undertake to give medical treatment under the Act. (*c*) The third section appear to think that it may be necessary to have somewhat modified regulations for different districts, and that it might even be better that these should be arranged locally, provided that these arrangements come under the irreducible minimum already referred to, but that no one should agree to give medical treatment under the Act unless these arrangements were satisfactorily conceded in every part of the country. I suppose that the third alternative would be regarded as practically the policy of the existing Council of the British Medical Association.

The first alternative appears to be the policy of the *Practitioner* and apparently of the new Manchester association. Dr. F. J. Smith's committee do not seem to have committed themselves to any definite policy, and they probably consist mainly of supporters of (*a*) and (*b*), with a small section of supporters of (*c*). The object of the supporters of (*a*) appears to be to endeavour to wreck the

Act, but it is a difficult and perhaps a dangerous thing to run counter to an Act of Parliament, and to endeavour to do so usually brings loss and discredit upon those who make the attempt. Between (*b*) and (*c*) it would seem to me to be difficult to make a decision apart from the best expert advice, and it appears to be between these two policies that the British Medical Association will have to decide, and if a wise decision is to be made it will, in my opinion, depend not upon clamorous meetings or violent newspaper letters, but upon the clear hard thinking of the men of business in our profession. Unfortunately the use of the terms such as "The Great Betrayal" or the accusations of political motives which have been freely bandied about have done much to render such careful thinking difficult, if not impossible.

My suggestion certainly would be that the matter should be now left to be decided by the different divisions of the British Medical Association and by its Representative Meeting. It is said that the newly formed bodies are intended to support the British Medical Association, but divided counsels are always dangerous, and I hope that we shall all agree to adopt the only constitutional action, at least to those of us who are members, of working through the existing constitution of the British Medical Association, and that whatever is decided by the majority after careful consideration may be supported loyally by us all.

I have ventured in a letter to the *Times* of Dec. 26th to recommend that three of the leaders of the profession—the President of the General Medical Council, the President of the Royal College of Physicians, and the President of the Royal College of Surgeons—should be asked to arbitrate between the conflicting sections of the profession. My meaning was not that they should attempt to settle for us what policy we should adopt, but what method we should adopt for arriving at our policy. I believe that if the different organisations concerned would be willing to be guided by some such impartial authority a great step towards peace and unity would be accomplished.

Apologising for trespassing at so great length upon your space, I am, Sir, yours faithfully,

CHARLES F. HARFORD.

Livingstone College, Leyton, E., Jan. 8th, 1912.

To the Editor of THE LANCET.

SIR,—The exhaustive article in your issue of to-day, together with the instructive letter of Sir Alfred Pearce Gould, should be of the greatest value to the profession, and the question that he has put at the end of his letter—namely, "Shall the scheme of 'medical benefit' be formulated by the Insurance Commissioners or Local Health Committees, or shall it be formulated by the profession and pressed upon these bodies?" can only be answered in one way, that is, as he urges—by the profession.

The profession, however, has not before it, either in the Act or from any official or other source, any intimation as to the services which will be required from medical men accepting service under the Act, and until their duties and responsibilities are distinctly stated I would urge that the amount or kind of remuneration cannot with any advantage be even considered. I feel sure that the profession would be glad to assist in making the Act a success, but it must be assured that the interests of the nation will be protected, and that the medical service shall be far above any hostile criticism.

It must be remembered that for the first time in the United Kingdom the State has now accepted the responsibility of giving "medical benefit"—not to paupers, but to a mass of people who will have compulsorily to pay for its medical service, and who will naturally insist on having the best. I feel quite sure that the profession will wish to supply an up-to-date and splendid medical service to the people under the ægis of the State—a service which must advance with the times and be always efficient on the most scientific lines, but modern medicine and surgery in their higher forms require heavy expenditure in the necessary appointments of a well-ordered clinic. With my intimate knowledge of every class of practice I am obliged to point out that there are many surgeries in crowded neighbourhoods where cheap or club practice is carried on which are not adequately fitted for the realisation of the above ideal. This statement may be unpalatable, but the present condition of things must be faced. I feel very strongly that with "free choice of a doctor," although the assured may exercise the "free choice," the State will still be responsible and will have to see that the surgeries have every possible convenience and appliance for the proper and efficient practice of modern medicine and surgery.

Who is to pay for these properly fitted surgeries, with instruments, sterilising baths, electrical appliances, hot and cold water, and antiseptic dressings of all kinds? Will the Insurance Commissioners make grants to doctors on the panel, or will the doctors who accept service be required to go to large expenditure in providing for the requirements of the service? It must be perfectly understood by the profession that over 15,000,000 people will have to be catered for, that there will be no out-patient departments of hospitals giving free medical attendance, and with the "free choice of a doctor" the popular man for the time being will be overworked, and after having provided proper accommodation for a large number of patients may the next year, the popular favour having gone to others, find himself involved in heavy loss; also every medical man on the panel will have no security of tenure, but will hold his office at the will of an Insurance Commission, not an unbiased, independent body, but a board composed of Friendly Society officials, with but one medical man on it, who could not possibly have sufficient weight to influence the other members, however well-disposed to the profession he might be.

The surgeries must be fitted for the proper treatment of casualties and urgent cases, but under the Act medicines are to be provided by pharmaceutical chemists. Are they to provide waiting-rooms? Are their shops to be near the surgeries? Will they provide expensive medicines on the unfettered prescriptions of medical men on any capitation system? If not, are medical men on the panel to provide medicines on terms which others have refused?

Are the medical men accepting service to undertake the treatment of fractures and perform all operations that may be necessary, or are they only to treat ordinary cases, sending serious or special cases to the nearest hospital? If the latter, what arrangements are to be made with the hospitals? The out-patient departments can be turned into clinics for the treatment of special cases and the beds can be used for insured persons; but insured persons who have paid the State for "medical benefit" will not be satisfied with the hospital conditions now provided for persons seeking gratuitous aid at the expense of the benevolent. They will demand, and rightly demand, the attention due to those who compulsorily, and in many cases against their will, have been obliged to pay for "medical" benefit to be provided by the State.

A question therefore arises, Will the voluntary hospitals be taken over by the State and the staff adequately paid, or if not are medical men on the panel to attend serious cases in the homes of the insured, homes in some cases of the most dirty and squalid description? When all these questions have been considered and decided, then, and not until then, the profession will be able to formulate a scheme of remuneration through a central body having the confidence of all its members. I trust that no attempt will be made to enter upon local bargaining with Insurance Committees or Commissioners dominated entirely by Friendly Societies.

I venture, in supporting Sir Alfred Pearce Gould's opinion, to ask him to gather together a strong committee, with a view to the drawing up of a statement showing the minimum that the State could possibly offer as "medical benefit" to self-respecting people, many of them able and willing to pay for medical treatment, but who will have compulsorily in the future to pay the State for medical service. With such a statement before them showing the duties, responsibilities, and requirements of the service, the question of remuneration would be easy of adjustment, equitably and to the advantage of both the State and the profession.

I am, Sir, yours faithfully,

Hampstead, N.W., Jan. 6th, 1912. ALBERT BENTHALL.

To the Editor of THE LANCET.

SIR,—The recent correspondence in your contemporary the *Times* by Mr. Boyton, Mr. Smith Whitaker, Sir Henry Craik, and Sir Philip Magnus has left an uneasy impression on my mind that Mr. Smith Whitaker is not receiving fair treatment. He was the paid servant of the British Medical Association, and as such conducted a missionary tour to its divisions before the introduction of the Bill, and also acted as a negotiator during its passage through the Houses of Parliament. He subsequently received a substantial recognition of his services from the Government. Under these circumstances appearances favour on the one hand the supposition that in view

of the fact that there were numerous official and unofficial interviews taking place between him and the Chancellor extending over the periods both before and after the introduction of the Bill, he was the tool of the Chancellor and his political supporters, and on the other hand, the supposition that Government supporters belonging to the Association were instructing him as to his course of procedure.

It is incredible to me that the governing authority of the Association did not give him written instructions as to the course which he was to pursue, both during his missionary tour and during the negotiations which he conducted with the Chancellor. It, therefore, appears to me highly desirable, in justice to Mr. Smith Whitaker, that such instructions should be published, and it is also desirable that the country should know how far the Government has conducted the negotiations with the British Medical Association with clean hands.

I am, Sir, yours faithfully,

Hatfield, Jan. 4th, 1912. LOVELL DRAGE.

To the Editor of THE LANCET.

SIR,—Much as we dislike it, the National Insurance Act has come to stay, and we must make the best of it. Apart from the medical benefits it has many commendable points which in time will be appreciated by the public. On the other hand, the clauses relating to medical benefits are most unsatisfactory, but they appear to be elastic.

The "six cardinal points" of the British Medical Association have not been accepted by Parliament, and I feel sure that it would now be a waste of time and energy to agitate for their incorporation in the Act. It may be that it is well for the profession and the public that the "six cardinal points" or the most essential of them were rejected, as their adoption would undoubtedly have perpetuated the objectionable *per capita* system of payment.

We are now free to demand our own terms, and I sincerely hope that we shall be unanimous in demanding payment for actual services rendered. I can see nothing in the Act to prevent the Insurance Commissioners from giving this method a trial, and if we give them plainly to understand that we are determined not to work under the Act unless we are paid according to an agreed minimum scale for actual work done, it is possible that this essential will be conceded.

In July last the Imperial Medical Reform Union sent out 20,000 referendum forms to practitioners in England and Wales inviting them to state whether in favour of capitation payment or for services rendered, and of the replies received more than 95 per cent. were in favour of the latter method of remuneration. The adoption of this method is, in the opinion of the Council of the Union, the only way to preserve the independence of the profession.—I am, Sir, yours faithfully,

GEORGE BROWN,
General Secretary of the Imperial Medical Reform Union.

Basinghall-street, E.C., Jan. 9th, 1912.

To the Editor of THE LANCET.

SIR,—May I ask space in your valuable paper to call the attention of my fellow medical practitioners to the extreme danger to themselves and to the profession at large in rashly signing any pledge or undertaking not to work under the National Insurance Act. It is quite patent that a great deal of the materials published in the lay press is purely of a general political anti-governmental colour, aimed at increasing subscribers to certain papers, and serving up pabulum for lay readers at the expense of the medical profession, whose real interests are sacrificed and the profession put out of court and rendered powerless by their present attitude of "*ruat cœlum.*" I do not feel myself at liberty to say more, and remain,

Yours faithfully,

F. W. FORBES-ROSS, M.D. Edin., F.R.C.S. Eng.

Harley-street, W., Jan. 6th, 1912.

To the Editor of THE LANCET.

SIR,—What is the use of all this outcry against Mr. Lloyd George's offer to buy our services for his big national club at the rate of 4*s.* 6*d.* a head? How can we reasonably refuse to serve under his scheme when hundreds, perhaps thousands, of us are now working for clubs at that rate and less, and hundreds more are hungering for the jobs? How can we blame the Chancellor for taking us at our own valuation and offering to buy us at market price, the price fixed by our own competitive folly in the open, unorganised, medical labour market? No one will believe our demands to be just as earnest while our acts thus belie our words. To regularise our position every club should be notified that on and after July 1st our charge per member would be 8*s.* 6*d.* (or thereabout), otherwise all contracts to cease.

I am, Sir, yours faithfully,

City-road, E.C., Jan. 8th, 1912. H. G. DIXON.

To the Editor of THE LANCET.

SIR,—In connexion with recent correspondence in your columns, my attention has been called to By-law 39, Sect. 4, of the British Medical Association regulations, which enacts as follows: "In voting upon any matter upon which a constituency has passed a resolution within the three months immediately preceding such meeting the Representative or Representatives of that constituency shall be under obligation to vote in accordance with such resolution." It is obviously important that in future the representatives have a clear understanding as to their duties in the matter of voting.

I am, Sir, yours faithfully,

London, S.W., Jan. 8th, 1912. EDWIN SMITH.

To the Editor of THE LANCET.

SIR,—Will you allow me space in your valuable journal for a brief reference to Dr. Edwin Smith's letter in your issue of Dec. 30th. I was present as an onlooker at the Representative Meeting to which he refers (Nov. 23rd), and myself heard Dr. Maclean instruct the delegates that in their voting "they were to vote in accordance with their conscientious opinion on the subjects that arose for consideration." I was amazed when I heard him say this, for obviously the delegates were there as representatives of the divisions only to the extent of expressing the views of the divisions, which had been considered at the meetings held previously throughout the country, certain definite points to vote on, for or against, having been submitted to them previously for their consideration. If, then, the chairman (Dr. Maclean) instructed the delegates to vote in the manner referred to, and assuming they did so, the meeting, I submit, ceased to be representative of the views of the profession. We owe Dr. Smith a debt of gratitude for his efforts to ventilate the matter. Again, as an onlooker, I could not help feeling that an attempt was being made, as Dr. Smith says, to fritter away the time of the meeting in futile discussions. I entirely agree with him that the consideration of the *number* of medical men (i.e., 3, 5, or 8 against 80) on the committees is not worth a thought, as in either case they would be powerless.

Dr. Maclean, according to his own statement, had received the offer of Mr. Lloyd George of the post of Commissioner for the secretary of the Association, and in my opinion there would have been no breach of confidence if he had openly explained this to the Representatives instead of talking of "smoke-room rumours," &c. Had he done this it is certain the Representatives would have voted very differently from the manner in which they did.

I was present at the Battersea town-hall when Dr. Lauriston Shaw addressed the Wandsworth division, and was astonished to hear him say that the doctors could have "8*s.* 6*d.* or 10*s.* per annum or 2*s.* 6*d.* per visit if they preferred it." There may be no legal barrier to this, but there is every other conceivable barrier, and when he made this statement he should have known this well. It looks as though this statement was made only to prevent those present from supporting the resolution which Dr. Edwin Smith had moved calling on the Council to resign, and I at any rate trust that no steps will be left untaken that will lead to the compulsory resignation of the Council.

I am, Sir, yours faithfully,

REGINALD THORPE, M.R.C.S. Eng., L.R.C.P. Lond.

Elmbourne-road, Tooting Bec Common, S.W., Jan. 6th, 1912.

*** We hope to publish later some of the many letters on this subject still in our hands.—ED. L.

THE MORBID DIATHESES.

To the Editor of THE LANCET.

SIR,—I am glad to find my old teacher Sir Dyce Duckworth raising a mild protest in THE LANCET of Jan. 6th (p. 54) against the too exclusive attention bestowed in the Bradshaw lecture[1] upon the parasite as against the host, or in his words, upon the seed as against the soil.

In my time, even long after "those dark days" of Mr.

[1] THE LANCET, Dec. 23rd, 1911, p. 1756.

Clement Lucas, Sir Dyce Duckworth—possibly more than any other teacher at St. Bartholomew's—urged that successful medical practice consisted in "treating the patient rather than the disease," a dogmatic maxim of profound truth which not only encouraged his students to study their "cases," but which also enables those who practise especially in the department of mental medicine to treat successfully, and happily in many instances to ward off, the most disabling scourge which can afflict the human race.

In his "thundered out" destructive criticism of diathesis, the Bradshaw lecturer has been carried by the interest of his subject further than he possibly intended, for—and this is why I write—as the orator of the Royal College of Surgeons he lends the influence of his powerful authority and position (to quote his words) "to destroy the reproductive function of the generative organs without ..... the knowledge of the individual" in cases of lunacy! He varies his theme "on some points in heredity" by an excursion into eugenics, and points out that the present moment would seem to be a favourable time for medical men to press upon the Government for some drastic measure for the protection of the State against the gradual increase of lunacy. Apart from the intrusion of medical men into politics—and not with the most happy experience if recent events are to yield a precedent—it may be well to note here that an inquiry made by a medical officer (Dr. G. Clarke) in one of the London asylums elicited the information that if the parents of those who were admitted insane had themselves been treated in the manner recommended by Mr. Lucas only about 1 per cent. of the offspring referred to would have been saved the scourge of insanity—i.e., insanity had occurred in the parents in nearly 99 per cent. after the birth of the certified patients. If every defective were deprived of those organs which are stated to belong to the next generation, then on the morrow there would be defectives again. Degeneration and defect are not the consequence of defective seed alone. By common consent they are equally the product of the environment or soil, and they are attendant upon evolution towards the perfect. In this progress towards perfection defectives will never be wanting. Defectives came not originally from other defectives, but from normal types. It is by no means certain that the offspring of two defectives even will be defective. The following letter from an old patient illustrates my point, although by itself I acknowledge that it carries no great weight:—"You will remember some years ago my giving birth to a child at the asylum. ..... I am pleased to tell you he is (up to the present) a very good boy. He has been awarded four medals and several prizes and is in the highest standard in the school."

Hitherto no pathogenic organism has been connected with insanity, and it may be stated to possess no more clearly defined pathology than in "those dark days" when insanity was recognised to have a definite "diathesis," and which, in the opinion of many, is still to-day a real condition—i.e., if such may be interpreted to imply a *tendency*, under certain conditions, for the tissues inherited from the parents to develop disease on certain definite lines; in other words, a defective constitution (soil) which is inherited and which is so constructed as to permit of readily disordered metabolism under the influence of some specific or non-specific organism (seed).

The views of a great surgeon upon biological problems cannot fail to be of interest to those who are attempting to unravel the facts of experience, even if these are only on the subjective side. Mr. Lucas supports his destructive criticism in regard to leprosy from Holy Writ and refers to the discovered "seed." May I also quote from Holy Writ and draw the attention of the lecturer to the parable of the sower which gives the vicissitudes of the seed resulting from environment? That which fell by the wayside served only as food for birds, that on stony places became scorched and sunburnt, and that which fell among degenerate thorns was choked out! None of the effects were in the least attributable to defective seed. It is essential for good development to have good surroundings, and good environment is as essential as good seed. It is clear, as Sir Dyce Duckworth has pointed out, that the individual organisation (soil), or in the case of lunacy the environment, has intimate proclivities which it is the fashion to-day to ignore.

I am, Sir, yours faithfully,

Claybury, Jan. 9th, 1912. ROBERT JONES, M.D. Lond.

MINERS' PHTHISIS IN THE TRANSVAAL.

To the Editor of THE LANCET.

SIR,—From recent cables in the Johannesburg newspapers it is gathered that in your issue either of Dec. 1st or 8th, 1911, appears a somewhat sensational letter from a medical practitioner in this city in respect to miners' phthisis in the Witwatersrand Mines. This letter has also since been published here, and, with your permission, it is desired to refer to its last paragraph. In this paragraph are quoted certain statements by a local engineer and tutor, who is known to feel aggrieved that no member of the Commission (before which, of course, he had every opportunity of adducing any evidence he desired) will discuss its statistical and other findings publicly with him, or descend to any exchange of personalities. While this policy will be adhered to it is thought right that the history of the Mining Regulations Commission should for general information be briefly set out; for, though well known in Johannesburg, it is naturally little known elsewhere.

This Commission was appointed by his Excellency Lord Selborne on May 11th, 1907, and consisted of five members (Messrs. Krause, M.L.A. (chairman), Nicholson, Porter, Price, and Heymann). Its immensely wide reference was to inquire into and report upon the following matters:—

1. The working of the Mines, Works, and Machinery Regulations, and to make recommendations for any amendments thereto necessary for the better protection of the health and safety of persons working in mines, with special reference to the following subjects: (*a*) prevention of accidents; (*b*) ventilation; (*c*) underground sanitation; (*d*) change-houses.
2. The present system of measuring up work underground, and to make recommendations as to the necessity or otherwise for legislation on this subject.
3. The question of extending the operations of the Mining Certificates Ordinance, No. 50 of 1903, to engine-drivers driving stationary and traction engines, not being man-hauling engines.

In order to clear the ground it was decided to deal first with the second and third of the terms of reference as being matters of limited scope compared with those comprised under Term 1.

On Sept. 21st, 1907, an interim report upon these subjects was presented, which report is printed as Appendix "B" to the Final Report. The Commission then proceeded to take evidence on the very wide ground covered by Reference No. 1 and virtually completed this work by June, 1908. About this time, however, commenced the curious sequence of misfortunes with which the *personnel* of the Commission was pursued. In April, 1908, Mr. Nicholson resigned through ill-health and died shortly afterwards. In June, 1908, Mr. Price resigned and left the Transvaal, and in November, 1908, Dr. Porter went on sick leave until May, 1909. In September, 1909, Mr. Heymann met with a serious motor accident, and in October, 1909, developed dangerous illness which confined him to bed for eight months. The progress of the report was, therefore, considerably delayed, and the great labour of its preparation fell eventually mainly on the shoulders of the two remaining Commissioners, whose time was, even in the ordinary way, sufficiently occupied by their professional and official duties. They were, therefore, unable to report till March, 1910.

It must not, however, be thought (as is tacitly implied in the letter under reference) that nothing was done between June, 1908, when the taking of evidence finished, and August, 1910, when the report was published. For in November, 1908 (*vide* p. 40 of Report), the Commission made the strongest official interim representation to the Honourable the Minister for Mines on certain matters, and notably on the outstanding importance, from the point of view of dealing with miners' phthisis, of preventing and allaying dust in mines. As the result of the Commission's recommendations in November, 1908, the following additions to the Mining Regulations were gazetted on Dec. 24th, 1908:—

5. Every place where development work is carried on and where the natural strata are not wet, and every dry and dusty stope shall be adequately supplied at all times with suitable clean water. Such supply shall be continuous, and shall be sufficient for effectively damping the broken ground and for allaying the dust caused by drilling operations.
6. Blasting shall be so arranged that men working in other places shall be exposed as little as practicable to dust and smoke.
7. All plant, material, and other things necessary to enable the above rules to be carried out shall be provided and maintained in working order.

146 (II.). The ganger or miner in charge of workmen shall be responsible that the following provisions be observed: (1) No person shall in the drilling of holes use any percussion machine-drill unless a

water-jet or spray or other means equally efficient is provided and used so as to prevent the escape into the air of dust caused by the drilling. (2) No person shall in any part of a mine remove any broken rock or ground if such rock or ground is in a dusty condition until it has been effectively damped so as to prevent the escape of dust into the air during removal. (3) No person shall, after firing has taken place, whether by electricity or in any other manner, enter the place in which such firing has occurred until the fumes caused by the explosion shall have been sufficiently dissipated, unless such person is wearing an effective respirator or other apparatus to prevent the inhaling of fumes or dust.

We note that the statistical conclusions of the Commission have been characterised in the letter under notice as entirely below the mark, and based on wholly insufficient data and inquiry.

Now, the figures from which these conclusions were drawn covered the triennium 1905–07, and were furnished by Dr. Louis G. Irvine and Dr. D. Macaulay, for whom they had been excerpted with great care by Mr. Dawson Squibb, of the Transvaal Government Health Department, from the returns of the Mines Department and of the registrars of deaths. In the opinion of the Commissioners these figures were at that time (1908) sufficiently recent, and it was not reasonably practicable, under the then existing circumstances, to obtain more reliable data. Then, in order to determine the true significance of these figures, which were somewhat difficult to deal with, and are discussed at pp. 33–37 of the report, the Commission secured the coöperation of Mr. G. D. Maynard, whose expert knowledge of modern statistical methods is well known. The broad conclusions arrived at were as follows:—

1. That amongst "white mining males of 20 and over" during the triennium 1905-06-07 "phthisis" (including miners' phthisis) accounted for 43·1 per cent. of all deaths, "other respiratory diseases" for a further 17·9 per cent., making a total of 61 per cent. from "all lung diseases," the comparative figures for "non-mining males" at the same age being 10·2, 15·8, and 26.

2. That the death-rate from "phthisis" (including miners' phthisis) at ages of 20 and over was more than six times greater amongst "white mining males" than amongst white "non-mining males."

3. That for the three years 1905-06-07 the death-rates from "phthisis" (including miners' phthisis) amongst "white mining males" at ages of 20 and over were respectively 6·0, 5·3, and 6·4 per 1000. Statistical theory shows that variations as great as these may be expected apart from any real change in the incidence of the disease. It is therefore impossible to state from the evidence before us that any alteration in the phthisis death-rate took place during the years in question.

4. That the death-rate from "other respiratory diseases" amongst "white mining males" at ages of 20 and over was 70 per cent. greater than that amongst similar white "non-mining males"—viz., 1·7 to 1.

5. That when "phthisis" and "other respiratory diseases" are excluded there appears to be an appreciably lower mortality from "all other diseases" amongst white "mining males of 20 and over" than amongst white "non-mining males of 20 and over"; this may in part be due to the fact that the white miners' high death-rate from respiratory diseases tends in a limited degree to decrease the numbers at risk to other complaints, and to the further fact that when a person with chronic respiratory disease succumbs to an acute intercurrent non-respiratory complaint—e.g., enteritis—the older standing respiratory disease will usually appear in statistical returns as the cause of death.

6. That the "death-rate from all diseases" amongst white "mining males of 20 and over" is greatly in excess of that amongst white "non-mining males of 20 and over" when the necessary correction for age-constitution of white "mining males" is made; this excess is about 60 per cent.

Now, while these conclusions were possibly within the mark—a restraint often lamentably lacking in irresponsible criticism—they are strictly those justified by the figures before the Commission. With regard to alleged insufficiency of inquiry, it should be remembered that the Commission with its immensely wide reference, had neither the *personnel* nor the legal power to undertake the careful individual physical examination of many hundreds of miners, which the seriousness of the conditions as revealed by the Commission's report has since brought about. But before this important clinical work could even be attempted, a special Act of the Union Parliament was necessary in order to compel miners to submit to such examination, and seven medical men have since been engaged several hours a day for many months in carrying it out. Their findings will, we understand, be available at an early date.

As regards the general results of the Mining Regulations Commission's work, it is particularly gratifying to us to be able to state that practically all of its recommendations, including those regarding dust-prevention, mine-ventilation and air-standards, scavenging, water-supply, native diet, housing, first-aid and ambulance, were promulgated almost *verbatim* as regulations with the force of law, in *The Union Gazette Extraordinary* of Nov. 21st, 1911; and if these regulations are enforced we believe that they will place the hygiene of mining in South Africa on a higher plane than that of any other mining community of which we are aware.

We append copy of some of the regulations in question, and have the honour to be, Sir,

Your obedient servants,

F. E. T. KRAUSE, LL.D.
CHARLES PORTER, M.D.,
Medical Officer of Health of Johannesburg.
A. HEYMANN, M.A.,
Consulting Analytical Chemist and Metallurgist.

Johannesburg, Dec. 18th, 1911.

SOUTH AFRICAN UNION GAZETTE EXTRAORDINARY, 21ST NOVEMBER, 1911.

Regulations made under Section Four of the Mines and Works Act, 1911 (Act No. 12 of 1911).

CHAPTER I.—*Definition "Ventilating District."*—Ventilating district shall mean such part of a mine as has an independent intake commencing from a main intake air-course and an independent return air-way terminating at a main and return air-course.

CHAPTER II. *No. 7 (1).—Surface Protection.*—Water containing poisonous or injurious matter in suspension or solution must be effectually fenced off to prevent inadvertent access to it, and notice boards shall be put up in suitable places to warn persons from making use of such water. 2. In no case may water containing any injurious matter in suspension or solution be permitted to escape without having been previously rendered innocuous.

CHAPTER III.—*Underground protection.*—12. Where a place contains, or is likely to contain, a dangerous accumulation of water or noxious gases, any working approaching that place shall have boreholes kept in advance, and such additional precautionary measures shall be taken as may be deemed necessary to obviate the danger of a sudden breaking through of such water or gases, and such working place must not exceed six feet in width. A certificated surveyor shall exercise supervision at every such working place and shall be responsible for the correct direction of such working, and for the breaking through of such water or gases without accident. In the case of a mine for which there is no certificated mine surveyor, the manager shall have all the powers and responsibilities and perform all the duties conferred or imposed on a certificated surveyor in this regulation.

CHAPTER VI.—*Ventilation.*—56. (1) The vicinity of the collars of downcast shafts shall be kept clear of cinder heaps, and so far as practicable, of smoke. (2) The ventilating current from the downcast shall be suitably split to provide sufficient air to all working places. (3) In all portions of a mine or workings where the natural ventilating current is insufficient, suitable mechanical appliances for ventilation shall be provided and operated.

CHAPTER IX.—*Duties of Gangers, Blasting, &c.*—101. (1) No person shall in the drilling of holes use or cause or permit to be used any percussion machine drill unless a water jet or spray or other means equally efficient is provided and used so as to prevent the escape into the air of dust caused by the drilling, and unless the floor and sides of the working face to a distance of at least ten feet from the face be kept sufficiently damp to prevent dust being raised by the escape of exhaust air from the rock-drill. (2) No person shall in any part of a mine remove any broken rock or ground or cause or allow the same to be removed if such rock or ground is in a dusty condition unless and until it has been effectively damped and is kept damp so as to prevent the escape of dust into the air during removal. (3) Any mine in which in the opinion of the Inspector of Mines the dust produced by drilling is not likely to cause miners' phthisis shall be exempted from the provisions of sub-sections (1) and (2) of this Regulation.

CHAPTER XIV.—*Responsibility in connexion with Mines and Works, &c.*—158. In addition to his other duties and responsibilities under these regulations the manager shall:—(1) Provide or cause to be provided on the surface, and in the case of a mine in the underground workings, sufficient and suitable sanitary conveniences in accordance with the following rules: (*a*) Where the number of persons employed does not exceed one hundred there shall be one sanitary convenience for every twenty-five persons or portion thereof; (*b*) where the number of persons so employed exceeds one hundred but does not exceed five hundred there shall be one additional sanitary convenience for every forty persons or portion thereof over the first one hundred; (*c*) where the number of persons so employed exceeds five hundred there shall be one additional sanitary convenience for every sixty persons or portion thereof over the first five hundred; (*d*) at each working level a well-ventilated, screened latrine with cement concrete floor, graded and drained to a sump, shall be provided for white and coloured persons separately, and shall be kept adequately supplied with sawdust, tailings, fine ash, or other suitable absorbent; (*e*) all pails or buckets used in connexion with underground sanitary conveniences shall have close-fitting lids which can be clamped on to prevent spillage during removal to surface. (*f*) All disused workings shall be barricaded off so as to prevent liability to fæcal pollution.

161. (1) If the manager or mine overseer is unable personally to carry out the duties prescribed for a shift boss in this regulation one or more competent white persons shall be appointed to act as a shift boss or bosses. (2) Each shift boss shall take charge during a shift of a section of the underground workings of the mine. (3) Each shift boss shall be responsible for the proper observance of the requirements of these regulations by the gangers or miners working under him, and shall as soon as practicable report to the manager or mine overseer any contraventions thereof; he shall further specially report whether water is being used in accordance with the requirements of these regulations for the allaying of dust and fumes. (4) The appointment of any shift boss or bosses shall not be taken to relieve the manager or mine overseer of any personal responsibility under these regulations. (5) Each shift boss shall at least once during his shift inspect every portion of the section of the mine assigned to him in which persons are working or through which they may have occasion to pass and shall ascertain the condition thereof as regards ventilation, sanitation, the presence of gases, and the state of the hanging wall, foot-wall, and sides, and generally so far as the safety and health of persons are concerned, and more particularly as regards the observance of the regulations for the prevention of dust.

162. In every fiery mine:—(1) (*a*) A station or stations shall be appointed at the entrance to the mine and to different parts of the mine as the case may require and a competent person or competent persons appointed by the owner, agent, or manager for the purpose, not

being a contractor or contractors for getting minerals in the mine, shall within two hours immediately before the commencement of each shift inspect every part of the mine situate beyond the station or each of the stations and in which workmen are to work or pass during the shift, and shall ascertain the condition thereof so far as the presence of gas, ventilation, roof and sides and general safety are concerned. (*b*) Such inspection shall be made with a locked safety lamp. (*c*) A report specifying where noxious or inflammable gas (if any) was found present and what defects (if any) in roof or sides, and what (if any) other source of danger were or was observed shall be recorded without delay in a report book to be kept in the engine-house or office at the mine for the purpose and accessible to the workmen. Such report shall be in the form approved by the Inspector of Mines and shall be signed by and so far as the same does not consist of printed matter shall be in the handwriting of the person who made the inspection. Such book shall not be moved from the engine-house or office on surface. (*d*) In the report book above referred to the manager shall clearly define the districts to be inspected by each person under this regulation and it shall be the duty of the manager to provide that the size of each district shall not be too large to permit of its thorough inspection and of the fencing off of any places which may be found dangerous within the time allowed. Should the inspector of mines consider any district too large he may by notice in writing to the manager require that it be reduced or divided for inspection purposes. (*e*) No workman shall enter, or be permitted to enter, the mine, or any part thereof, until such mine or such part has been so examined and reported upon as safe in such report book. (*f*) In collieries in which over 100 persons are employed an inspection required by Subsections (1) (*a*) to (*e*) of this regulation shall not be made by a ganger of that portion of the mine in which he is to work during the shift. (2) A similar inspection by the manager, or by a competent person other than a ganger appointed by the manager, and having at least three years' underground experience in mines of the class of the mine inspected, shall be made in the course of each shift of all parts of the mine in which workmen are to work or pass during that shift, but it shall not be necessary to record a report of the same in a book, provided that in the case of a mine worked continuously throughout the 24 hours by a succession of shifts the report of one of such inspections shall be recorded in the manner above required. (3) In no case shall a person be considered competent to make the foregoing inspections unless he has had at least three years' practical experience in coal mining in mines of the class to be examined. (4) The white miner or ganger in charge of a section or district shall make at least three inspections of each working face in his section or district whilst the workmen are at work.

CHAPTER XV.—*Miscellaneous.*—167 (1). Coloured labourers at the end of the shift shall, as soon as possible, be brought to the surface and shall not be kept waiting unnecessarily at the shift stations or elsewhere. (2) Time tickets of coloured labourers employed under ground shall either be marked underground or, where this is impracticable, in the shelter-room at the surface. (3) At every mine, except where exempted by the Government mining engineer, adequate provision shall be made elsewhere than in the living-rooms for drying wet clothing of coloured labourers coming off shift, and also for washing and disinfecting the clothing of such labourers.

168. One or more notices on which are legibly printed simple directions setting forth the approved procedure for the immediate treatment of cases of "gassing" shall be posted in a conspicuous place in every change-house, recreation room, and accident emergency station.

169. No person shall pollute the underground workings with fæces or urine, nor wantonly misuse or foul the latrines.

170. When tailings are used for filling worked-out ground the moisture contained in such tailings shall not have a higher potassium cyanide content than ·005 per cent.

CHAPTER XXIV.—*Ambulance, &c.*—227 (1). At every main travelling shaft, except where the mine hospital is close to such shaft, an accident emergency station shall be provided. This emergency station shall be equipped with the following: Two Royal Navy stretchers or stretchers of other pattern approved by the Government mining engineer. Two or more fitted first-aid boxes of a pattern approved by the Government mining engineer. A supply of dressings and splints. One portable oxygen inhalation apparatus. One air-mask with light hose hand-pump, or fitted with reducing valve to connect with compressed air or service pipe. Two portable electric lamps. In addition to the above there shall be kept at every coal mine: two oxygen breathing apparatus of the Shamrock or other type approved by the Government mining engineer. (2) At every level on which ordinary mining operations are being conducted there shall be kept: (*a*) a box containing emetic solution, sal volatile, three or more bandages, and a card upon which are printed simple directions for treatment of cases of gassing; (*b*) at least one plank stretcher of a pattern approved by the Government mining engineer. (3) On and after the first day of January, 1913, every mining official on any mine employing not less than 500 persons within six months after his appointment shall be required to be in possession of the certificate of an ambulance association recognised by the Minister testifying that the holder has attended a course of first aid and is qualified to render first aid to the injured, with special reference to mining accidents. For the purpose of this section mining officials shall not be taken to mean the classes of persons shown on the following list with any alterations of such list as the Government mining engineer may from time to time determine: Mine overseer, shift boss, chief surveyor, mechanical engineer, electrical engineer, foreman smith, foreman carpenter, foreman fitter, chief electrician, battery manager, cyanide manager, compound manager, hospital superintendent or orderly.

278 (1). At every mine or works where cyanide is used there shall be kept in a conspicuous and convenient place a sufficient supply of a satisfactory and efficient antidote for cyanide poisoning approved by the Government mining engineer. (2) Such antidote shall be kept in a box labelled "cyanide antidote" and explicit directions for the use of such antidote shall be affixed inside the lid of the box. (3) All vessels used for the treatment with acid of zinc slimes from the cyanide process shall be fitted with mechanical agitators and hoods or other appliances of such a nature that the fumes generated in such vessel shall be carried direct to the external air. (4) An adequate supply of wholesome drinking water shall be provided in each testing-room and assay office, and this supply shall be distinctly labelled "drinking water."

279. When any person employed in or about a mine or works receives injury by accident or otherwise the manager shall be responsible that the nearest qualified medical practitioner is sent for, unless the regular medical practitioner appointed to the mine or works resides within two miles of the scene of the accident. If the injured person is unable to proceed unaided to his abode or to a hospital the manager of the mine or works shall immediately have such person conveyed to his abode or to a hospital in the safest, best, and quickest way at the expense of the owner of the mine or works.

LEISHMANIA AND MOSQUITOES.

To the Editor of THE LANCET.

SIR,—Being, owing to stress of work, somewhat behindhand in the reading of your journal, I have only just noticed the article by Professor G. Franchini on the development of "leishmania donovani in anopheles."[1]

Before attempting to fill up the "great lacuna still existing in our knowledge of the transmitting agents of Leishman's bodies," it is necessary to be acquainted with the literature on the subject. And it is evident that Professor Franchini has either never read the work which has been carried on in India or chooses to ignore it. As long ago as 1907, or rather before, Captain W. S. Patton, I.M.S., when experimenting with kala-azar and mosquitoes, found that both culex fatigans and anopheles stephensi in the endemic area are naturally infected with a species of herpetomonas (H. culicis Novy) indistinguishable from either leishmania donovani or leishmania infantum, and that the mosquitoes acquire the infection through the larval stage. Professor Franchini does not state whether his mosquitoes are naturally infected with a species of herpetomonas. Until this is known the experiments described by him are valueless. Since reading his article I myself have seen in Guindy, Madras, in culex fatigans flagellates which answer to the descriptions given by Professor Franchini, being, in fact, the flagellate and post-flagellate forms described by Patton in his account of the life-history of the flagellates seen by him in mosquitoes.[2]

Further, it is difficult to understand why Professor Franchini fed his mosquitoes on cultures in which the parasites would already be flagellates. In order to be quite sure the parasite will flagellate in the species of mosquito used he ought to have fed his mosquitoes on a case which contains the pre-flagellate forms in its peripheral blood. Concerning the transmission of kala-azar Captain Patton has infected bugs (cimex rotundatus) which show no natural flagellates by feeding them on heavily infected kala-azar patients (note, not on cultures), and in them has then shown the flagellate forms. The lacuna still to be filled up is the transmission back again to animals and so the production of kala-azar. And until this is done the complete etiology of kala-azar will still belong to the arcana of pathology. If Professor Franchini in his experiments used cultures of "leishmania infantum," as I presume he must have done, I fail to see how he can thereby claim that "the leishmania donovani can live and develop in the intestinal tract of the anopheles." I note that such is the heading of his article. Leishmania infantum and leishmania donovani are not synonymous terms.—I am, Sir, yours faithfully,

J. HAY BURGESS, M.D. Lond., M.R.C.P. Lond., F.R.C.S. Eng.,
Captain, Indian Medical Service.
St. Thomas Mount, Madras, Dec. 21st, 1911.

PS.—In support of my statements please see Scientific Memoirs, No. 27 and 31, of the Government of India by Captain Patton.

FUNGI FOUND IN TROPICAL BRONCHOMYCOSIS.

To the Editor of THE LANCET.

SIR,—In the interesting paper on bronchomycosis by Dr. A. Castellani in THE LANCET of Jan. 6th no fewer than 12 new species of endomyces are named. One of these is figured as it occurs in the sputum and in a maltose agar culture. There is nothing in the figures or in the text to suggest that the organisms are endomyces, but I shall assume that this has been proved elsewhere.

We are told that "in contrast to the usual endomyces albicans none of them liquefies gelatin." Now endomyces

[1] THE LANCET, Nov. 4th, 1911, p. 1268.
[2] Brit. Med. Jour., July 13th, 1907.

albicans (Vuillemin) is the latest name of our old friend the thrush fungus. In his original communication[1] Vuillemin only goes into botanical details, but Gedoelst,[2] who specially thanks Vuillemin in his preface for supplying information, distinctly states that this organism never liquefies gelatin. Further, it has been pointed out[3] that whereas oidium lactis liquefies acid saccharine gelatin (wort gelatin) the thrush fungus does not liquefy gelatin under any circumstances. As a matter of fact, it is rare to find any yeast or allied organism that can touch nutrient gelatin even in months. On the other hand, they generally do liquefy sugar gelatin in 3–4 weeks, and 30 days was the time indicated as a fair test at 20°–22° C. by Duclaux's work.[4] At present the statements of different authors in regard to the action of eumycetes on gelatin are often difficult to reconcile.

In the table of fermentation reactions there is an example of the rule that often holds good in these fungi—viz., an organism fermenting lactose also ferments saccharose, but not maltose. It is remarkable, however, that the organism E. pseudotropicalis ferments lactose well and only gives a trace of gas with galactose. The name E. guilliermondi naturally arrests the attention of anyone interested in saccharomycology. In any case the organism would do so as it ferments saccharose but not lævulose. To anyone accustomed to the vagaries and aliases of these organisms the table suggests that the number of species could be reduced, and the text raises a suspicion that Sac. krusei is E. pinoyi masquerading in conidial form as a yeast.

Dr. Castellani has done good service in directing attention to the pathogenic importance of a group of organisms hitherto regarded as unimportant in pathology.

I am, Sir, yours faithfully,

Acton, W., Jan. 8th, 1912. R. CRAIK, M.D. Glasg.

THOMAS *v.* BARKER.

To the Editor of THE LANCET.

SIR,—As you have revived, in a conspicuous paragraph in your last issue, the memory of the action brought against me last February, perhaps you will allow me to say a few words upon the subject? Has it ever occurred to you that it is just possible that I was blamed for the negligence of others? If you read all the evidence, can you unhesitatingly tell me that you have never more than half-suspected that I was made the object of a very great and very cruel injustice, which, had I been a younger and less successful man, might have brought about my financial and professional ruin?

Are you aware that the *sole* charge brought against me was that I had wrenched an indisputably tuberculous joint and that the only person in the room at the time of the alleged violence was a fully qualified medical man who swore that I used no force of any kind?

Do you know that one of our most eminent surgeons wrote the following words after hearing the trial from beginning to end: "I affirm that it was *impossible* for a man of Mr. Barker's education and experience to be guilty of such a blunder, ... and amongst the crowd of distinguished men and women who thronged the court anxious to bear testimony to his skill, I venture to assert there was not one who was not disgusted and indignant at the patent injustice of the verdict." It is useless for me to tell you now, as I told the court, that I was *absolutely innocent* of what was alleged against me, but I do confidently hope that before my work is finished, you, amongst other members of your profession, will understand that I was made to suffer for an offence I never committed, and that I have not entirely laboured in vain for the advancement of a neglected art which has done very much to relieve human suffering.

Faithfully yours,

Park-lane, W., Jan. 4th, 1912. H. A. BARKER.

*** We cannot admit without demur Mr. Barker's definite claim to a "professional" position. We do not know to what "education" the eminent surgeon refers as having been undergone by Mr. Barker. We publish this letter, but we would ask Mr. Barker to remember that in so doing we publish an indictment of a jury, who are entitled to be considered honest and capable.—ED. L.

[1] Comptes Rendus de la Société de Biologie, 1898.
[2] Les Champignons Parasites, 1902, p. 38.
[3] Lafar: Technical Mycology, vol. ii., pt. 1, p. 63.
[4] Microbiologie, tome iii., p. 175.

THE MEDICAL PROFESSION IN FRANCE AND THE ACCIDENT INSURANCE QUESTION.

(FROM OUR SPECIAL SANITARY COMMISSIONER.)

Private Interests and Social Legislation.

IN France, as in England, the law establishes the liability of employers in the case of accidents to employees, and the former to protect themselves insure their workpeople. But for such insurance the employer would often be unable to meet his liabilities, and the injured workman would suffer in consequence. This, however, is no State insurance founded for the benefit of the community as a branch of social legislation. The insurance companies which undertake this work were brought into existence merely as speculations organised for the purpose of providing the highest possible dividends for their shareholders. As in England, in exchange for a fixed annual premium paid by the employers, they undertake to defray the employers' liabilities should an accident occur. This liability is established by the law of April, 1898, and amended by the laws of March 22nd, 1902, and March 31st, 1905. When an accident occurs the incapacity resulting entitles the victim to an allowance equal to half the wages such incapacity is likely to make him lose. If the victim dies his family is entitled to a small pension. Obviously it is in the interest of the insurance companies to meet these liabilities in the most parsimonious manner possible. There is here an acute conflict of interests which tends to defeat the object of the law. So much is this the case that the abolition of all such insurance companies is energetically demanded both by the organised working men and by the medical syndicates or unions.

In giving expression to the abuses and collecting evidence to prove that the complaints are fully justified none have been more active than Dr. Ch. Diverneresse. This evidence consists of testimony and documents, and some correspondence has been carefully photographed. Several of these photographs are now in my possession, and they clearly show the attitude and methods of certain insurance companies.

The Taxpayer Pays for the Insurance Companies.

Dr. Diverneresse explains the object of the insurance companies and then gives evidence to show to what a large extent this object is attained. The insurance companies seek to get medical men into their service on low terms. They offer a fee of 8 francs for every accident case visited, but nothing more. In these circumstances, the medical man has no motive to continue attending the patient and is glad to hand him over to the poor relief authorities who put him in the nearest municipal hospital where only 3 francs 50 centimes per day is charged for the patient. Thus, the insurance companies save their money at the expense of the taxpayer, who provides for the upkeep of the municipal hospitals. The next step is to bring to bear every kind of influence on the medical experts so that they may estimate the injury sustained at the lowest possible figure and thus reduce the amount of the damages that have to be paid. Thus the medical man employed by the insurance companies is often begged not to mention upon his certificate the fact that permanent injury is likely to result; for, unless this is done, the local tribunal cannot hold an inquiry into the circumstances of the accident. If there is no such inquiry there is no public discussion and the pension to be paid has to be settled personally with the victim. Instead of a public trial experts are appointed as arbiters, but every effort is taken by the companies to secure that these shall be favourably disposed towards the big employers and the insurance companies. Dr. Diverneresse has several letters showing that the companies actively interfere in these appointments. Here is the text of one of them:—

I have the honour of informing you that according to the new stipulations of the law of the 31st March, 1905, the magistrate of the —— District *has on our demand appointed you to examine* M. B——, victim of a labour accident which took place on the 15th November, 1905.

The Partiality of Experts.

Many cases are published giving the effect of these manœuvres, and it must be admitted that they do not redound to medical credit on first reading. But we have enough difficulty in England with regard to workmen's

insurance to make us careful of being too suspicious. Genuine differences of opinion must often occur. In one such case an expert known to favour the insurance companies but appointed by the local magistrate estimated as the result of an accident that the victim's leg was shortened by about 5 millimetres, and concluded that his wage-earning capacity had been impaired to the extent of 5 per cent. The tribunal, acting accordingly, fixed the annual pension to be paid at 63 francs. But the victim appealed against this decision. Three other experts agreed that the shortening of the leg amounted to 25 millimetres, and thereupon the court raised the pension to 382 francs. So often are such differences of opinion worked in France against the workmen, according to Dr. Diverneresse, that he advises them strongly not to present themselves before an expert unless accompanied by a medical man to watch over their interests.

The insurance companies, if on good terms with the employer, have other methods of avoiding the fulfilment of their obligations. A case is related of a workman who was injured, and the tribunal estimated that his earning capabilities had been permanently reduced in the proportion of 12 per cent. The pension allowed was based on this estimate. Thereupon the company proposed to buy up his rights by paying a sum down. This sum, of course, should have been calculated on the basis of the 12 per cent. The employer, however, threatened to discharge the workman if he did not accept a sum calculated on the basis of 8 per cent. Rather than lose his situation the workman consented thus to lose a third of the compensation to which he was entitled, but so that the President of the tribunal should authorise this reduction it was necessary to produce a medical certificate testifying that now the workman in question was suffering from incapacity equal to only 8 per cent. Before me is the photograph of the letter written on the paper of the insurance company, whose full name and address are printed on the top. The name of the doctor to whom it is addressed heads the letter. This is a literal translation of the letter:—

> We are going to send you one of our pensioners, named V——, with whom we have to come to terms for the purchase of his pension. The initial reduction was 12 per cent.; the new reduction will be 8 per cent. which we ask you to inscribe on the certificate which you will be so good as to deliver so as to enable us to come to terms.

This letter is signed by the agent of the company. It is neither more nor less than an order to estimate the damage done at 8 instead of 12 per cent. without the slightest regard to the facts of the case. In another letter, of which I have also the photographed copy, the medical man is not called upon to alter an estimate of damage done, on which there might conceivably be some difference of opinion, but he is asked to state in his certificate that the patient was cured on the 24th of the month instead of the 31st. It is urged that medical certificates given under such circumstances to oblige insurance companies are not in keeping with either science or conscience, and I am glad to believe that they are not given as frequently as they are demanded.

Pressure to Prevent the Free Choice of Medical Attendant.

The law, however, insists that the victim shall have the free choice of a medical attendant. But the companies strive by every means to prevent workmen exercising their legal right. On one side they attack and intimidate the workmen and on the other side they use much the same means against the medical practitioners. If the latter are sufficiently independent different and insidious methods of persecution may be directed against them—at least Dr. Diverneresse states that this is the case. The fact that a practitioner acquires some popularity among the working classes and is often consulted by injured workmen will be considered as a suspicious circumstance. It will be whispered around that at heart he must be an anarchist, a dangerous person, and the more wealthy inhabitants in the neighbourhood will be advised to consult someone who enjoys a better reputation in the ranks of polite society. A good case of this sort is described as occurring to a practitioner who attended most of the workmen engaged at some large works in the department of the Ardennes. The manager openly declared that he had forbidden his workpeople to call in the services of the practitioner in question when an accident occurred "because he had not fulfilled expectations in supporting the interests of the works." The interests of the works were to be supported in one instance by declaring that a patient had been cured before a certain date when this was absolutely false. Then when the independent practitioner refused to comply the manager of the works insisted that the medical fees for which his firm was responsible should be reduced by 25 per cent. This meant the trouble of legal proceedings, but the doctor won his case. After that the workmen were not only forbidden to call in this practitioner when an accident occurred but also in cases of ordinary sickness. All this was absolutely illegal, but it was done all the same.

Suggested Remedies.

Such are a few of the cases selected out of a great number to show the demoralising influence exercised by speculative insurance companies. There are more than 300,000 labour accidents in France during the course of a year. At least a quarter of these accidents necessitate the obtaining of a certificate from an expert. It will be seen at once that on the result very large sums of money are involved. The interest of the nation is not specially bound up in economising the employers' capital. The object of legislation on the employers' liability for accidents is to diminish the frequency of such accidents, and when they occur to prevent the pauperisation of the injured and their families. The State is interested in seeing that the injured receive the full amount to which they are entitled. The interest of the medical profession is that medical men shall not be influenced in their judgment by pressure brought to bear upon them either by the injured on one side or by the employers and the insurance companies on the other side. The best guarantee against pressure from the latter source is the free choice by the patient of his medical attendant. But in some places the medical practitioner is liable to persecution if he responds to such a call, and the workman on his side runs the risk of being discharged if he does not call in the medical practitioner pressed upon him. Thus is the law defeated and the injured workman defrauded. The honour of the medical profession is involved in this scandal. Fortunately, there are medical unions to take up the matter, force the question forward, and insist on the impartial fulfilment of the law. To secure this the experts consulted must be beyond all suspicion; they should not have any connexion whatsoever with insurance companies or industrial enterprises, and they should be appointed beforehand and not chosen by local magistrates after an accident has occurred. Above all, any attempt at intimidation or unfair pressure should be severely dealt with.

THE MEETING OF THE CANADIAN PUBLIC HEALTH ASSOCIATION IN MONTREAL.

(FROM OUR SPECIAL CORRESPONDENT.)

Opening Ceremony.

THE newly-formed Canadian Public Health Association held its first annual meeting in Montreal on Dec. 13th, 14th, and 15th, 1911. The Governor-General of Canada, His Royal Highness the DUKE of CONNAUGHT, became a Patron, and, accompanied by the Duchess of Connaught and the Princess Patricia, performed the opening ceremony in the Convocation Hall of the Royal Victoria College.

The Hon. R. L BORDEN, Premier of Canada, a Vice-Patron of the association, and the Hon. MARTIN BURRELL, Minister of Agriculture and a Vice-President, took part in the proceedings.

The meeting was presided over by Dr. T. W. STARKEY, President of the association, professor of hygiene at McGill University, to whose zeal much of the success of the arrangements was due. After a brief address of welcome to Their Royal Highnesses and an expression of the gratitude of the association to Lord Strathcoma, Dr. Starkey read the postscript of a letter from the Canadian High Commissioner, enclosing a cheque for $2500 (£500) for the use of the association.

The DUKE of CONNAUGHT, in an excellent speech, emphasised the need for the general public to take an intelligent interest in preventive medicine. He said: "Our idea is that what was good enough for the past generation is not good enough for the present, and to improve conditions we must teach the growing generation."

Mr. BORDEN laid stress on the fact that in the past the matter of public health in Canada had not received all the consideration it should have received, but he intimated that in the future the Federal Government would pursue a different policy in this respect.

Mr. BURRELL, Minister of Agriculture, made the announcement of the evening, to the effect that a national department of health would be created. "Speaking quite unofficially," he said, "I would say I believe the time has come when, even if it does not demand a portfolio, it should at least have a full-fledged department in the Federal Government."

Sir LOMER GOUIN, Premier of the province of Quebec, who spoke in French, also announced that the Government of the province contemplated taking forward steps with regard to sanitary matters. He said that the Government of Quebec had decided to extend its hygienic work by dividing Quebec into ten sanitary districts, an expert reporting directly to the Government for each district.

Brief addresses were also given by Dr. GUERIN, Mayor of Montreal, and by Dr. MONTIZAMBERT, of Ottawa.

Dr. MONTIZAMBERT, as the oldest sanitarian in Canada (having been appointed to an official post by Sir John MacDonald in 1866), in moving a vote of thanks to the Governor-General for opening the meeting and to the Duchess of Connaught and Princess Patricia for being present, recounted the history of sanitation in Canada.

Before leaving Victoria College the Duke and Duchess, with other guests, partook of supper in the dining-hall. It may be said that the whole proceedings passed off without a hitch, a fact which reflects great credit upon all those responsible for the arrangements.

A meeting inaugurated in such auspicious circumstances had a high ideal to reach, and so far as the serious business of the meeting was concerned its members rose to the occasion. The attendance was good, about 130 members being present, while the papers contributed were numerous and generally of a high standard. If one desired to be censorious, perhaps the criticism might be made that there was somewhat of a plethora of papers, more than 50 being contributed. This, however, certainly speaks well for the energy of those interested in health matters in all parts of the Dominion.

Papers Read.

In the first general session Colonel G. CARLETON JONES, M.D., M.R.C.S., Director-General, Medical Services, Department of Militia and Defence, Ottawa, read a paper on the Military Aspects of Sanitation, in which he pointed out that although Canada was not generally regarded as a military nation, a form of conscription was really in force, and that therefore military sanitation was of more than academic interest.

Dr. J. D. PAGE, of Quebec, dealt with medical inspection and the care of immigrants on shipboard. He said that the examination of immigrants on shipboard was largely perfunctory, and consequently more or less useless to the Canadian medical inspectors of immigrants. He pointed out that the law directed that ships' surgeons should examine immigrants carefully, but said they did not live up to this obligation. He urged that no one had better opportunities for judging of the physical and mental fitness of an immigrant than the ship's surgeon. The chief reason for this slackness on the part of ship's surgeons, according to Dr. Page, was that these were usually young men who came for a change and a cheap sea trip, and had had no training whatever in regard to the work they were supposed to perform on board ship. Of course, the fault for this state of affairs really lay with the shipowners, who would not give sufficient remuneration to attract able medical men. Dr. Page thought that if an initial salary of $1000 (£200) a year were offered an efficient class of medical men might be secured for immigrant ships. The speaker had spoken to shipowners on the subject, who had replied that so long as they could procure more men by far than they required at the present beggarly rate of wages, they saw no cause to offer superior inducements. Thus there would seem to be little hope of bettering the situation in this quarter, and some other means must be resorted to to remedy existing conditions in this respect.

Dr. P. H. BRYCE read an exceedingly able paper on the Conservation of Food by Cold, a vital subject in these days on this side of the Atlantic.

One of the most interesting sections of the meeting was that of the social workers. This might be termed the ladies' meeting, as the convener was Dr. GRACE RITCHIE ENGLAND, and most of the papers read were contributed by women. It can be asserted with truth that from all points of view these papers compared favourably with those read in the other sections, and from a purely literary standpoint they were generally superior.

The first paper read in this section, however, was by a man. Dr. GEORGE ADAMI, professor of pathology, McGill University, treated of the value of exhibitions as agents in the public health campaign. He made out a very good case for such means of popularising public health movements, and incidentally said: "The daily press to a greater and greater extent is becoming one of the most effective agents in making known the defects in conditions relating to the public health." Miss ETHEL HURLBATT, principal of the Royal Victoria College, read a paper on Work for Women as Sanitary Inspectors. She said that Canada was beginning to realise that the health and well-being of the individual involved that of the community, and that the latter was coming to see its duty in enforcing proper precautions for the care of individual lives. Miss Hurlbatt advised the employment of women sanitary inspectors in factories where women worked, as well as in many homes.

Dr. A. D. BLACKADER, professor of pharmacology and therapeutics at McGill University, discussed the important causes of high infantile mortality in large cities, and the influence exerted by milk depôts.

(To be concluded.)

BIRMINGHAM.

(FROM OUR OWN CORRESPONDENT.)

The General Hospital.

AT a meeting of the board of management on Jan. 5th a letter was read from Professor Robert Saundby resigning his post as honorary physician to the hospital. It was unanimously resolved:—

That the board, having received with great regret the resignation of Dr. Saundby, senior honorary physician, desire to record their high appreciation of the very able manner in which he has discharged his duties as honorary physician for the past 27 years, of the skill and attention he has devoted to the patients under his care, and of the interest he has taken in the welfare of the institution; that his resignation be accepted with great regret, that the post be declared vacant, and that steps be taken to fill the vacancy on Friday, Jan. 25th.

It was further resolved:—

That it be recommended at the next meeting of the governors that, in consideration of the eminent services rendered by Dr. Robert Saundby to the hospital during the past 36 years, he be appointed honorary consulting physician to the hospital.

A committee was appointed to consider what steps should be taken to commemorate Professor Saundby's services. Professor Saundby, who is the President of the British Medical Association, came to Birmingham in April, 1876, when he was appointed resident registrar and pathologist to the General Hospital. In November, 1877, he was made assistant physician, and in January, 1885, was elected honorary physician. He has thus been connected with the hospital for 36 years, and for several years has been senior physician. He is also professor of medicine in the Birmingham University, consulting physician to the Eye Hospital, and the representative of the University on the General Medical Council.

New Year Honour.

The conferment of knighthood upon Professor Bertram C. A. Windle has caused much satisfaction to his numerous friends in Birmingham, where for many years he was professor of anatomy and Dean of the medical school. Like Professor Saundby, he came to Birmingham as pathologist to the General Hospital, a post which has been successively occupied by many distinguished medical men in Birmingham and elsewhere.

Anterior Poliomyelitis.

The medical officer of health, Dr. J. Robertson, has ascertained that during 1911 there were 150 to 200 cases of anterior poliomyelitis in the city with a few deaths. In several families more than one case occurred. In October last the health committee passed a resolution ordering that the Infectious Diseases Notification Act should apply within the city for a period of two years to this disease. The resolution was submitted to the Local Government Board for approval and came into operation on Jan. 1st.

Jan 9th.

SCOTLAND.

(FROM OUR OWN CORRESPONDENTS.)

Queen Victoria's Jubilee Institute for Nurses.

THE report of the council of the Scottish branch of the Queen Victoria's Jubilee Institute for Nurses shows, as usual, an interesting record of growing work. The report refers especially to the loss sustained by the death of Dr. Joseph Bell, who had given valued services to the Scottish branch during the whole period of its existence. During the stage of initial organisation Dr. Bell had acted as vice-president of the provisional committee, and on the formation of an executive committee he was unanimously appointed chairman, the duties of which office he discharged with the utmost thoroughness until his last illness. In view of the increase in the work, the council has resolved to appoint a new committee to superintend the work done in the central training home, which included the nursing of the sick poor of Edinburgh. The office of honorary secretary of the Scottish branch has now been filled by the appointment of Lady Susan Gilmour. Thirty-six nurses have been trained in the central home during the year, while four have completed their training in Glasgow, two in Dundee, and two in Paisley. There are now 225 nursing associations affiliated to the Scottish branch of the institute, nine new branches having been affiliated during the year.

Legacy to Dundee Royal Infirmary.

At a meeting of the directors of the Dundee Royal Infirmary, held on Jan. 4th, it was intimated that the late Mrs. Euphemia Small or McGregor, widow, 3, Park-terrace, had by her settlement bequeathed the residue of her estate to the institution. It is expected that the infirmary will benefit to the extent of £900.

Montrose Asylum's New Charter.

A meeting of the Montrose Asylum board was held on Jan. 3rd, when the proposed new charter was again under discussion. At a previous meeting the asylum managers practically unanimously agreed that the appointment of auditor should be retained in the power of the board, but the representatives from Forfarshire and Kincardineshire parish councils and district lunacy boards, who initiated the scheme for representation, now informed the managers that if they insisted on a local instead of an official auditor being appointed the whole scheme might be wrecked. After considerable discussion it was resolved, by 12 votes to 5, that the auditor should be appointed by the board as heretofore, but that the appointment should be subject to the approval of the Secretary for Scotland.

Jan. 9th.

IRELAND.

(FROM OUR OWN CORRESPONDENTS.)

The Milk Commission.

THE *personnel* of the Vice-Regal Commission on Milk-supply has been changed by the resignation of Sir John Lentaigne, through stress of professional work, and the accession of Sir Stewart Woodhouse. The latter had a long experience as Local Government Board inspector, and subsequently as member of the General Prisons Board. It is unfortunate that the Commission does not include any medical officer of health experienced in the control of a milk-supply. Mr. T. W. Russell, M.P., Vice-President of the Department of Agriculture and Technical Instruction, gave important evidence a few days ago with regard both to the scarcity of milk in certain districts, and to the difficulty of preventing adulteration of milk and butter. As a remedy for the scarcity of milk he suggested that municipalities should purchase lands, to be run as dairy-farms, and so provide a public milk-supply. Some previous witnesses had suggested the use of goats' milk in districts where cows' milk could not be obtained. Mr. Russell pointed out that to provide sufficient milch goats they must be imported, and this could not be permitted because of the danger of introducing disease. He went on to give instances illustrating the difficulty of obtaining convictions and adequate penalties in the case of prosecution for adulteration or selling milk in an insanitary condition. In a recent case where it was proved that there was 25 per cent. of water in the butter a fine of 1*d.* was imposed! Fines of 10*s.* or £1 were frequently imposed by Dublin magistrates for adulteration of milk, but such penalties did no good. No punishment except imprisonment would cure this form of offence.

The Professorship of Surgery in the Royal College of Surgeons in Ireland.

Mr. William Stoker has, after many years' occupancy of the chair, resigned the professorship of surgery in the Royal College of Surgeons. Already there are several candidates in the field, including Mr. G. Jameson Johnston, surgeon to the Royal City of Dublin Hospital; Mr. William Taylor, surgeon to the Meath Hospital; and Mr. W. I. de C. Wheeler, surgeon to Mercer's Hospital.

The National University of Ireland.

Interesting changes have been made in the courses and regulations of the National University of Ireland for 1912–13. All information will be supplied from the University offices, 49, Merrion-square, Dublin (temporarily).

Vaccination Certificates.

A curious incident has occurred in the Celbridge union, where the Local Government Board has refused to sanction payment to a *locum tenens* on the ground that he does not possess a certificate in vaccination such as is prescribed by the Board. Up to a few years ago the Local Government Board recognised a certificate of instruction in vaccination given by any public vaccinator. A new rule was subsequently introduced stating that the Board would recognise only certificates granted by certain specified instructors, three or four in number. It appears that Mr. Knapp, the medical man affected in the Celbridge union, holds a certificate from a public vaccinator, but not from one recognised as giving certificates by the Local Government Board. The guardians apparently have no ground of complaint against Mr. Knapp, but they are in the difficulty that if they pay him they are liable to be surcharged. A newspaper report of the case added to the unpleasantness by referring to the lack of a "midwifery certificate" instead of a "vaccination certificate" as the cause of the trouble.

Medical Officership of the Pembroke Township.

Some controversy has arisen over the recent election of a superintendent medical officer of health of the Pembroke township. Contrary to the usual custom of public bodies in Ireland, voting was by ballot. An objection has been lodged with the Local Government Board on behalf of one of the defeated candidates. It is not yet known what action the Local Government Board will take.

Inspection of Belfast Workhouse.

Dr. E. C. Bigger and Mr. F. J. McCarthy, Local Government Board inspectors, have just reported on their inspection of the Belfast workhouse on Nov. 11th, 1911. They point out that the expenditure on out-door relief, which in 1905 was £620, has risen to £4,778 12*s.* for the year ending March 31st, 1911, and they urge the guardians to do everything in their power to keep their expenditure under this head within reasonable limits. If Whitechapel, with a large proportion of poor to the mass of the population, can reduce the numbers of those in receipt of out-door relief to 21, Belfast has no right to pay such a fabulous sum yearly. Every authority condemns this system which, in the opinion of the Royal Commission on the Poor-laws, merely "subsidises dirt, disease, and immorality." The guardians are also advised to introduce some labour test, which will ensure that able-bodied inmates—the "won't works" and the "workshys"—shall be compelled to do as much and as hard work as the ordinary unskilled labourer. The guardians are especially praised by the inspectors for their care of the consumptive poor. The White Abbey Sanatorium for Phthisis contains 265 beds, and is going to be enlarged by the erection of another pavilion, in order to carry out a much-needed improvement in classification at the Abbey Sanatorium.

Rathfriland Water-supply.

Rathfriland, one of the most important inland market towns of County Down, situated on a high hill, has decided to apply to the Local Government Board for sanction to a loan of £5000 for the formation of a water scheme from the Mourne mountains. Pure water is badly needed in the place, and the inhabitants are prepared to pay for it.

Jan. 9th.

PARIS.

(FROM OUR OWN CORRESPONDENT.)

The Limitation of Wine-shops in France.

FOR many years hygienists on all hands have been deploring the increasing growth of alcoholism, an increase due largely to the ever-increasing number of wine-shops. The matter is complicated politically, because the wine merchants wield considerable political influence, and, moreover, their syndicate is very powerful. But in certain parts of France, in spite of and above every other consideration, the ravages of alcoholism being frightful, the necessary measures have at last been taken to limit the number of places for the sale of drink. In accordance with a legal enactment, the Mayor of Rouen, after deliberation with the Municipal Council, regulated by the following decree, dated March 7th, 1906, the opening of wine-shops in the city of Rouen: "The opening or establishment of a new wine-shop, or the reopening of an old one provisionally closed, within a radius of 150 metres as the crow flies from places of worship, cemeteries, hospitals, primary schools, colleges, and other establishments of public instruction is forbidden." A review of the effects of this ordinance during its five years of existence has just been made, with the following result: In 1904, 66 places were opened; in 1905, 80; in 1906 (the date at which this ordinance came into operation), 39; in 1907, 15; in 1908, 16; while in the last two years the opening of new places had fallen by 75 per cent. of the figure reached before the municipal by-law, which clearly establishes the efficacy of the step taken by the mayor. All mayors, if they are willing, can take similar measures, and these might effect a like drop in the sale of alcoholic liquors.

Milk Powder in Infant Feeding.

The feeding of infants has occupied during late years a considerable place in the attention of hygienists and physicians. More than ever breast-feeding has been insisted on and with some success. But, nevertheless, it often happens that for various reasons the mother is unable to suckle her child herself. Under these circumstances, different methods of artificial feeding have been studied very carefully. At the Pædiatric Society M. Aviragnet, M. Bloch, M. Michel, and M. Dobiencourt recently related their experience with another mode of alimentation—the use of dry milk or powdered milk. This dry milk can be obtained, either by desiccation of milk *in vacuo* at a moderate temperature (95° C.) or by rapid heating in the open air (120° to 140° C.). These observers have used this powder of milk in a certain number of normal nurslings as well as in other nursing children having various kinds of digestive troubles. The results have been generally remarkable, whether the powdered milk has been given to complete an insufficient breast supply or as an exclusive method of artificial feeding. In gastric dyspepsia the vomiting has usually ceased on the use of the powdered milk in very concentrated solution. In a great number of cases of the intestinal form of dyspepsia, often accompanied by wasting, the dry milk has been perfectly borne, frequently better than any other aliment. Sometimes this milk has seemed to be the only food that could be tolerated by the child. Finally, in certain acute cases of a febrile or algid toxi-infectious type and in a case of chronic urticaria, the milk powder has shown itself to be much the least toxic form of nourishment.

A Clinic for Criminal Insanity.

The Minister of the Interior has decided on the creation of a laboratory of criminal anthropology, such as has been frequently asked for by Parliament, which will constitute a true Clinic of Criminal Insanity. A Commission has just been organised, of which the dean of the Faculty of Medicine, Professor Landouzy, is one of the members, to settle on practical conditions under which this clinic can be established at the Ministry of Justice.

Responsibility for Accident to a Hospital Nurse.

The Tribunal of the Seine has recently given judgment in an interesting case. A nurse of the Hôpital St. Louis, who entered the radio-therapeutic department under Dr. Fleig on August 17th, 1906, sustained a fall, on account of which she claimed an annuity of 1400 francs (£56) by way of damages. She claimed that from the time of her entry on radio-therapeutic work her health had become damaged; that the influence of the electric rays had given rise to burns on her hands and to nervous troubles; and that on Dec. 17th, 1906, she became syncopal and fell on the heating apparatus, seriously burning her face. As a consequence of this accident, she said, and notwithstanding five years' treatment, she has remained disfigured, and her sight grows weaker from day to day, so that all work has now become impossible to her. But after the pleadings and the summing-up the President gave judgment to the effect that everything tended to show that the nurse fell, not in consequence of a simple syncope, but in an epileptic crisis, as was testified to by witnesses; that this condition could not be attributed entirely to the clinic in which she was employed, and that experts had decided that, at most, all that could be admitted was that a prolonged stay in a room in which practically constantly one or more unprotected Crookes tubes were in action had favoured neuropathic troubles in a person already predisposed to them. The court therefore declared the Administration of Public Assistance not responsible for the accident, and refused the damages claimed.

The Congress of French Alienists and Neurologists.

The Twenty-second Congress of Alienists and Neurologists of France and the French-speaking Countries will take place at Tunis this year, the week before Easter, from April 1st to 7th. The President of the Congress will be Dr. Mabille, of Rochelle; the vice-president, Dr. Arnaud; and the general secretary, Dr. Porot, of Tunis. The three questions on the orders of the day will be: Perverted Instincts, the Nervous and Mental Troubles of Paludism, and the Assistance of the Insane in the Colonies.

Jan. 9th.

VIENNA.

(FROM OUR OWN CORRESPONDENT.)

Etiology of Goitre.

TWO recent meetings of the Vienna Gesellschaft der Aerzte were taken up mostly by a discussion on the interesting problem of the etiology of thyroid enlargement. In this country there are several localities where this pathological condition is very frequent; as, for instance, in Tyrol, in the southern parts of the Alps, in Styria, in the Balkan provinces of Austria (Bosnia and Herzegovina), and also in the largest cities which derive their water from mountainous districts. The military authorities are much interested in the question, for the proportion of recruits rejected on account of goitre is now larger than it used to be. In certain districts there is hardly a young man without a more or less marked enlargement of the thyroid gland. Investigations by Professor Wagner von Tauregg on the correlation between idiocy, cretinism, myxœdema, and goitre have placed it beyond doubt that the latter condition is on the increase, that its effects are becoming more marked in the population, and that treatment by thyroid extract is useful only in selected cases. A paper by Staff-Surgeon Taussig was read before the above-mentioned society, in which he argued that goitre was infectious, that infection took place only after prolonged exposure to the hypothetical pathogenic agent, and that the intestinal canal was the way of entry of this agent. He also expressed the opinion that idiocy could be directly transmitted in a similar manner, and he drew attention to the investigations instituted by him in Bosnia amongst the Turkish part of the population, whose mode of living was very favourable to such transmission. Dr. von Kutschera, of the Austrian Public Health Service, also asserted that researches carried on by him in Tyrol proved the contagiousness of goitre and its allied conditions; he believed that the infection attached itself to the interiors of houses occupied by cretins and to the clothing and bedding.[1] The views expressed by these two speakers were strongly opposed by Dr. Wagner, Dr. Frankl-Hochwart, and other believers in the toxic theory, according to which the toxic or organic pathogenic agent was conveyed by water. Dr. Graf, who also took part in the discussion, said that in some places the recruits were in the habit of drinking the water from certain springs, with the result that after about four

[1] See also THE LANCET, Nov. 11th, 1911, p. 1347.

weeks of this practice they showed a marked hypertrophy of the thyroid gland which caused their rejection by the recruiting authorities of the army. When this manœuvre was successful they drank the same water for a second period of four weeks, taking the precaution to boil it previously, and the goitre disappeared as readily as it came. Dr. Graf said that he was just now making observations with such "goitriferous" water, and he was inclined to believe that sterilisation of it by ultra-violet rays was sufficient to make it incapable of producing the effects in question. In Vienna there has been a marked increase in the prevalence of goitre since water derived from high mountain springs was brought into the city in 1870, and even since 1910 when new springs were added to the previous source of water-supply, more goitres seem to be observed. The preponderance of opinion in the discussion was to the effect that the hypothesis of organic water-borne infection was the most probable one, and that a thorough investigation of the problem was very necessary.

The Rettungsgesellschaft.

The Vienna Rettungsgesellschaft (First Aid Corps), which has served as a model for nearly all other institutions of this kind all over the continent, has celebrated the thirtieth anniversary of its creation. The increase of its importance may be judged by the following figures. It took 14 years before 50,000 casualties were recorded on its books, 100,000 were reached six years later, and in another eight years the number 200,000 was recorded. At present the well-known car and signal of the corps is a distinctive and respected feature of the street traffic of Vienna, and this private society is the recipient of generous gifts and bequests quite contrary to the usual custom in this country, where it is expected that all charitable institutes shall be provided for by the State. It is, therefore, very unfortunate that this corps is just now engaged in a conflict with the "Wirtschaftliche Organisation" (organisation for upholding the interests of the medical profession). This organisation tries to provide a uniformity of all contracts between medical men and public or private corporations on the basis that no medical man may be dismissed unless there are satisfactory reasons for it; that payment be made on a reasonable scale; that the medical men shall have as full rights and privileges as any other employee in any other undertaking; and that old-age pensions be granted to the medical staff on terms similar to those adopted in State employments. The Rettungsgesellschaft, however, had been sadly lacking on all such points, and the board of management refused to allow the "organisation" to interfere, whereupon the latter body thought fit to make the public acquainted with the divergence of opinions between the board and its medical staff. The celebration has therefore been somewhat marred by internal dissensions, and all true friends of both the Rettungsgesellschaft and the medical profession hope that an amicable arrangement will soon be arrived at.

Jan. 8th.

AUSTRALIA.

(FROM OUR OWN CORRESPONDENT.)

Sydney Hospital Centenary.

THE foundation-stone of the original Sydney Hospital was laid on Oct. 30th, 1811, by Governor Macquarie. A box containing gold and silver coin and a medallion of George III. was placed under the stone, and this was removed when the old building was demolished and is now in the possession of the hospital. The original buildings were in three blocks. One remains as part of the present Parliament House, one exists in the Royal Mint, and the present hospital occupies the site of the third which was the central block. The centenary celebrations were held on Oct. 30th, 1911, in the quadrangle of the hospital, which was covered in and lit by electric light for the occasion. The President welcomed the Lieutenant-Governor, the State Premier, and other visitors, who briefly spoke congratulatory sentiments.

Charge against Medical Man.

The elderly medical man, Dr. S. Peacock, who was recently sentenced to death for the murder of a young woman, and in whose case some law points were reserved, has obtained leave to appeal to the High Court for the direction of a new trial. The arguments before the State Full Court lasted more than a week and were mainly directed to whether the Chief Justice had misdirected the jury.

Venereal Disease.

The Queensland Branch of the British Medical Association recently discussed the question of venereal prophylaxis. Dr. E. S. Jackson, the President, moved:—

That this meeting of the Queensland Branch of the British Medical Association views with regret the repeal of the provisions of the Contagious Diseases Act as regards Brisbane, believing that even if the Act had not been stringently enforced it was yet productive of much good.

In a lengthy speech Dr. Jackson upheld his view and said that though there was plenty of syphilis in Brisbane, a large majority of sufferers could trace their infection to other States. The motion was seconded by the Hon. W. H. Taylor, M.D., M.L.C., who had a long acquaintance with the history of the Brisbane Act. An amendment was moved by Dr. A. Jefferis Turner to the effect that:—

This branch recognises the urgent necessity for legislative and administrative action on modern lines for the prevention of the spread of venereal diseases, such action to apply to both sexes and as far as possible to the whole State.

This was seconded by Dr. J. S. C. Elkington, chief medical officer of health, who thought there was something possible between a Contagious Diseases Act and no attempt at all, and indicated a preference for notification and segregation. After discussion the amendment was lost and Dr. Jackson's motion, with some unimportant modification, carried with only two dissentients.

Chair of Anthropology.

Dr. J. W. Barrett has offered £500 to the council of the Melbourne University as a nucleus of a fund for the endowment of a chair of anthropology in the University. There does not seem any immediate prospect of the scheme being developed as the council has no means of carrying it forward, but local interest in the subject has grown of late years under the direction of Professor R. S. A. Berry.

Personal Items.

Dr. Henry C. Maudsley has returned to Melbourne and resumed work as lecturer in medicine to the University.—Dr. W. Chisholm has resigned his position as surgeon to the Sydney Hospital and has been appointed to the honorary consulting staff.

Dec. 8th, 1911.

Obituary.

JOHN FRANCIS SUTHERLAND, M.D., C.M. EDIN., F.R.S.E.,

SENIOR DEPUTY COMMISSIONER IN LUNACY FOR SCOTLAND.

Dr. J. F. Sutherland died at his residence in Tain on Dec. 30th, 1911, as we stated last week. He was a native of Caithness and was born at Lybster in 1854. He received his medical education at the Universities of Edinburgh, Glasgow, and Paris. At Edinburgh he took the M.B. and C.M. degrees in 1878 and two years later the M.D. degree, obtaining a gold medal for his thesis. At Glasgow University he was a pupil of Lord Lister, who spoke of him as "a very distinguished member of my class," and in after years wrote: "He has laboured assiduously at the subjects of hygiene and the welfare of the insane, and the services which he has rendered have been recognised both at home and abroad as of very high order." Subsequently Dr. Sutherland went to Paris, and after holding the position of resident physician at the Hertford British Hospital returned to England and was for some years engaged in general practice. He then entered the Civil Service, and was appointed medical officer to H.M. Prison, Glasgow, by Sir William Harcourt (then the Secretary for Scotland), which position he held from 1880 to 1885. In 1887 the Marquis of Lothian appointed him consulting medical officer to the General Prison, Barlinnie. During his tenure of office at the Glasgow Prison he devoted himself actively to the study of criminology and allied subjects, and much of the modern penal reform may be attributed to his foresight and advocacy.

In 1895, on the recommendation of Sir George O. Trevelyan, he was appointed a Deputy Commissioner in

Lunacy for Scotland, and this position he held at the time of his death. In the year previous to his appointment as Deputy Commissioner he acted as secretary and member of the Departmental Committee on Habitual Offenders, Inebriates, Vagrants, and Juvenile Delinquents. The Lord Provost, Sir James Bell, who received this committee in the Municipal Buildings of Glasgow, paid a tribute to the continuous efforts of Dr. Sutherland in putting forward the case for habitual offenders of all classes in such a way that the Government could treat the "crying evil of the day" as a disease.

Dr. Sutherland attained a European reputation by his contributions to the literature of hygiene, insanity, and inebriety, and he was connected with many learned societies. He was an honorary member of the Medico-Legal Society of New York and of the Psychological Society of Moscow, and Foreign Associate of the Psychological Society of Paris. He was a Fellow of the Royal Society of Edinburgh and of the Statistical Society. He was honorary secretary of the Twelfth International Medical Congress at Moscow, honorary President of the Medico-Legal Section of the Thirteenth International Medical Congress at Paris, and secretary of the Fourteenth International Congress at Madrid. His publications include "Hospitals, their History, Construction, and Hygiene," which formed the subject of his M.D. Thesis, and which won marked attention by its clear-sighted policy at a time when hospital administration left something to be desired. "The Insane in Private Dwellings" was another of his thoughtful contributions to an important subject, as was also "Recidivism: Habitual Criminality and Habitual Petty Delinquency; a Problem in Sociology, Psycho-pathology, and Criminology." This suggestive book we reviewed in our issue of Feb. 13th, 1909, p. 468. "The Treatment of Dipsomaniacs" was the title of another of his books, and his well-known "Ambulance Vade Mecum" has gone through 30 editions, another being now in the press. He was also the author of the article on Lunacy in the Encyclopædia Medica, and contributed many articles to English and foreign journals. In 1892 he read a paper before the British Association at Edinburgh on Crime from an Economical, Statistical, and Social Standpoint, and when the British Association met in Glasgow in 1901 he contributed to the Economic Section an elaborate paper with statistical tables on the growth and geographical distribution of lunacy in Scotland.

Dr. Sutherland was a man of keen observation and marked energy. In order to make himself thoroughly acquainted with the management, construction, and sanitation of prisons, asylums, and hospitals he visited the principal cities of Europe and America. In the social and corporate life of Glasgow Dr. Sutherland was actively interested, and he assisted in the formation of the Association for Improving the Social Condition of the People. He was a deacon in the Well Park Free Church and was vice-president of the West of Scotland Free Education League. On his appointment as Deputy Commissioner, and before leaving for Edinburgh, he was entertained by the citizens of Glasgow to a complimentary dinner, when the Lord Provost paid a high tribute to his qualities. His work as Deputy Commissioner in Lunacy necessitated his travelling into almost every part of Scotland, and loving as he did an open-air life he was able to indulge in his favourite recreations of shooting and fishing.

He leaves a widow and family, his son, Dr. Halliday G. Sutherland, being well known as an authority on tuberculosis.

SOPHIA JEX-BLAKE, M.D. BERNE, M.R.C.P. IREL.,

LATE PHYSICIAN, EDINBURGH HOSPITAL AND DISPENSARY FOR WOMEN AND CHILDREN, ETC.

WITH the death of Dr. Sophia Jex-Blake, which took place at her home, Windydene, Mark Cross, Sussex, on Jan. 7th, a prominent personage has disappeared from the ranks of the British medical profession.

Sophia Jex-Blake, daughter of Thomas Jex-Blake, Proctor of Doctors' Commons, was born at Brighton in January, 1840. Intending at first to devote herself to an educational career, she became in 1858 mathematical tutor at Queen's College, London, a post which she occupied until 1861. She then undertook a tour of investigation into conditions relating to the education of women in various countries, and after traversing the continent she proceeded to America to continue her investigations there. While in America she attended the first course of lectures delivered by Dr. Elizabeth Blackwell, the pioneer American woman physician, at the New York Infirmary and College for Women.[1] Resolving to devote herself to medicine, in 1866 she commenced medical studies at Boston. In 1868 she returned to England and in the following year applied for permission to matriculate in medicine at the University of London, only to learn that the charter of that University had been so framed as to exclude women from its medical curriculum. Nothing daunted she went to Edinburgh, where, after meeting with a rebuff, she finally succeeded, through associating herself with several other ladies pursuing the same end, in getting the University to adopt regulations permitting the education of women in medicine in classes apart from the male students. After six months' uninterrupted study, however, considerable hostility was encountered, and this developed into serious persecution at the hands of the male students on their applying for permission to study clinical medicine in the Edinburgh Royal Infirmary. This hostility continued with such increasing virulence that in 1871 a regulation was passed by the Surgeons' Hall of Edinburgh which rendered impossible the attendance of women on its courses, in spite of energetic public protests to the contrary, and the University Senatus declined to intervene on their behalf. It is true that in January, 1872, the University offered to grant certificates of proficiency to women, but these would not have been registrable diplomas under the Medical Act, and consequently were useless as an avenue to the practice of medicine. An action was then brought against the University Senatus to compel it to allow the women students to finish their education and to present themselves for examination for a degree in medicine, and judgment went in their favour. This decision, however, was reversed by a bare majority of the whole Court of Appeal, the ground being taken that the admission of women to the study of medicine was illegal *ab initio*. The labours and expense of Miss Jex-Blake and her friends were brought to nothing, and they were saddled with costs. As further struggle in Edinburgh seemed hopeless, Miss Jex-Blake came to London in 1874, and took a prominent part in founding the London School of Medicine for Women. This institution was opened in October of that year, the privilege of attendance at the Royal Free Hospital being associated with it, and here her studies were completed. But even so, the difficulty of graduation faced her, and she had to go abroad to Berne, in Switzerland, in 1877, to take her degree of M.D. But her valiant championship of the rights of women in medicine had in the meantime aroused great sympathy for her and her cause, with the result that a Parliamentary agitation had caused the passage in 1876 of an Act to enable British medical qualifying bodies to open their doors to women, and later in the year of her graduation at Berne she was enabled to take the opportunity afforded through the acceptance of the Act by the King and Queen's College of Physicians of Ireland to obtain a British diploma as Licentiate and Licentiate in Midwifery of the College. Thus, after upwards of ten years' struggle against perpetually recurring obstacles she finally found herself able to register as a medical practitioner. In 1878 she settled in practice in Edinburgh, the scene of her former conflicts, where she established a dispensary for women and children, which developed later (1885) into a cottage hospital, now the Edinburgh Hospital and Dispensary for Women and Children. In 1886 the Edinburgh School of Medicine for Women was established by her, and she became its dean and lecturer on midwifery. The school was finally recognised as qualifying for graduation by the University in 1894. Dr. Jex-Blake continued in practice in Edinburgh until 1899, when she retired to spend her closing years in her native county of Sussex.

Among her literary works may be named her graduation thesis on "Puerperal Fever," "The Care of Infants," which reached its second edition in 1903, and two books respectively on "American Schools and Colleges" (1867) and "Medical Women" (second edition in 1886). She contributed papers and articles on the Medical Education of Women (Transactions of the Social Science Congress, Norwich, 1873, and a report on the same subject to the Chicago Conference in 1893), Medical Women (*Nineteenth Century*, 1887), and Medical Women in Fiction (ibid., 1893).

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[1] Dr. Elizabeth Blackwell died in May, 1911, and an account of her work is given in THE LANCET of June 11th, 1911, p. 1657.

A MEETING OF WEST LONDON MEDICAL MEN.

A MEETING of medical practitioners residing in the area covered by the Chelsea and Kensington divisions of the British Medical Association was held in the Hammersmith Town-hall on Tuesday afternoon, Jan. 9th. Dr. F. J. SMITH was in the chair, and there was a good attendance. The declared aim of the meeting was to inaugurate a local Reform Committee within the Chelsea and Kensington divisions, and thence to spread the movement throughout all the divisions of the British Medical Association.

The functions of the proposed Reform Committee were defined by the promoters of the meeting in the following terms:—

1.—The objects of the committee shall be to secure the promotion and the passage of an Act of Parliament amending the National Insurance Act, 1911, in such a manner as to safeguard the interests of the medical profession as laid down in the "Six Point Programme" of the British Medical Association, and to carry out such reforms in the organisation and officers of the Association as may be necessary to achieve this end.

2.—Membership of the committee shall be open to all such registered medical practitioners as are (1) members of the British Medical Association; (2) eligible for membership of the British Medical Association and have signified their intention in writing to become members of the British Medical Association.

3.—Every member of the committee shall pledge himself to decline to accept medical service under the National Insurance Act, 1911, until it is amended in the manner laid down in paragraph 1.

4.—The subscription to the committee shall be the sum of 5*s.* per annum; such subscription shall be paid at such time as application for membership is made and upon the first day of January in each year for so long as necessary.

The CHAIRMAN opened the proceedings with a temperate statement of the case for organised reform. He argued that if the future inevitable negotiations were left by the profession in the same hands as hitherto there was grave danger of a second failure, because the same motives would be at work. He disclaimed any hostility to the British Medical Association; their quarrel was with the Council, whose attitude towards the measure they disapproved of. Dr. Smith supported his case by references to past events and by quotations from documents issued by the leaders of the Association. He urged that every legitimate endeavour should be made to get rid of those members of the Council who approved of the Act, so that the Council might truly represent the wishes of the profession. He read a letter from Dr. Buttar, chairman of the Kensington division, to the effect that the proper way to secure reform was by calling special meetings of the various divisions. Dr. Smith claimed that, although that was the correct constitutional course, in the urgency of the situation it seemed necessary to undertake some preliminary work of the kind they had attempted. They were now in a stronger position for requisitioning divisional meetings.

After Mr. P. C. RAIMENT (honorary secretary of the meeting) had given reasons for not waiting to see whether the regulations to be drafted by the Commissioners were acceptable to the profession, Mr. M. TOWNSEND proposed the following resolution in an effective speech:—

That this meeting of medical practitioners in the Kensington and Chelsea divisions of the British Medical Association, being profoundly dissatisfied with the recent decision of the Council of the British Medical Association in regard to the position of the medical profession under the Act, cordially approves of the proposal to form a Reform Committee of the British Medical Association on the lines suggested, and pledges itself to use its best interests to further the movement among all the divisions of the Association.

This was seconded by Mr. W. S. LEE.

Dr. G. J. CRAWFORD THOMSON, while strongly opposing the Act, advised against the premature formation of a new organisation which might still further spread disunion in the profession. His words created a considerable impression, although there was some dissent from various parts of the audience.

Mr. D. A. O'SULLIVAN also vigorously protested against the institution of a Reform Committee.

Dr. H. BECKETT-OVERY defended the action of the Council and warned the meeting against the consequences of forcibly turning them out.

The resolution when at length put to the vote was carried by a large majority, 11 voting against it.

A second resolution, proposed by Mr. E. W. LEWIS and seconded by Mr. W. KINGDON, was as follows:—

That pending the formation of the Central Executive, this meeting instructs the Provisional Executive to act as the Central Executive and to do all such acts and things as they may consider necessary to advance the principles already enunciated, and gives them power to co-opt members.

This was carried, and a third resolution, proposed by Mr. C. E. A. HUDDART, seconded by Dr. W. CULVER JAMES, empowering the election of temporary honorary secretaries for the two local divisions, was also agreed to. A vote of thanks to the Chairman was passed with acclamation.

The executive of the Reform Committee will have met before we go to press. It is their intention to draw up a manifesto stating the objects and methods to be adopted by the Committee, and this, we learn, will be issued to the daily press.

Medical News.

UNIVERSITY OF OXFORD.—The following candidates have been successful in the undermentioned examinations:—

FIRST B.M. EXAMINATION.

Organic Chemistry.—E. W. Bowell, J. M. H. Hardman, W. Champneys, G. R. Cowie, G. Donald, S. C. Dyke, G. I. Evans, G. T. Gilmette, F. G. Hobson, T. L. Ormerod, G. Perkins, O. S. Phillips, A. H. Plummer, S. S. L. Steyn, S. C. Varley, J. P. S. Walker, and A. L. Watts.

Human Anatomy and Human Physiology.—J. D. Batt, L. R. Broster, C. M. Burrell, G. Cranstoun, L. Gameson, F. C. Gladstone, C. W. B. Littlejohn, G. P. Selby, and J. F. West.

SECOND B.M. EXAMINATION.

Materia Medica and Pharmacology.—W. H. Bleaden, A. L. Pearce Gould, D. B. I. Hallett, A. Jackson, and G. Stanger.

Pathology.—G. E. Beaumont, G. W. Carte, W. A. Cooke, W. J. Hart, S. Hibbert, A. Juett, W. R. Reynell, E. Scott, P. T. Spencer-Phillips, and E. H. Udall.

Forensic Medicine and Public Health.—W. H. Bleaden, C. H. Budd, N. G. Chavasse, T. B. Heaton, D. P. MacDonald, E. G. Martin, W. J. Oliver, W. J. Pearson, S. S. Strahan, G. H. Varley, W. E. Waller, and J. A. Wood.

Medicine, Surgery, Midwifery.—C. F. Beevor, W. H. Bleaden, P. H. C. Fowell, T. B. Heaton, W. J. Oliver, W. J. Pearson, H. W. Scott-Wilson, S. S. Strahan, C. J. G. Taylor, and W. E. Waller.

The following degrees have been conferred:—

D.M.—H. C. G. Semon.

B.M. and B.Ch.—J. A. Noble, W. J. Pearson, C. J. G. Taylor, W. J. Oliver, W. W. Wagstaffe, W. H. Bleaden, and T. B. Heaton.

At a meeting of the Board of Faculty of Medicine held on Dec. 9th, 1911, the following resolution was passed:—

That the Radcliffe Infirmary, Oxford, be a hospital approved by the Board of Faculty of Medicine for carrying on post-mortem work by students, provided that no student be signed up for this course unless he has (*a*) passed the First B.M. Examination or has taken the Final Honour School of Physiology; (*b*) personally taken part in the actual performance of not less than ten post-mortem examinations; (*c*) regularly attended post-mortem examinations at the Radcliffe Infirmary during not less than two full terms.

EXAMINING BOARD IN ENGLAND BY THE ROYAL COLLEGES OF PHYSICIANS OF LONDON AND SURGEONS OF ENGLAND.—The following are the names of the candidates who were approved at the First Professional Examination held on Jan. 2nd, 3rd, 4th, and 5th in the subjects specified:—

Chemistry and Physics.—Thomas Burton Bailey, Cambridge; John Leycester Dudley Buxton, University College; Henry George Richmond Canning, Portsmouth Grammar School; Oliver Francis Conoley, London Hospital; Frank Barwell Matthews, Middlesex Hospital; Ralph George Mayer, Guy's Hospital; Reginald Stanley Millar, Guy's Hospital; Arthur Llewellyn Spencer Payne, Simon Langton School, Canterbury; Trefor Hughes Rhys, University College, Cardiff; Edwin John Goswycke Sargent, St. Bartholomew's Hospital; and Robert Ockleston Townend, London Hospital.

Chemistry.—Henry Searle Baker, St. Bartholomew's Hospital; Gideon Albertyn Beyers, St. Bartholomew's Hospital; Edwin Alfred Clegg, Middlesex Hospital; Leonard Henry Dardier, London Hospital; John Turnbull Thomson Forbes, Guy's Hospital; William Vincent Gabe, Middlesex Hospital; Wilhelm Otto Holst, Middlesex Hospital; Henry David Llewellin Jones, St. Mary's Hospital; Theodore Louis Kan, King's College; Guy Kinneir, St. Bartholomew's Hospital; William Ulic Desmond Longford, St. Bartholomew's Hospital; Rupert Idris Rhys, University College, Cardiff; George Cuthbert Robinson, St. Thomas's Hospital; George William Wheldon, Guy's Hospital; and Harold Ernest Poerpoint York, St. Bartholomew's Hospital.

Physics.—Reginald George Joseph Charlesworth, Charing Cross Hospital; David MacMurray Dickson, St. Thomas's Hospital; Claude Henry Fischel, Middlesex Hospital; Reginald Fitzroy Jarrett, London Hospital; Roy Dyson Langdale-Kelham, University College; Frederick Gilbert Laughton Scott, Oxford University; Mian Mohammad Shaffi, London Hospital; Charles Montague Slaughter, St. Thomas's Hospital; and Arthur Sunderland, Charing Cross Hospital.

Biology.—Douglas Harris Anthony, St. Mary's Hospital; Noel Arthur Hamilton Barlow, Guy's Hospital; Antoun Bishara, Cairo and St. Thomas's Hospital; Leslie Graham Blackmore, Middlesex Hospital; George Lambert Cutts, Guy's Hospital; Gauri Dayal, Bombay and Manchester Universities; Alfred Beresford Dummere, London Hospital; John Henry Cox Eglington, Bristol University; John Turnbull Thomson Forbes, Otago University and Guy's Hospital; William Norman Harrison, St. Mary's Hospital; Charles Gordon Hooper, King's College; Reginald Fitzroy Jarrett, London Hospital; Charles Hanmer Jenkins, London Hospital; Henry David Llewellin Jones, St. Mary's Hospital; Paul Ellis Rustat Kirby, Brighton Technical School; Eldon Munro Litchfield, New Zealand University and Guy's Hospital; Reginald Stanley Millar, Guy's Hospital; Sadek Girgis Moftah, Cairo and London Hospital; Lionel Watson Moore, Guy's Hospital; George Vaughan Richards, Guy's Hospital; Edwin John Goswycke Sargent, St. Bartholomew's Hospital; Ram Singha, Punjab University and London Hospital; Eric Lionel Stephenson, London Hospital; Ernest Wayte Terry, Manchester University; Robert Ockleston Townend, London Hospital; Cecil Pembrey Grey Wakeley, King's College; and Henry George Watters, London Hospital.

ROYAL COLLEGE OF SURGEONS OF ENGLAND.—At the Preliminary Science Examination for the Licence in Dental Surgery on Jan. 2nd, 4th, and 5th the following candidates were approved in the subjects indicated:—

Chemistry and Physics.—Lawrence Barnard Carlton, Birmingham University; Louis Edmund Claremont, Royal Dental Hospital; Donald Clewer, Brighton Technical College; William Edwin Dodd, Wandsworth Technical Institute; Herbert Reginald Evans, Royal Dental Hospital; Norman Leigh Evans, Manchester University; Gerald Mackenzie Hickley, Westminster Hospital and King's College; Kenneth Fergus McAlpin, Wandsworth Technical Institute; Joshua Laurence Oates, Guy's Hospital; Herbert Percy Parkes, Guy's Hospital; Reginald Jack Pickett, Guy's Hospital; Maurice Oliver Simpson, Birkbeck College and St. Paul's School; and Marjorie Jane White, Bristol University.

Chemistry.—Frederick James Arbery, Charing Cross and Royal Dental Hospitals; Harry Edward Attkins, Birkbeck College; Kenneth Charles Brough, Guy's Hospital; Ellis Gardner Browne, Royal Albert Memorial College, Exeter; Stephen Alphonsus McCormack, Queen's College, Belfast; Edgar William Smith, Polytechnic Institute; Arthur Herbert Virgin, Bristol University; and Frank Edward Welton, Municipal Technical College, Hull.

Physics.—Harold Beddoes, Birmingham University; Frank Briggs Cullen, University College, Nottingham; Edmund Dinsmore, Polytechnic Institute and Charing Cross Hospital; Maurice George Henry, Guy's Hospital; Joseph James Lackett Hollington, Brighton Technical College; Edgar Clarence Lewis, Guy's Hospital; Fairman John Ordish, Guy's Hospital; Tom Geoffrey Melsome Parker, Middlesex Hospital; and Willem Jacobus Rousseau Viljoen, Guy's Hospital.

UNIVERSITY OF BIRMINGHAM: FACULTY OF MEDICINE.—The following is the list of successful candidates at examinations held in December, 1911:—

Degrees of Bachelor of Medicine and Bachelor of Surgery (Final).—Class II.: James Henry Bampton, Robert Baxendell Coleman, Christopher Charles Cole Court, and Percy Alfred Newton.

Diploma in Dental Surgery (Final).—John Jessop and Edgar George Jones.

Third Examination for the Diploma in Dental Surgery (Anatomy and Physiology, and Dental Anatomy and Dental Histology).—Percy Ashton (Anatomy, Physiology).

First Examination for the Diploma in Dental Surgery (completed the Examination).—Harold Gordon Stewart Thornton.

ROYAL MICROSCOPICAL SOCIETY.—At a meeting held on Dec. 20th, 1911, Mr. H. G. Plimmer, the President, being in the chair, Mr. Rousselet described a reflecting microscope by John Cuthbert, which had been presented to the society by the committee of the Quekett Microscopical Club. Mr. Rousselet traced the history of the reflecting microscope from 1672, when Isaac Newton first suggested its construction to the Royal Society, down to 1827–8 when Cuthbert, at the suggestion of Dr. Goring, produced the design exhibited. An address of much physiological interest was then delivered by Dr. F. Shillington Scales. Taking for his subject the Photomicrography of the Electrical Reaction of the Heart, he said at the outset that the multiplicity of details and precautions requiring attention in this method of observation would probably prevent it from coming into general use for clinical purposes, and that it would not supersede auscultation, percussion, blood counts, blood pressure records, and skiagraphy. The physiological basis of the method was the fact that in muscular contraction the portion A undergoing contraction was at a higher electrical potential than the relaxed portion B, and there was deflection of a galvanometer brought into a circuit uniting two such portions of a muscle. When the contraction passed from A to B the potential of B exceeded that of A, and in the galvanometer there was now a deflection in the opposite direction. These minute differences of potential could only be detected by Einthoven's string galvanometer, an instrument of the moving coil type in which the ordinary moving coil was replaced by the "string"—a quartz fibre 2 or 3μ in diameter and coated with silver to render it a conductor of electricity. The indications of the galvanometer were recorded by the movement of a spot of light reflected from the instrument, the adjustment used by Dr. Scales being such that a deflection of one centimetre corresponded to a difference of potential equal to one millivolt. The electrodes forming the galvanometer circuit are not applied to the body in the neighbourhood of the heart. They may be in many positions, but to facilitate comparison of results three principal "leads" have been agreed on—namely, from the right hand to the left hand, from the right hand to the left foot, and from the left hand to the left foot. In the case of the human subject the individual is not in any way disturbed as he lies in bed. The electrical connexions are made by metal plates applied to the above-mentioned regions, and wires attached to these plates convey the current to the galvanometer, which need not be in the same building as the patient, but may be in a distant place if the necessary wires are provided. Cardiograms representing a variety of organic lesions of the heart were shown as lantern pictures; one of them was remarkable from the fact that it indicated the existence of ventricular fibrillation, and Dr. Scales was able to predict the imminent death of the patient from the movements of the galvanometer observed in a building at a considerable distance. Many cardiograms were also exhibited showing the effects produced by various drugs on the heart of the lower animals, including the action of muscarine and adrenalin in the frog, and adrenalin, pilocarpine, atropine, chloral hydrate, chloroform, and squill in the cat.

THE BEIT FOUNDATION FOR MEDICAL RESEARCH.—At a recent meeting of the trustees of the Beit Memorial Fellowships for Medical Research the following were elected to Fellowships: P. G. E. Bayou, doctor of medicine in the University of Würzburg, late medical officer for sleeping sickness investigations in Uganda. Proposed research: Investigation on the streptothrix stages of various acid-fast germs (to be carried out at the Lister Institute and, if possible, at a leper camp). E. V. Cooper, B.Sc. Lond., Jenner Memorial Research Scholar. Proposed research: Investigation of the protective and curative properties of selected foodstuffs and other substances against beri-beri (to be carried out at the Lister Institute). Elizabeth T. Fraser, M.B., Ch.B. Glasg., assistant bacteriologist to the Glasgow Royal Infirmary. Proposed research: Investigation of the value of the complement fixation test in tuberculosis as a guide to diagnosis and treatment (to be carried out at the laboratories of the Royal Infirmary, Glasgow). G. Graham, M.B. Cantab., late house physician at St. Bartholomew's Hospital. Proposed research: Metabolism in health and disease (to be carried out at St. Bartholomew's Hospital and at Munich). J. A. Gunn, M.D., D.Sc. Edin., F.R.S.E., second assistant in materia medica department of the University of Edinburgh. Proposed research: Investigation of the toxicity and trypanocidal action of arsen-lecithide, of the action of hormaline on the uterus as a possible substitute for ergot, and of natural immunity to certain glucosides (to be carried out at University College, London). W. H. Harvey, M.D. Toronto, Cambridge University. Proposed research: Investigation of the pathological condition of kidneys brought about by products of putrefaction in alimentary canal (to be carried out in the Pharmacological Laboratory of the University of Cambridge). J. L. Jona, M.B. Melbourne, D.Sc. Adelaide, assistant lecturer and demonstrator in physiology in the University of Melbourne. Proposed research: Investigation of the toxæmias attendant on pregnancy and childbirth (to be carried out at the Lister Institute). R. N. Norris, M.Sc. Manchester, engaged in research work at Manchester. Proposed research: Investigation of the formation and metabolism of glycogen in the organism and its bearing on diabetes (to be carried out at the Lister Institute). C. H. O'Donoghue, B.Sc. Lond., assistant to Jodrell Professor of Zoology at University College, London. Proposed research: Development, morphology and physiology of mammary apparatus (to be carried out at University College, London). C. C. Twort, M.B., Ch.B. Aberd., research worker at the Brown Institution and at the Pasteur Institute. Proposed research: Investigation of the relation of immunity reactions in Johne's disease of cattle to leprosy, and to human, bovine, and avian tuberculosis (to be carried out at the Brown Institution). Each fellowship is of the annual value of £250, and the usual tenure is for three years with a possible extension of time in exceptional cases of an additional twelve months.

A dinner under the auspices of the Joint Committee of Medical Officers Associations, consisting of representatives from the following associations and societies—Certifying Factory Surgeons, Metropolitan Water Board Surgeons, Medical Officers of Health, Police Surgeons, Poor Law Medical Officers, Postal Medical Officers, and Public Vaccinators—will be held at the Holborn Restaurant on Friday, Jan. 19th, at 7 30 for 8 P.M., with Mr. W. G. Bott in the chair. Tickets 5*s*. 6*d*., exclusive of wine. Members of the constituent associations willing to attend are requested to send their names to the honorary secretary, Mr. D. A. Belilios, 109, Queen's-road, Wimbledon.

COLONIAL MEDICAL SERVICES.—*West African Medical Staff:* Dr. J. G. Copland and Dr. O. G. F. Luhn, medical officers, Southern Nigeria, have resigned; Dr. A. Bremner, medical officer, Northern Nigeria, has been transferred to Sierra Leone; and the following appointments to the staff have been notified: Dr. W. I. Martyn-Clark and Dr. E. J. Wyler (Southern Nigeria). *Other Colonies and Protectorates:* Dr. W. Gilfillan has been selected for appointment as assistant medical superintendent of the Lunatic Asylum, Trinidad; Mr. E. H. Smith has been selected for appointment as supernumerary surgeon on the medical staff, Trinidad; Dr. W. H. C. Patrick and Dr. J. H. Cooke have been selected for appointment as district medical officers in Cyprus; Mr. J. G. Morgan has been selected for appointment as medical officer in Nyasaland; Mr. T. S. Davies has been selected for appointment as supernumerary medical officer in the Leeward Islands; and Dr. E. K. Lomas has been selected for appointment as medical officer in the Straits Settlements.

DONATIONS AND BEQUESTS.—The Chelsea Hospital for Women has received £250 from the executors of the late Mrs. Barnato, given under the exercise of their discretionary powers.—The After-Care Association for Poor Persons Discharged Recovered from Asylums for the Insane, Church House, Westminster, has received donations of £20 from the Clothworkers' Company and £10 10*s*. from the Skinners' Company.—Sir Charles Gold has given a donation of £1000 to the Bishops Stortford Hospital as a memorial to the late Lady Gold, who was a native of the town of Bishops Stortford.—The executors of the late Mrs. C. M. Barnato have made a grant of £1000 to the special ward for women and children at the Middlesex Hospital.—The late Mr. Isaac Gilman, of Warrington, has left by will £1000 each to the Warrington Infirmary, the Warrington District Nursing Association, and the Manchester Royal Infirmary, free of duty. On the death of his cousin and sister-in-law, the Warrington Infirmary will receive £2000 and the Altrincham Provident Dispensary and Hospital £1000.

LITERARY INTELLIGENCE.—Messrs. J. and A. Churchill have in the press a work on "Microbiology for Agricultural and Domestic Science Students," by various contributors. It is edited by Charles E. Marshall, professor of bacteriology and hygiene in the Michigan Agricultural College. Other books which will shortly be issued by this firm are: "Diseases of the Stomach, with Special Reference to Treatment," by Charles D. Aaron, Sc.D., M.D., professor of gastro-enterology and adjunct professor of dietetics in the Detroit College of Medicine; "Who's Who in Science, 1912," edited by H. H. Stephenson—an international biographical directory of the world's leading scientists; and "The Annual Tables of Constants and Numerical Data: Chemical, Physical, and Technological," under the authority of the International Congress of Applied Chemistry. The tables are intended to contain all the numerical data likely to be of interest in connexion with chemistry, physics, and allied sciences to be found in the most recent literature.

HENRY SAXON SNELL PRIZE.—The Henry Saxon Snell Prize, which was founded to encourage improvements in the construction or adaptation of sanitary appliances by a legacy left by the late Henry Saxon Snell, will be offered in the year 1912 by the Royal Sanitary Institute for an essay on "Suggestions for Improvements in the Ventilating, Lighting, Heating, and Water-supply Appliances and Fittings for an Operating Room and its Accessory Rooms for a General Hospital of 400 Beds where there are no Students." The prize will consist of £52 10*s*. and the silver medal of the Royal Sanitary Institute. The essay must consist of not more than 5,000 words, and must be delivered before 4 P.M on or before August 30th, 1912, addressed to the Secretary of the Royal Sanitary Institute, 90, Buckingham Palace-road, London, S.W. Should none of the essays be considered of sufficient merit or importance to deserve the prize offered the council reserves the right of withholding the award. Full particulars, including information with regard to points with which essays must deal, can be obtained from the Secretary at the Institute.

BOOKS, ETC., RECEIVED.

BAILLIÈRE, TINDALL, AND COX, London. (Published for DEPARTMENT OF EDUCATION, SUDAN GOVERNMENT, Khartoum.)

Second Review of Some of the Recent Advances in Tropical Medicine, Hygiene and Tropical Veterinary Science. Being a Supplement to the Fourth Report of the Wellcome Tropical Research Laboratories at the Gordon Memorial College, Khartoum. By Andrew Balfour, M.D., B.Sc., F.R.C.P. Edin., D.P.H. Camb., Director, and Captain R. G. Archibald, M.B., R.A.M.C., attached E.A., Pathologist and Assistant Bacteriologist, in Collaboration with Captain W. B. Fry, M.R.C.S., L.R.C.P., R.A.M.C., attached E.A., Protozoologist and Assistant Bacteriologist, and Captain W. R. O'Farrell, L.R.C.P. & S.I., R.A.M.C. Price 15*s*. net.

CASSELL AND CO., LIMITED, London, New York, Toronto, and Melbourne.

British Red Cross Society Training Manual No. 3. Issued with the Approval of the War Office. By James Cantlie, M.A., M.B., F.R.C.S., V.D., Hon. Surgeon-Colonel, R.A.M.C. (T.F.). Price not stated.

Essays on Duty and Discipline. A Series of Papers on the Training of Children in Relation to Social and National Welfare. Price 3*s*. net.

A System of Surgery. Edited by C. C. Choyce, B.Sc., M.D., F.R.C.S., Dean of, and Teacher of Operative Surgery in, the London School of Clinical Medicine (Post-Graduate). Pathological Editor, J. Martin Beattie, M.A., M.D., C.M., Professor of Pathology and Bacteriology, and Dean of the Faculty of Medicine, in the University of Sheffield. In three volumes. Volume I. Price 21*s*. net.

CHURCHILL, J. AND A., London.

Poliomyelitis in Relation to the Spread of Infection by Schools. By Frederick E. Batten, M.A., M.D., F.R.C.P. Issued by the Medical Officers of Schools Association. Price 1*s*. net.

FROWDE, HENRY, Oxford University Press, London, Edinburgh, New York, Toronto, and Melbourne.

On Bronchial Asthma, its Pathology and Treatment. By J. B. Berkart, M.D., late Physician to the City of London Hospital for Diseases of the Chest. Revised and abridged. Third edition. Price 5*s*. net.

LEWIS, H. K., London

Stepping Stones to Health on the Nile. By Frederick W. Saunders, M.B., B.C. Cantab., late Superintendent Medical Officer of the Luxor Hospital, Luxor; Member of the British Climatological Society. Price 1*s*. net.

MACLEHOSE, JAMES, AND SONS, Glasgow.

The Growth of Bone: Observations on Osteogenesis. An Experimental Inquiry into the Development and Reproduction of Diaphyseal Bone. By William Macewen, F.R.S. Price 10*s*. net.

MAYNE (ALEXANDER) AND BOYD, 2, Corporation-street, Belfast.

Applied Anatomy of the Lungs and Pleural Membranes, with Special Reference to the Apical Region of the Chest. By J. Stuart Dickey, M.D., B.Ch., Senior Demonstrator of Anatomy, the Queen's University of Belfast. Price 5*s*. net.

ROCKEFELLER INSTITUTE FOR MEDICAL RESEARCH, Sixty-Sixth Street and Avenue A, New York, U.S.A.

Studies from the Rockefeller Institute for Medical Research. Reprints. Vol. XIII. Price not stated.

SANITARY PUBLISHING COMPANY, LIMITED, 5, Fetter-lane, London, E.C.

The Sanitary Record Year Book and Diary, 1912. Price 2*s*. 6*d*. net.

Pocket Notes and Remembrancer for Sanitary Inspectors and all engaged in Public Health Work. By J. T. Cowderoy, Chief Sanitary Inspector, Borough of Kidderminster. Fourth edition, revised and enlarged. Price 2*s*. net.

SIMPKIN, MARSHALL, HAMILTON, KENT, AND CO., LIMITED, London.

Sexual Disease and its Medical Prevention. By H. N. Robson, M.R.C.S. Eng., L.R.C.P. Lond. Third edition. Price 3*s*. 6*d*. net.

THRIFT PUBLISHING COMPANY, 141, Broadway, New York City.

The Mortality of Alcohol. A Statistical Approximation of the Deaths in the United States in Which Alcohol May Figure as a Causative or Contributory Factor. By Edward Bunnell Phelps, M.A., F.S.S. Reprinted from The American Underwriter Magazine and Insurance Review, Vol. XXXVI., No. 1 (September, 1911). Price $2.00.

UNIVERSITY PRESS, Aberdeen.

University of Aberdeen. Subject Catalogue of the Phillips Library of Pharmacology and Therapeutics. 615. Price not stated.

WOODALL, MINSHALL, THOMAS AND CO., Caxton Press, Oswestry. (REGISTRAR OF THE UNIVERSITY OF WALES, UNIVERSITY REGISTRY, Cathays Park, Cardiff.)

The Calendar of the University of Wales for the Academic Year, 1911-1912. Price not stated.

Appointments.

Successful applicants for Vacancies, Secretaries of Public Institutions, and others possessing information suitable for this column, are invited to forward to THE LANCET Office, directed to the Sub-Editor, not later than 9 o'clock on the Thursday morning of each week, such information for gratuitous publication.

CRAWFORD, W. T., M.D. Edin., has been appointed Medical Officer to the Workhouse and Children's Home and District Medical Officer for Worksop.

DUNCAN, F. J. L., M.B., M.S. Glasg., has been appointed Certifying Surgeon under the Factory and Workshop Act for the Stromness District of the county of Orkney.

FLEMING, G., M.B., C.M. Edin., M.R.C.P. Edin., has been appointed Medical Officer to Crooksbury Sanatorium, Farnham, Surrey.

GREIG, F. C., M.R.C.S., L.R.C.P. Lond., has been appointed House Physician at University College Hospital.

HOPKINS, H. L., M.B., B.S. Lond., M.R.C.S., L.R.C.P. Lond., has been appointed House Physician at the Derbyshire Royal Infirmary.

KENNEDY, THOMAS, has been appointed House Surgeon at the Fermanagh County Hospital.

LEIGH, W. H., L.R.C.P. Lond., M.R.C.S., has been appointed Certifying Surgeon under the Factory and Workshop Act for the Westhoughton District of the county of Lancs.

SMALLEY, A. ASHTON, M.B., Ch.B. Vict., M.R.C.S., L.R.C.P. Lond., has been appointed House Surgeon at the Derbyshire Royal Infirmary.

TAYLOR, J., M.R.C.S., L.R.C.P. Lond., has been appointed Obstetric Assistant at University College Hospital.

TONKS, J. W., M.R.C.S., L.R.C.P. Lond., has been appointed House Surgeon at University College Hospital.

VAUGHAN, A. L., L.R.C.P. Lond., M.R.C.S., has been appointed Certifying Surgeon under the Factory and Workshop Act for the Diss District of the county of Norfolk.

WELCH, H. V., M.B., B.S. Lond., M.R.C.S., L.R.C.P. Lond., has been appointed House Surgeon at the Derbyshire Royal Infirmary.

WILLIAMS, O. E., M.R.C.S., L.R.C.P. Lond., has been appointed Assistant House Surgeon at the Derbyshire Royal Infirmary.

Vacancies.

For further information regarding each vacancy reference should be made to the advertisement (see Index).

BATH, EASTERN DISPENSARY.—Resident Medical Officer, unmarried. Salary £130 per annum, with rooms, attendance, &c.

BIRMINGHAM AND MIDLAND EYE HOSPITAL.—Resident Surgical Officer. Salary £70 per annum, with apartments, board, and attendance.

BIRMINGHAM GENERAL HOSPITAL.—Honorary Physician.

BIRMINGHAM INFIRMARY, Dudley-road.—Pathologist. Salary £250 per annum.

CAMBRIDGE, ADDENBROOKE'S HOSPITAL.—Second House Surgeon. Salary £80 per annum, with board, residence, and laundry.

CROYDON GENERAL HOSPITAL.—Junior House Surgeon. Salary £75 per annum, with board, laundry, and residence.

CROYDON MENTAL HOSPITAL, Upper Warlingham, Surrey.—Pathologist and Third Assistant Medical Officer. Salary £200 per annum, with quarters, board, and laundry.

EDINBURGH UNIVERSITY.—Examiner in Midwifery.

EVELINA HOSPITAL FOR SICK CHILDREN, Southwark, London, S.E.—Second Anæsthetist. Salary 12 guineas per annum. Also Surgeon to Out-patients.

GLOUCESTER COUNTY ASYLUMS.—Assistant Medical Officer, unmarried. Salary £150 per annum, with rooms, rations, laundry, and attendance.

GREAT NORTHERN CENTRAL HOSPITAL, Holloway-road, N.—House Surgeon and House Physician for six months. Salary at rate of £40 per annum, with board, lodging, and laundry.

GUILDFORD, ROYAL SURREY COUNTY HOSPITAL.—House Surgeon. Salary £75 per annum, with board, residence, and laundry.

HACKNEY UNION INFIRMARY, High-street, Homerton, N.E.—Two Assistant Resident Medical Officers. Salary £120 per annum, with rations, apartments, and attendance.

HARTSHILL, STOKE-ON-TRENT, NORTH STAFFORDSHIRE INFIRMARY.—House Surgeon. Salary £100 per annum, with apartments, board, and washing.

HELLINGLY, EAST SUSSEX COUNTY ASYLUM.—Third Assistant Medical Officer, unmarried. Salary £160 per annum, with board, apartments, washing, and attendance.

HITHER GREEN, S.E., PARK HOSPITAL FOR CHILDREN.—Senior Assistant Medical Officer. Salary £250 per annum, with board, lodging, and washing.

HOSPITAL FOR CONSUMPTION AND DISEASES OF THE CHEST, Brompton.—House Physician for six months. Salary 30 guineas.

LANCASTER, BOROUGH OF.—Medical Officer of Health. Salary £400 per annum.

LARBERT, STIRLING DISTRICT ASYLUM.—Second Assistant Medical Officer. Salary £130 per annum, with board, &c.

LEAMINGTON SPA, WARNEFORD, LEAMINGTON, AND SOUTH WARWICKSHIRE GENERAL HOSPITAL.—Junior Resident Medical Officer. Salary £85 per annum, with residence, board, and laundry.

LEICESTER INFIRMARY.—Assistant House Physician and Assistant House Surgeon for six months. Salary in each case at rate of £80 per annum, with board, apartments, and washing.

LIVERPOOL WORKHOUSE HOSPITAL, Brownlow Hill.—Resident Assistant Medical Officer. Salary £100 per annum, with apartments, &c.

LONDON LOCK HOSPITAL AND RESCUE HOME, Harrow-road, Paddington, W.—Honorary Dental Surgeon to Female Hospital and Rescue Home.

LONDON TEMPERANCE HOSPITAL.—Assistant House Surgeon for six months. Salary at rate of £105 per annum. Also Medical Registrar. Salary at rate of 40 guineas per annum.

MACCLESFIERD GENERAL INFIRMARY.—Junior House Surgeon. Salary £60 per annum, with board and residence.

MARGARET-STREET HOSPITAL FOR CONSUMPTION AND DISEASES OF THE CHEST, 26, Margaret-street, W., FAIRLIGHT SANATORIUM FOR MEN, AND MARGARET-STREET SANATORIUM FOR CHILDREN.—Honorary Assistant Physician.

MOUNT VERNON HOSPITAL FOR CONSUMPTION AND DISEASES OF THE CHEST, Hampstead and Northwood.—House Physician at Northwood. Salary £75 per annum, with board, residence, and washing.

NATIONAL HOSPITAL FOR THE PARALYSED AND EPILEPTIC, Queen-square, Bloomsbury.—Resident Medical Officer. Salary £100 per annum, with board and residence.

NORTHAMPTON GENERAL HOSPITAL.—House Surgeon. Salary £90 per annum, with apartments, board, washing, and attendance.

PADDINGTON GREEN CHILDREN'S HOSPITAL, London, W.—Honorary Physician to Out-patients.

POPLAR HOSPITAL FOR ACCIDENTS, Poplar, E.—Assistant House Surgeon for six months. Salary at rate of £80 per annum, with board and residence.

QUEEN'S HOSPITAL FOR CHILDREN, Hackney-road, Bethnal Green, E.—Surgeon-in-Charge of Ear, Nose, and Throat Department.

ROYAL FREE HOSPITAL, Gray's Inn-road, W.C.—Female Curator. Salary £50 per annum.

ROYAL LONDON OPHTHALMIC HOSPITAL, City-road, E.C.—Senior House Surgeon. Salary at rate of £100 per annum, with board and residence.

ST. BARTHOLOMEW'S HOSPITAL.—Physician.

ST. PAUL'S HOSPITAL FOR SKIN AND URINARY DISEASES, Red Lion-square, W.C.—Clinical Assistant.

ST. PETER'S HOSPITAL FOR STONE, &c., Henrietta-street, Covent Garden, W.C.—Junior House Surgeon for six months. Salary at rate of £50 per annum, with board, lodging, and washing.

SCARBOROUGH HOSPITAL AND DISPENSARY.—Junior House Surgeon. Salary £80 per annum, with board, residence, &c.

SHEFFIELD ROYAL INFIRMARY.—Junior Resident Medical Officer. Salary £60 per annum.

SHOREDITCH AND FINSBURY TUBERCULOSIS DISPENSARY.—Medical Officer. Salary £250 per annum.

SOUTH SHIELDS, INGHAM INFIRMARY AND SOUTH SHIELDS AND WESTOE DISPENSARY.—Senior and Junior House Surgeon. Salary £100 and £90 per annum respectively, with residence, board, and washing.

STAFFORD, COTON HILL LUNATIC HOSPITAL.—Assistant Medical Officer. Salary £125 per annum, with residence, board, and laundry.

TRURO, ROYAL CORNWALL INFIRMARY.—House Surgeon, unmarried. Salary £100 per annum, with rooms, board, and washing.

VICTORIA HOSPITAL FOR CHILDREN, Tite-street, Chelsea, S.W.—House Physician and House Surgeon for six months. Salary £40, with board, lodging, and laundry.

WEST LONDON HOSPITAL, Hammersmith-road, W.—Assistant Anæsthetist.

WINCHESTER, ROYAL HAMPSHIRE COUNTY HOSPITAL.—House Physician. Salary £80 per annum.

WORCESTER GENERAL INFIRMARY.—House Surgeon. Salary £100 per annum, with board, residence, and washing.

THE Chief Inspector of Factories, Home Office, London, S.W., gives notice of vacancies as Certifying Surgeons under the Factory and Workshop Act at Bruton, in the county of Somerset; at Cinderford, in the county of Gloucester; at Kingstown, in the county of Dublin; at Saltcoats, in the county of Ayrshire; and at Stock, in the county of Essex.

Births, Marriages, and Deaths.

BIRTHS.

ANDERSON.—On Dec. 31st, 1911, at Horsmonden, Kent, the wife of F. T. Anderson, M.D., of a son.

LACK.—On Jan. 1st, at Devonshire-place, W., the wife of Dr. Lambert Lack, of a daughter.

MARRIAGES.

GAMBIER—CUTTING.—On Dec. 21st, 1911, at Hastings, Thomas Gambier, M.D., to Ethel Sophia Cutting, B.A., daughter of Arthur Cutting, of Birmingham.

SHIPWAY—BIDDELL.—On Jan. 6th, at Holy Trinity Church, Brompton, Francis Edward Shipway, M.D., to Winifred Adine, elder daughter of William R. Biddell, of Sherwood Oaks, Kenley.

WARREN—JENKINS.—On Jan. 10th, at St. Paul's Church, Ramsgate, by the Rev. G. P. Haydon, uncle of the bridegroom, Richard Warren, F.R.C.S., M.Ch., of 29, Weymouth-street, W., younger son of General Sir Charles Warren, G.C.M.G., J.P., to Violet Irené, eldest daughter of A. C. Jenkins, Esq., of Rose Cottage, Heamoor, Cornwall.

DEATHS.

GAMGEE.—On Jan. 7th, at 45, York-road, Edgbaston, Marion, wife of the late Joseph Sampson Gamgee, of Birmingham, aged 72.

JEX-BLAKE.—On Jan. 7th, at Windydene, Mark Cross, Sussex, Sophia Jex-Blake, M.D., in the 72nd year of her age.

N.B.—A fee of 5s. is charged for the insertion of Notices of Births, Marriages, and Deaths.

Notes, Short Comments, and Answers to Correspondents.

VITAL STATISTICS OF BRITISH GUIANA.

In the report of the Blue-book of British Guiana for the year 1910-1911, received at the Colonial Office last month, it is stated that a census was taken on April 2nd, 1911, when the population was returned at 295,713 souls, exclusive of the aboriginal Indians in the unfrequented portions of the colony. There were 8332 births registered during the year. The birth-rate per 1000 of the estimated population of each of the different races representing the community was in 1910 as follows: Europeans, other than Portuguese, 13·9; Portuguese, 23·2; East Indians, 24·4; Chinese, 35·6; aborigines, 65·1; blacks, 29·7; mixed races, 27·0. With the exception of Europeans, Chinese, and aborigines, which show increases, a decrease has been noted in respect of each race on the figures for 1909. On the figures for 1908 there is an increase as regards each race except Europeans and mixed races, which show slight decreases, and East Indians, which figure remains the same. Of the births registered 3325, or 39·9 per cent., were legitimate and 5007, or 60·1 per cent., illegitimate. The deaths registered were 10,424, or 1057 more than in the previous year, when the deaths were 14 less than in 1903. The death-rate was 34·4 per 1000 of the estimated population, as compared with 30·0 in 1909 and 30·8 in 1908. The mean rate for the previous five years was 30·8. There were 1954 deaths of children under one year of age, or 234 per 1000, the previous year's figures having been 1872, or 209 per 1000. The figures of 1910, however, are lower than in 1907, when they were 2202, or 256 per 1000. The mean rate for the past five years continues at 210 per 1000.

The health of the colony showed no marked improvement over the previous year. There was no epidemic of any dangerous, infectious, or contagious disease, though the existence of yellow fever and plague in neighbouring places gave rise to considerable anxiety. Efforts are being made by legislative and other action to control the mosquito pest. The number of screened vats has been greatly increased. Quinine is sold at all post offices to the general public at cost price; it is also distributed by the sugar estates free to their labourers. Prisoners and members of the police force are supplied by the colony with free quinine. There were 7556 fewer cases of malarial fever treated in the estates' hospitals than in the previous year. The medical department continues to give attention to the question of ankylostomiasis, and the interest that has been aroused in this connexion among the employers of labour on the sugar estates and among the labourers themselves is bearing fruit. The five principal causes of death throughout the colony during the past five years are given by the Registrar-General as follows: Malaria, 20·2 per cent.; pneumonia and bronchitis, 12·7 per cent.; kidney diseases, 12·4 per cent.; diarrhœal diseases, 7·1 per cent.; phthisis and other forms of tuberculosis, 6·0 per cent. The total rainfall for the calendar year 1910 at the Botanic Gardens, Georgetown, was 101·46 inches. The amount of sunshine recorded during the year was 2391 hours. The hospitals and asylums of the colony were maintained during the year in their usual efficient condition. There are five public hospitals in the principal centres of population, and the outlying districts are served by dispensary hospitals and dispensaries. The immigration law also requires the maintenance of hospitals on every plantation on which there are indentured East Indian labourers, and those institutions are available for the treatment of emergency and pauper cases from the general community. There were 655 patients in the public hospitals at the beginning of the year, and 16,331 were admitted during the year. The daily average under treatment was 712. There were 2046 deaths. In addition to those admitted to hospital, outdoor treatment was given to 74,877 persons.

At the Leper Asylum there were 413 patients when the year began—287 males and 126 females—and during the year 121 were admitted. The Lepers Ordinance, 1905, allowed lepers to be isolated in private at their homes instead of being sent to the Leper Asylum when the governor is satisfied that it can be done without danger of infection to other persons. But it is now known that lepers suffering from ulcers are a far more dangerous source of infection than others, and accordingly a new ordinance has been passed, providing that such lepers shall not be isolated in private, but must be sent to the Leper Asylum.

THE PREVENTION OF DISEASE AND THE SAVING OF LIFE BY THE DESTRUCTION OF MOSQUITOES.

We have received from Dr. H. A. Alford Nicholls, C.M.G., Senior Medical Officer of Dominica, an interesting little pamphlet with the above title, intended for public instruction among the people of Dominica and other mosquito-infested districts. It makes no pretence to originality, but it is an unusually clear, concise, and useful statement for the public of what everyone living in such a district should know in relation to the connexion of mosquitoes with disease, the life-history of the three disease-carrying mosquitoes, and the best methods of dealing with them. It is just the kind of pamphlet to be read with the intelligent interest necessary as a stimulant to action. It is printed at the Bulletin Office, Roseau, Dominica, West Indies.

"THE CHEMICAL WORLD."

We have received from Messrs. J. and A. Churchill a copy of the first number of *The Chemical World*. This periodical is to be published in monthly numbers, and judging from the excellent series of articles in the first number we anticipate that it will appeal to a wide *clientèle*, chiefly to those interested in the advances of chemical science and technology. Amongst the interesting articles in the first number are "The Physics and Chemistry of Colloids" (the first of a series), "The Food and Drugs Acts and a Court of Reference," "Notes on Chemical Research," "The Detection of Mydriatic Alkaloids," "The Chemical Characterisation of Soils," "Cellulose and Cellulose Products," and "Chemical Research." The journal is well printed, and its general plan is attractive.

Communications not noticed in our present issue will receive attention in our next.

A DIARY OF CONGRESSES.

We shall publish this diary from time to time that our readers may have under their hands the dates of the approaching scientific Congresses. It is unnecessary to issue the lists of all these functions week by week, and we propose to make only such gatherings as will occur in the immediate future the subject of regular announcement. The following Congresses, Conferences, and Exhibitions are announced for the next few months:—

Jan. 20th–27th (Hong-Kong).—Second Biennial Congress of the Far Eastern Association of Tropical Medicine.
Feb. 13th–14th (London).—Central Poor-Law Conference.
March 7th–11th (Berlin).—Thirty-third Balneological Congress.
March 23rd–April 4th (London, Royal Agricultural Hall).—International Smoke Abatement Exhibition.
" (London).—First Congress of Pure Food and Health Society of Great Britain.
April 1st–7th (Tunis).—Twenty-second Congress of French-speaking Alienists and Neurologists.
" 8th–13th (Rome).—Seventh International Congress of Dermatology and Syphilology.
" 8th–15th (Johannesburg).—Thirteenth South African Medical Congress.
" 14th–20th (Rome).—Seventh International Congress on Tuberculosis.
" 15th–18th (Wiesbaden).—Twenty-ninth German Congress for Internal Medicine.
" (Giessen).—Congress on Study of Families, Inheritance, and Race Hygiene.
Spring (London).—Second Optical Convention.
May 7th–17th (Washington).—Ninth International Red Cross Conference.
" 23rd–25th (Hanover).—Nineteenth Meeting of the Union of German Laryngologists.
" 25th–27th (Paris).—International Musical Festival.
" 27th–June 1st (London).—Eighteenth International Congress of Americanists.
" 29th–31st (Berlin).—Fifteenth Session of the German Society for Gynæcology.
" (London).—International Horticultural Exhibition.

METEOROLOGICAL READINGS.

(Taken daily at 8.30 a.m. by Steward's Instruments.)

THE LANCET Office, Jan. 10th, 1912.

Date.	Barometer reduced to Sea Level and 32° F.	Direction of Wind.	Rain fall.	Solar Radio in Vacuo.	Maximum Temp. Shade.	Min. Temp.	Wet Bulb.	Dry Bulb.	Remarks.
Jan. 4	30·02	S.W.	0·07	54	52	48	48	49	Overcast
" 5	29·53	W.	0·31	65	48	48	48	48	Raining
" 6	29·32	S.W.	0·18	53	51	39	40	40	Raining
" 7	29·05	N.	0·49	57	42	38	37	39	Cloudy
" 8	29·97	S.	...	47	47	34	33	34	Overcast
" 9	29·45	S.	[0·31	69	52	34	46	46	Fine
" 10	29·95	S.W.	...	58	48	41	41	42	Foggy

The following journals, magazines, &c., have been received:— Journal of Tropical Medicine and Hygiene, Journal für Psychologie und Neurologie, Therapeutic Gazette, Archives of the Roentgen Ray, St. Bartholomew's Hospital Gazette, Medical Review of Reviews, Encyclopédie Médicale, Prescriber, Die Therapie der Gegenwart, Journal of Laryngology, Rhinology, and Otology, Review of Neurology and Psychiatry, Women's Industrial News.

Medical Diary for the ensuing Week.

SOCIETIES.

ROYAL SOCIETY OF MEDICINE, 15, Cavendish-square, W. (temporary address during building of new house).

TUESDAY.

THERAPEUTICAL AND PHARMACOLOGICAL SECTION (Hon. Secretaries—H. Charles Cameron, H. H. Dale): at 4.30 P.M.

Paper:
Dr. W. Bain: The Causes and Treatment of High Blood Pressure.

PATHOLOGICAL SECTION (Hon. Secretaries—J. C. G. Ledingham, A. E. Boycott): at 8.30 P.M.
Dr. J. Turner: Two Cases of Amaurotic Idiocy.
Dr. J. A. Braxton Hicks: An Unusual Organism (M. zymogenes) in a Case of Malignant Endocarditis.
Dr. J. C. G. Ledingham: Phagocytosis from the Adsorption Point of View.

THURSDAY.

DERMATOLOGICAL SECTION (Hon. Secretaries—J. H. Sequeira, Wilfrid Fox), at 11, Chandos-street, W.: at 5 P.M.

Cases:
Dr. Parkes Weber; Sequel to Case of Chronic Artificial Skin Eruption (shown Dec. 15th, 1910).
Dr. Sequeira: Cultures of Tricophyton Plicatile obtained by Dr. Sabouraud from Dr. Sequeira's Case of Ringworm with Granulomata.

NEUROLOGICAL SECTION (Hon. Secretaries—Wilfred Harris, T. Grainger Stewart): at 8.30 P.M.

Papers:
Dr. Howard Tooth and Dr. Hinds Howell: Case of Tabetic Amyotrophy with Pathological Report.
Dr. F. E. Batten: Case of Dermato-Myositis with Pathological Examination.
Dr. Wilfred Harris: Two Cases of Hæmato-rhachis.

FRIDAY.

OTOLOGICAL SECTION (Hon. Secretaries—Sydney Scott, A. Logan Turner), at 11, Chandos-street, W.: at 5 P.M.

Discussion:
Factors which Conduce to Success in the Treatment of Otogenic Brain Abscess (opened by Sir Victor Horsley, F.R.S., and Mr. C. E. West).

Demonstration of Cases and Specimens by other Members.

(The Council of the Section will welcome the presentation not only of patients who have been successfully treated for Otogenic Brain Abscess but also of pathological material bearing on the subject under discussion.)

Members of the NEUROLOGICAL and SURGICAL SECTIONS are specially invited to be present and to take part in the discussion.

ELECTRO-THERAPEUTICAL SECTION (Hon. Secretaries—G. Harrison Orton, Cecil R. C. Lyster): at 8.30 P.M.

Paper:
Dr. C. J. Morton: X-Ray Prognosis.

Demonstration:
Dr. James C. Case: X-Ray Stereo Reductions of Bismuth Meals.

MEDICO-LEGAL SOCIETY, 11, Chandos-street, Cavendish-square, W.
TUESDAY.—8.30 P.M., Dr. R. R. Rentoul: Sterilisation of the Unfit.

CHELSEA CLINICAL SOCIETY, St. George's Hospital Medical School, S.W.
TUESDAY.—8.30 P.M., Mr. F. D. Mortimer: Preparation for Anæsthesia.—Mr. A. F. Penny: The Importance of Early Diagnosis and Treatment in Acute Inflammatory Diseases of the Middle Ear.

LONDON DERMATOLOGICAL SOCIETY, 48, Leicester-square, W.C.
TUESDAY.—4.30 P.M., Meeting.

ROYAL METEOROLOGICAL SOCIETY, Institution of Civil Engineers, Great George-street, Westminster, S.W.
WEDNESDAY.—7.45 P.M., Annual General Meeting. Election of Council for 1912. Presentation of the Symons Gold Medal to Prof. C. Abbe. Dr. H. N. Dickson: Some Meteorological Observations.

ROYAL MICROSCOPICAL SOCIETY, 20, Hanover-square, W.
WEDNESDAY.—8 P.M., Annual Address:—The President (Mr. H. G. Plimmer): On Certain Blood Parasites.

LECTURES, ADDRESSES, DEMONSTRATIONS, &c.

MEDICAL GRADUATES' COLLEGE AND POLYCLINIC, 22, Chenies-street, W.C.
MONDAY.—4 P.M., Dr. G. Little: Clinique (Skin). 5.15 P.M. Lecture:—Mr. M. Little: A New Material for Surgical Appliances (with demonstration).
TUESDAY.—4 P.M., Dr. G. A. Sutherland: Clinique (Medical). 5.15 P.M., Lecture:—Mr. W. Stuart-Low: Nasal Catarrh.
WEDNESDAY.—4 P.M., Mr. C. Rowntree: Clinique (Surgical). 5.15 P.M., Lecture:—Dr. G. Pernet: Animal Parasites.
THURSDAY.—4 P.M., Dr. N. Pitt: Clinique (Medical). 5.15 P.M., Lecture:—Mr. A. McNab: Glaucoma.
FRIDAY.—4 P.M., Mr. E. A. Peters: Clinique (Ear, Nose, and Throat).

POST-GRADUATE COLLEGE, West London Hospital, Hammersmith-road, W.
MONDAY.—10 A.M., Dr. Simson: Diseases of Women. 10.30 A.M., Surgical Registrar: Demonstration of Cases in Wards. 12 noon, Dr. Bernstein: Pathological Demonstration. 2 P.M., Medical and Surgical Clinics. X Rays. Operations. 2.30 P.M., Mr. Dunn: Diseases of the Eye. 5 P.M., Lecture:—Mr. Bidwell: Surgical Treatment of Floating Kidney.
TUESDAY.—10 A.M., Dr. Robinson: Gynæcological Operations. 11.30 A.M., Mr. Etherington-Smith: Demonstration of Minor Operations. 2 P.M., Medical and Surgical Clinics. X Rays. Operations. Dr. Davis: Diseases of the Throat, Nose, and Ear. 2.30 P.M., Dr. Abraham: Diseases of the Skin. 5 P.M., Lecture:—Dr. Davis: Diseases of the Throat. (Lecture II.)
WEDNESDAY.—10 A.M., Dr. Saunders: Diseases of Children. Dr. Davis: Operations of the Throat, Nose, and Ear. 10.30 A.M., Surgical Registrar: Demonstration of Cases in Wards. 2 P.M., Medical and Surgical Clinics. X Rays. Operations. Mr. B. Harman: Diseases of the Eye. 2.30 P.M., Dr. Simson: Diseases of Women. 5 P.M., Lecture:—Dr. Beddard: Practical Medicine. (Lecture I.)
THURSDAY.—10 A.M., Dr. Simson: Gynæcological Demonstration. 12.15 P.M., Lecture:—Dr. G. Stewart: Practical Medicine. 2 P.M., Medical and Surgical Clinics. X Rays. Operations. 2.30 P.M., Mr. Dunn: Diseases of the Eye. 5 P.M., Lecture:—Mr. Baldwin: Practical Surgery. (Lecture I.)
FRIDAY.—10 A.M., Dr. Robinson: Gynæcological Operations. 2 P.M., Medical and Surgical Clinics. X Rays. Operations. Dr. Davis: Diseases of the Throat, Nose, and Ear. 2.30 P.M., Dr. Abraham: Diseases of the Skin. 5 P.M., Lecture:—Dr. Saunders: Clinical (with cases).
SATURDAY.—10 A.M., Dr. Saunders: Diseases of Children. Dr. Davis: Operations of the Throat, Nose, and Ear. Mr. Bishop Harman: Diseases of the Eye. 10.30 A.M., Medical Registrar: Demonstration of Cases in Wards. 2 P.M., Medical and Surgical Clinics. X Rays. Operations.

NORTH-EAST LONDON POST-GRADUATE COLLEGE, Prince of Wales's General Hospital, Tottenham, N.
MONDAY.—Clinics:—10.30 A.M., Surgical Out-patient (Mr. B. Gillespie). 2.30 P.M., Medical Out-patient (Dr. T. R. Whipham): Nose, Throat, and Ear (Mr. H. D. Gillies). 3 P.M., Clinical Pathology and Pathological Demonstration (Dr. W. H. Duncan).
TUESDAY.—Clinic: 2.30 P.M., Operations. Clinics:—Medical Out-patient (Dr. A. G. Auld).; Surgical (Mr. Howell Evans); Gynæcological (Dr. A. B. Giles). 3.30 P.M., Medical In-patient (Dr. A. J. Whiting). 4.30 P.M., Lecture:—Dr. A. G. Auld; The Value of X Rays in the Diagnosis of Chest Affections.
WEDNESDAY.—Clinics:—2 P.M., Throat Operations (Mr. Gillies). 2.30 P.M., Children's Out-patient (Dr. T. R. Whipham); Skin (Dr. G. N. Meachen); Eye (Mr. R. P. Brooks). 3 P.M., X Rays (Mr. W. Steuart); Clinical Pathology and Pathological Demonstration (Dr. W. H. Duncan). 5.30 P.M., Eye Operations (Mr. Brooks). 4.30 P.M., Lecture:—Mr. W. Stewart: The Therapeutic Uses of X Rays.
THURSDAY.—2.30 P.M., Gynæcological Operations (Dr. A. B. Giles). Clinics:—Medical Out-patient (Dr. A. J. Whiting); Surgical (Mr. Carson). 3 P.M., Medical In-patient (Dr. G. P. Chappel).
FRIDAY.—2.30 P.M., Operations. Clinics:—Medical Out-patient (Dr. A. G. Auld); Surgical (Mr. B. Gillespie); Eye (Mr. R. P. Brooks). 3 P.M., Medical In-patient (Dr. R. M. Leslie); Clinical Pathology and Pathological Demonstration (Dr. W. H. Duncan).

LONDON SCHOOL OF CLINICAL MEDICINE, Dreadnought Hospital, Greenwich.
MONDAY.—2 P.M., Operations. 2.15 P.M., Mr. Turner: Surgery. 3.15 P.M., Sir Dyce Duckworth: Medicine. 4.30 P.M., Mr. R. Lake: Ear and Throat. Out-patient Demonstrations:—10 A.M., Surgical and Medical. 12 noon, Ear and Throat. 3.15 P.M., Special Lecture:—Sir Dyce Duckworth: Rheumatic Fever.
TUESDAY.—2 P.M., Operations. 3.15 P.M., Dr. R. Wells: Medicine. 2.15 P.M., Mr. R. Carling: Surgery. 4.15 P.M., Sir M. Morris: Diseases of the Skin. Out-patient Demonstrations:—10 A.M., Surgical and Medical. 12 noon, Skin. 4.30 P.M., Special Lecture:—Mr. Walton: Diagnosis of Peripheral Nerve Lesions.
WEDNESDAY.—2 P.M., Operations. 2.15 P.M., Dr. F. Taylor: Medicine. 3.30 P.M., Mr. Cargill: Ophthalmology. Out-patient Demonstrations:—10 A.M., Surgical and Medical. 11 A.M., Eye. 5 P.M., Special Demonstration (or Lecture):—Mr. McGavin: Surgical.
THURSDAY.—2 P.M., Operations. 2.15 P.M., Dr. G. Rankin: Medicine. 3.15 P.M., Sir W. Bennett: Surgery. Out-patient Demonstrations:—10 A.M., Surgical and Medical. 12 noon, Ear and Throat. 4.30 P.M., Special Lecture:—Dr. Gandy: Anæsthetics.
FRIDAY.—2 P.M., Operations. 2.15 P.M., Sir J. Rose Bradford: Medicine. 3.15 P.M., Mr. McGavin: Surgery. Out-patient Demonstrations:—10 A.M., Surgical and Medical. 12 noon, Skin.
SATURDAY.—10 A.M., Radiography. 11 A.M., Dr. A. Davies: Pathological Demonstration. 2 P.M., Operations. Out-patient Demonstration:—10 A.M., Surgical and Medical. 11 A.M., Eye.

HOSPITAL FOR SICK CHILDREN, Great Ormond-street, W.C.
THURSDAY.—4 P.M., Lecture:—Mr. E. M. Corner: Delayed Chloroform Poisoning.

ST. JOHN'S HOSPITAL FOR DISEASES OF THE SKIN, 49, Leicester-square, W.C.
TUESDAY.—6 P.M., Dr. W. Griffith: Pathology of the Skin Appendages.
THURSDAY.—6 P.M., Chesterfield Lecture:—Dr. M. Dockrell: Acne Vulgaris in its Three Stages—I., Comedo; II., Indurata; III., Necrotica.

ROYAL INSTITUTION OF GREAT BRITAIN, Albemarle-street, Piccadilly, W.
TUESDAY.—3 P.M., Prof. W. Bateson: The Study of Genetics. (Lecture I.)
FRIDAY.—9 P.M., Prof. Sir James Dewar: Heat Problems.

ROYAL SANITARY INSTITUTE, 90, Buckingham Palace-road, S.W.
MONDAY.—7.30 P.M., Prof. H. R. Kenwood: Fresh Air (illustrated by lantern slides).
FRIDAY.—4 P.M., Dr. T. D. Lister: Problem of After-care of Sanatoria Patients.

ANCOATS HOSPITAL, Manchester.
THURSDAY.—4.15 P.M., Dr. E. B. Leech: Difficulties in the Diagnosis between Diseases of the Chest and Abdomen. (Post-Graduate Clinic.)

MANCHESTER ROYAL INFIRMARY.
MONDAY.—4.30 P.M., Dr. A. T. Wilkinson: Demonstration of Medical Cases.
FRIDAY.—4.30 P.M., Mr. W. Thorburn: Neuralgia and its Surgical Treatment.

OPERATIONS.

METROPOLITAN HOSPITALS.

MONDAY (15th).—London (2 P.M.), St. Bartholomew's (1.30 P.M.), St. Thomas's (3.30 P.M.), St. George's (2 P.M.), St. Mary's (2.30 P.M.), Middlesex (1.30 P.M.), Westminster (2 P.M.), Chelsea (2 P.M.), Samaritan (Gynæcological, by Physicians, 2 P.M.), Soho-square (2 P.M.), Gt. Northern Central (2.30 P.M.), West London (2.30 P.M.), London Throat (9.30 A.M.), Royal Free (2 P.M.), Guy's (1.30 P.M.), Children, Gt. Ormond-street (9 A.M.), St. Mark's (2.30 P.M.), Central London Throat and Ear (Minor 9 A.M., Major 2 P.M.).

TUESDAY (16th).—London (2 P.M.), St. Bartholomew's (1.30 P.M.), St. Thomas's (3.30 P.M.), Guy's (1.30 P.M.), Middlesex (1.30 P.M.), Westminster (2 P.M.), West London, (2.30 P.M.), University College (2 P.M.), St. George's (1 P.M.), St. Mary's (1 P.M.), St. Mark's (2.30 P.M.), Cancer (2 P.M.), Metropolitan (2.30 P.M.), London Throat (3.30 A.M.), Samaritan (9.30 A.M. and 2.30 P.M.), Throat, Golden-square (9.30 A.M.), Soho-square (2 P.M.), Chelsea (2 P.M.), Children, Gt. Ormond-street (9 A.M. and 2 P.M., Ophthalmic, 2 P.M.), Tottenham (2.30 P.M.). Central London Throat and Ear (Minor, 9 A.M., Major, 2 P.M.), Royal National Orthopædic (9.30 A.M. and 4 P.M.).

WEDNESDAY (17th).—St. Bartholomew's (1.30 P.M.), University College (2 P.M.), Royal Free (2 P.M.), Middlesex (1.30 P.M.), Charing Cross (3 P.M.), St. Thomas's 2 P.M.), London (2 P.M.), King's College (2 P.M.), St. George's (Ophthalmic, 1 P.M.), St. Mary's (2 P.M.), St. Peter's (2 P.M.), Samaritan (9.30 A.M. and 2.30 P.M.), Gt. Northern Central (2.30 P.M.), Westminster (2 P.M.), Metropolitan (2.30 P.M.), London Throat (9.30 A.M.), Cancer (2 P.M.), Throat, Golden-square (9.30 A.M.), Guy's (1.30 P.M.), Royal Ear (2 P.M.), Children, Gt. Ormond-street (9 A.M. and 9.30 A.M., Dental, 2 P.M.), Tottenham (Ophthalmic, 2.30 P.M.), West London (2.30 P.M.), Central London Throat and Ear (Minor, 9 A.M., Major, 2 P.M.).

THURSDAY (18th).—St. Bartholomew's (1.30 P.M.), St. Thomas's (3.30 P.M.), University College (2 P.M.), Charing Cross (3 P.M.), St. George's (1 P.M.), London (2 P.M.), King's College (2 P.M.), Middlesex (1.30 P.M.), St. Mary's (2.30 P.M.), Soho-square (2 P.M.), North-West London (2 P.M.), Gt. Northern Central (Gynæcological, 2.30 P.M.), Metropolitan (2.30 P.M.), London Throat (9.30 A.M.), Samaritan (9.30 A.M and 2.30 P.M.), Throat, Golden-square (9.30 A.M.), Guy's (1.30 P.M.), Royal National Orthopædic (9 A.M. and 3.30 P.M.), Royal Ear (2 P.M.), Children Gt. Ormond-street (9 A.M. and 2 P.M.), Tottenham (Gynæcological, 2.30 P.M.), West London (2.30 P.M), Central London Throat and Ear (Minor, 9 A.M., Major, 2 P.M.).

FRIDAY (19th).—London (2 P.M.), St. Bartholomew's (1.30 P.M.), St. Thomas's (3.30 P.M.), Guy's (1.30 P.M.), Middlesex (1.30 P.M.), Charing Cross (3 P.M.), St. George's (1 P.M.), King's College (2 P.M.), St. Mary's (2 P.M.), Ophthalmic (10 A.M.), Cancer (2 P.M.), Chelsea (2 P.M.), Gt. Northern Central (2.30 P.M.), West London (2.30 P.M.), London Throat (9.30 A.M.), Samaritan (9.30 A.M. and 2.30 P.M.), Throat, Golden-square (9.30 A.M.), Royal National Orthopædic (3.30 P.M.), Soho-square (2 P.M.), Children, Gt. Ormond-street (9 A.M., Aural, 2 P.M.), Tottenham (2.30 P.M.), St. Peter's (2 P.M.)., Central London Throat and Ear (Minor, 9 A.M., Major, 2 P.M.).

SATURDAY (20th).—Royal Free (9A.M.), London (2 P.M.), Middlesex (1.30 P.M.), St. Thomas's (2 P.M.), University College (9.15 A.M.), Charing Cross (2 P.M.), St. George's (1 P.M.), St. Mary's (10 A.M.), Throat, Golden-square (9.30 A.M.), Guy's (1.30 P.M.), Children, Gt. Ormond-street (9 A.M. and 9.30 A.M.), West London (2.30 P.M.).

At the Royal Eye Hospital (2 P.M.), the Royal London Ophthalmic (10 A.M.), the Royal Westminster Ophthalmic (1.30 P.M.), and the Central London Ophthalmic (2 P.M.), Hospital operations are performed daily.

EDITORIAL NOTICES.

IT is most important that communications relating to the Editorial business of THE LANCET should be addressed *exclusively* "TO THE EDITOR," and not in any case to any gentleman who may be supposed to be connected with the Editorial staff. It is urgently necessary that attention should be given to this notice.

It is especially requested that early intelligence of local events having a medical interest, or which it is desirable to bring under the notice of the profession, may be sent direct to this office.

Lectures, original articles, and reports should be written on one side of the paper only, AND WHEN ACCOMPANIED BY BLOCKS IT IS REQUESTED THAT THE NAME OF THE AUTHOR, AND IF POSSIBLE OF THE ARTICLE, SHOULD BE WRITTEN ON THE BLOCKS TO FACILITATE IDENTIFICATION.

Letters, whether intended for insertion or for private information, must be authenticated by the names and addresses of their writers—not necessarily for publication.

We cannot prescribe or recommend practitioners.

Local papers containing reports or news paragraphs should be marked and addressed "To the Sub-Editor."

Letters relating to the publication, sale and advertising departments of THE LANCET *should be addressed "To the Manager."*

We cannot undertake to return MSS. not used.

MANAGER'S NOTICES.

THE INDEX TO THE LANCET.

The Index and Title-page to Vol. II. of 1911 were given in THE LANCET of Dec. 30th, 1911.

VOLUMES AND CASES.

VOLUMES for the second half of the year 1911 are now ready. Bound in cloth, gilt lettered, price 16*s.*, carriage extra.

Cases for binding the half-year's numbers are also ready. Cloth, gilt lettered, price 2*s.*, by post 2*s.* 3*d.*

To be obtained on application to the Manager, accompanied by remittance.

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WILL Subscribers please note that only those subscriptions which are sent direct to the Proprietors of THE LANCET at their Offices, 423, Strand, London, W.C., are dealt with by them? Subscriptions paid to London or to local newsagents (with none of whom have the Proprietors any connexion whatever) do not reach THE LANCET Offices, and consequently inquiries concerning missing copies, &c., should be sent to the Agent to whom the subscription is paid, and *not* to THE LANCET Offices.

Subscribers, by sending their subscriptions direct to THE LANCET Offices, will insure regularity in the despatch of their Journals and an earlier delivery than the majority of Agents are able to effect.

THE COLONIAL AND FOREIGN EDITION (printed on thin paper) is published in time to catch the weekly Friday mails to all parts of the world.

The rates of subscriptions, post free from THE LANCET Offices, have been reduced, and are now as follows:—

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Subscriptions (which may commence at any time) are payable in advance. Cheques and Post Office Orders (crossed "London County and Westminster Bank, Covent Garden Branch") should be made payable to the Manager, Mr. CHARLES GOOD, THE LANCET Offices, 423, Strand, London, W.C.

TO COLONIAL AND FOREIGN SUBSCRIBERS.

SUBSCRIBERS ABROAD ARE PARTICULARLY REQUESTED TO NOTE THE RATES OF SUBSCRIPTIONS GIVEN ABOVE.

The Manager will be pleased to forward copies direct from the Offices to places abroad at the above rates, whatever be the weight of any of the copies so supplied.

SOLE AGENTS FOR AMERICA—Messrs. WILLIAM WOOD AND CO., 51, Fifth Avenue, New York, U.S.A.

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An Address
ON
EXAMPLES OF THE RESOURCES OF SURGERY IN CERTAIN EMERGENCIES.[1]

BY CHARLES A. BALLANCE, M.V.O., M.S. LOND., F.R.C.S. ENG.,
SURGEON TO ST. THOMAS'S HOSPITAL, ETC.

MR. PRESIDENT AND GENTLEMEN,—The Hunterian is one of our oldest medical societies, and as Hunter was a London surgeon it seems in the fitness of things that surgery should occupy a prominent place in your yearly programme. The society was founded in 1819, and its first President was Sir William Blizzard, a man evidently of remarkable energy and ability. He was elected President when 76 years old, at 84 he successfully amputated a thigh, at 91 he was himself operated upon for cataract, and a few hours after the operation was bled to 8 oz. In these days most members of our profession who survive to old age, unlike Sir William Blizzard, may echo the lament of the Psalmist, "Collocavit me in obscuris sicut mortuos saeculi."

SOME OBSERVATIONS ON MEDICAL SOCIETIES.

At the jubilee of the society in 1869 an address was given by Henry Fotherby, in which is well described the evolution of the societies of men from the earliest times, and in which the history of the Hunterian Society to that date is given in considerable detail. In that address Fotherby remarked:—

> The success of the society has been *felt* in the experiences of its members, rather than *written* in the minutes of its proceedings. Nothing in the shape of a party or clique has ever been known among its members. May this happy state long continue.

Some common bond of interest is essential to the life of a society: Ratio societatis vinculum. Instinct led the barbarian to unite with his fellow for the mere purpose of support and defence.

> These ends being secured, the religious idea, as innate to humanity, appears to be the next cause of association; and very early do we find a class, society, or caste set apart for the culture of religion, as the Druids, the Augurs, and the Levites. With them dwelt the influence and authority which wisdom and learning ever exercise over ignorance; and to them, in virtue of their supposed influence with the gods, was committed equally the care of souls and bodies and the formation of laws. In the classic systems of Greece and Rome this union of priest and physician was discontinued from the period of the Esculapian institutions, but with the Gothic and other nations it was long maintained.

The Royal Society, founded in 1645, is the oldest of our scientific societies. As an off-shoot from it came the Mathematical Society, founded in 1717; this society existed independently for more than a century, and ended by becoming merged in the Astronomical Society in 1845.

The oldest of our purely medical societies is the Medical Society of London, founded in 1773, and still happily in vigorous and independent existence. Next came a Society for the Improvement of Medical and Chirurgical Knowledge, founded by John Hunter himself, in 1783, which had but a short life. The Royal Medical and Chirurgical Society was founded in 1805.

Two important non-medical scientific societies—viz., the London Institution and the Geological Society—were founded in 1807. Your own society, the Hunterian, was founded in 1819, and after it came the Pathological Society of London, founded in 1846, and numerous other medical societies, most of which are now merged in the Royal Society of Medicine.

THE NATIONAL INSURANCE ACT.

In recent years medical men have had to return to the primitive instinct and form societies, such as the Medical Defence Union, for the mere purpose of mutual support and defence; it is noteworthy that this has been the *last*, and not the first, motive for their association.

A fresh phase in this process is with us now. The British Government has passed a Bill through Parliament which professes to provide *adequate medical attendance* for 15,000,000 people. All medical men know that "adequate medical attendance" for the poor is not provided for by this Act, and that it cannot be so provided unless the Act is amended so as to place the medical service under medical control, which alone can make it a success.

The Act perpetuates by Government sanction the abominable slavery of medical treatment controlled by laymen, and if it is worked as it stands, will fasten the hateful yoke of cheap contract practice on the necks of thousands of medical men, and will reduce numbers of them and their families to penury.

Medical attendance on the poor, as Government service, should receive a fair remuneration like other departments of the Civil Service. There is nothing in the Act about *adequate medical remuneration*. It would be interesting to observe the effect on the legal profession of an Act which would reduce the remuneration of solicitors to a capitation fee of 4*s*. 6*d*. per annum. The leaders of the British Medical Association have invented a new definition of the word "*cardinal*" which is not understood by the rank and file of the profession.

If a government becomes responsible for the medical care of the poor such government care ought to reach a standard approximately like that within the reach of the rich. This the Act does not do. The medical aspect of the problem is purely medical, and any attempt at lay control and inspection of *medical treatment* or benefit is a gigantic fraud on the people, and an intolerable oppression of those engaged in the most self-sacrificing of all callings.

THE ORIGIN OF CANCER.

Fotherby on the occasion to which I have alluded said:—

> There are indications that we may be already on the threshold of grand discoveries which will be equivalent in the field of medicine to those of Newton in physics, by which we may not only recognise the secondary causes of diseases, but deduce the general laws which under these become active, and their correlation with the conditions and laws of health.

Anæsthetics were already discovered, but the work of Pasteur and of Lister was yet to come. We have seen that work and in it the fulfilment of Fotherby's forecast, for its importance to surgery is not less than that of Newton's work to physics.

We are now looking forward to further discoveries, as were the men of Fotherby's time—notably the solution of the cancer problem. You will all have listened to or read the lectures of surpassing interest on cancer recently delivered by a great surgeon and pathologist of our own day; the conclusion arrived at was that the problem was insoluble, for he said:—

> There is one, and only one, explanation of the conduct of the cancer cell—that it has been endowed with that wondrous gift which no man has seen and which no man can understand—the gift of life; and that, owing to that gift, it has become an independent creature, a new creation of living thing. The host in which it dwells has fashioned it out of his own tissues and in the likeness of his tissues, and, to borrow the figurative language of Scripture, the Creator has breathed into it the breath of life, and it becomes a veritable Frankenstein's monster, bent on the destruction of its host. After ages of past and present civilisation, during which searchers and philosophers have sought to explain the origin and nature of life, we have come no further than this, and he who discovers the true origin of cancer will have solved the enigma which has hitherto baffled the searchers and philosophers in all ages and of all countries.[2]

Surely it is true that the normal squamous cell, no less than the carcinomatous squamous cell, has had breathed into it by the Creator the breath of life. Surely the discovery of the intimate nature of tubercle, malaria, Mediterranean fever, tetanus, and other infective diseases did not solve the origin of life, and we may hope that the intimate nature of cancer and its treatment will be discovered without the workers in this field of science being oppressed by the tremendous problem which Sir Henry Butlin supposes must confront them.

No one has given any more satisfying explanation of the origin of life than that found in the Scripture—

> Thou, Lord, in the beginning hast laid the foundation of the earth: and the Heavens are the work of Thy hand.

All who labour to solve the problems of Nature may say with the Psalmist—

> I muse upon all Thy works, yea, I exercise myself in the works of Thy hands.

Hunter was a pathologist, even more than a surgeon, perhaps because the resources of surgery were in his day so limited. He certainly looked to pathology as the foundation for any new departure in surgical practice. In one of his earliest works there occurs a passage which I cannot but

[1] The Oration in Surgery delivered before the Hunterian Society, Jan. 10th 1912.

[2] THE LANCET, Dec. 2nd, 1911, p. 1539.

contrast with that which I have quoted from Sir Henry Butlin:—

> By persisting in this method of reasoning and attributing everything we are unable to explain to Divine intervention, we block up the gateway and stop up the sources through which come all that adorns life, promotes the arts, and increases the energy and capacity of the human mind. Who has explained the nature of the human body? Who has looked the phenomena of Nature through and through? No one. Many matters lie hidden in obscurity, from which they will not be dragged out without great labour, the united endeavours of many men, and the lapse of a considerable time.

HUNTER'S WORK ON POPLITEAL ANEURYSM.

In Hunter's works—especially in his writings on Inflammation and the Blood—we find clear evidence of his strenuous efforts to elucidate the problems of pathology. From the point of view of surgery, Hunter's name will ever be associated with the cure of popliteal aneurysm by ligation of the femoral artery. In the time of Hunter the only successful treatment of popliteal aneurysm was amputation; the old operation for the aneurysm when applied to the popliteal artery always ended in gangrene and death.

Into this tangle of hæmorrhage, gangrene, and death the genius of Hunter broke with resounding advantage. Notwithstanding the belief of his colleagues at St. George's that the artery was so diseased above the aneurysm that it could not be tied in continuity he affirmed that it was not—his argument was in fact this: if the artery can be successfully tied after amputation, why not tie the artery in continuity where it would be tied in amputation, and thus both save the limb and cure the aneurysm?

TREATMENT OF SURGICAL EMERGENCIES A CENTURY AGO.

A surgeon of to-day looking over the works of Hunter, or his immediate successors, cannot fail to be struck with the small place that surgical intervention then held in the treatment of emergencies. Even 30 years ago the risk attending surgical operations was so considerable that they were delayed as long as possible, whereas now so little is the risk and discomfort attending most operations that surgical intervention has become the method of choice for those affections amenable thereto.

In Hunter's time few conditions were considered as surgical emergencies—that is, as requiring an immediate surgical operation. External hæmorrhage, retention of urine, mechanical obstruction to respiration in the upper air-passages, and obviously depressed fracture of the skull would perhaps complete the list. When an injury to a limb required operation amputation was almost always resorted to; injured viscera were considered beyond surgical aid. Strangulated hernia was mostly treated by futile and dangerous expedients. So limited were the resources of surgery 100 years ago to deal with the lethal consequences of acute disease and injury that the contrast with the present time is amazing.

SOME EXAMPLES OF ABDOMINAL EMERGENCIES: INTESTINAL OBSTRUCTION.

Let us first take, for example, some of the emergencies of abdominal surgery. So recent is our knowledge of the proper treatment of intestinal obstruction that I myself remember the first case in which a median incision was made at St. Thomas's Hospital to discover the site of obstruction before the intestine was opened, the universal practice hitherto having been blindly to perform left lumbar colotomy, which, of course, in many cases was entirely useless.

Cases of acute obstruction are always with us.

CASE 1.—Some years ago a woman, aged 45 years, came under my care with an umbilical hernia of the size of a cocoanut. She had been vomiting, and had had acute pain for four days. Several attempts had been made to reduce the hernia by taxis. When I saw her she was very ill, and the odour that permeated the skin made it obvious that the intestine in the hernia was gangrenous. At the operation 12 feet of ashy grey and black, gangrenous small intestine were exposed, of which 6 feet had been returned by the taxis into the abdominal cavity. The gangrenous mass was cut away 6 inches on each side of the limit of dead tissue, through apparently healthy intestinal wall. The ends were brought out through the wound, and the patient was infused and stimulated. I intended to perform an anastomosis directly the condition of the patient justified the measure. She lived five days, but never rallied sufficiently for a second operation to be attempted. Food was ejected through the proximal opening in the bowel almost as soon as it was swallowed; the only nourishment that was retained for any length of time was a mixture of chopped oysters and cream.

At the post-mortem examination it was found that the proximal opening was only 12 inches from the distal end of the duodenum, and that both ends of the intestine were gangrenous for 2 inches from the line of section. It was, therefore, clear that at the operation I had not gauged correctly the full extent of the gangrenous process. This case is a good example of the danger attending the prolonged use of taxis.

CASE 2.—Again, a man, aged 30 years, of considerable muscular development, was admitted into St. Thomas's Hospital under my care about 20 years ago in a pulseless condition, with a right strangulated scrotal hernia. He had been in severe pain for five days and had been constantly vomiting. When he was brought to the theatre no pulse could be detected in the carotids, and only a feeble flicker could be heard over the heart with the stethoscope. No anæsthetic was necessary, the man seemed like one already dead. While I dealt with the hernia, a vein was opened in the arm and saline solution and brandy infused; the proportion of brandy used was one ounce to one pint of saline solution. By the time eight pints of this mixture had been slowly infused the pulse was full and bounding in all the arteries, and the man no longer seemed dead, but was so drunk and obstreperous that five men were required to hold him down.

Another instructive illustration of obstruction is the following:—

CASE 3.—A man, aged 21 years, was admitted to St. Thomas's Hospital two months ago. He had had very acute pain and vomiting for 36 hours and had previously for a long time suffered from what was called indigestion. The abdomen below the umbilicus was very much distended, there was shifting dulness in the flanks, and the liver dulness had disappeared. At the operation an acute volvulus of the last 2 feet of the ileum was discovered. This was extremely distended, black, and gangrenous. The distended gangrenous volvulus had forced the rest of the small intestine, which was bright red in colour, into the upper part of the abdomen, hence the obliteration of the liver dulness. The man seemed to be doing well for 26 hours, and then failed rapidly and died two days after the operation.

It is to be noted that an acute volvulus seen early may be suspected from the local distension it produces, and that it is amenable to immediate surgical intervention.

PERITONEAL INFECTION.

Again, think how recent is our knowledge of the rational treatment of abdominal disease and injury. Two thousand years ago Celsus wrote:—

> Whenever there is an injury from which survival is possible the immediate indications are two: to see that neither profuse hæmorrhage nor inflammation terminates life.

These indications are still true, but the means of preventing inflammation are a quite recent acquisition. We may now add that the signs which should lead us to diagnose a grave intra-abdominal injury, and therefore to operate, *are not, and they ought never to be, the signs of peritonitis.* Acute abdominal infections are all preceded by a stage in which the disease is purely local and can be ablated or rendered harmless by a simple operation.

Cases of peritoneal infection are now amenable to prompt operation as the following cases show. Similar instances could no doubt be related from the experience of anyone in active practice.

CASE 4.—A carman, aged 20 years, was admitted three days after having been taken ill with pain in the abdomen, vomiting, fever, and constipation. On admission the abdomen was slightly distended, rigid, tender, and motionless on respiration. Temperature 101° F., respirations 40, pulse 120. No tumour felt through the abdominal wall or per rectum; shifting dulness in the right flank. Immediate operation through the right rectus. The abdominal cavity was full of thin pus and all the intestines were bright red. The appendix was gangrenous and was removed. The pus was sponged away from all parts of the abdomen and drainage provided for. Saline solution was infused into the veins and pituitary extract injected hypodermically. On being put back to bed he was propped up and continuous saline infusion per rectum arranged for. Pain was relieved by omnopon and 30 c.c. of anti-colon bacillus serum administered. The patient made good recovery.

CASE 5.—Again, a soldier, aged 37 years, was admitted with a nine months' history of indigestion and a 17 hours' history of acute illness, which commenced with acute pain in the epigastrium. He had vomited, was breathing with difficulty, and was thirsty. The tongue was foul and the pulse quick. The abdomen was full, tender, and scarcely moved at all with respiration. No tumour was felt, the liver dulness had disappeared, and there was shifting dulness in the right flank.

Operation.—On incising the abdominal wall a great quantity of greenish fluid, gas, and stomach contents escaped. A hole of the size of a threepenny-piece was found in the stomach wall near the pylorus. The opening in the stomach was closed. As the stomach contents were widely distributed throughout the abdominal cavity and pelvis, it became necessary to extend the incision far below the umbilicus. The abdominal cavity was cleansed with large quantities of saline solution and then mopped dry, and the operation completed in the usual way. The patient made a good recovery.

In perforated gastric ulcer, when the opening in the stomach is large, there may be no external vomiting, the whole gastric contents being, as it were, vomited into the peritoneal cavity. In this case all the small intestine was red and inflamed. It is of supreme importance in all cases of perforation to operate before the onset of peritonitis; as in injury so here, the signs which should lead us to operate are not, and never ought to be, the signs of peritonitis. This patient has been well since his convalescence from operation. It is to be noted, then, that a gastro-enterostomy is not always necessary in the treatment of perforated gastric ulcer.

CASE 6.—Many years ago a barmaid was admitted to St. Thomas's Hospital with a perforated gastric ulcer of four days' duration. The perforation had occurred in the early morning when the stomach was empty; from that time until admission she had swallowed only neat gin. At the operation the small intestine was floating in gin; no peritonitis was found. She made an easy and rapid recovery. If you want to give your perforated gastric ulcer cases anything by the mouth, I therefore recommend to you the virtues of neat gin.

ACUTE APPENDICITIS.

The commonest illustration of an acute abdominal inflammation is acute appendicitis. On this subject Legueu well said:—

> Ask any surgeon, turn over the pages of any medical journal, and you will come across instances of those distressing cases where operation done too late has proved powerless to arrest the progress of lesions which have become too extensive. The prospect of spontaneous recovery and of medical treatment is a *decoy* to rely upon which is to be led into a snare; when once an appendicitis has commenced, whatever may be its aspect, we never know what it will become; and since the patient is now in any case condemned to operation at some time or other he may as well be assured of its benefits at once.
>
> To be quite just, opportunists—I mean opportunist surgeons—do not restrict themselves to systematic inaction. They have a lively dread of aggravation and do not abandon the patient to himself or even to medical treatment. On the contrary, they exercise a constant and minute supervision, they themselves see the case twice a day, and twice a day they examine the iliac fossa and pay attention to the pulse, the temperature, and the aspect of the patient. They are quite ready to intervene the moment that any indication of aggravation arises. They maintain that in this way they can forestall peritonitis or septicæmia.
>
> This line of conduct at first sight seems altogether rational. But in appendicitis all is deceptive and the most rigorous supervision may be found at fault for three reasons—(*a*) Because in the course of appendicitis there are often treacherous periods of calm; (*b*) because aggravation is sometimes so rapid as to derange all measures of precaution; (*c*) lastly, because the symptoms which reveal this aggravation are neither constant nor reliable. Even with the most rigorous supervision temporising exposes the patient to risk of irreparable damage. For some patients who have got well with medical treatment there are others who have died victims of this same medical treatment and of temporising.
>
> I hold, then, as injurious this practice of applying medical treatment in order to wait, watch, and operate should occasion arise. I have often regretted operating too late, but I have never had any occasion to repent of having operated too soon; early operation does away with all the dangers of temporising.

CASE 7.—The case of a girl aged 15 years, a near relative of mine, is an apt illustration. I saw her at 2 P.M. on a certain day last February. She had remained in bed during the morning, as she had been unable to sleep in the night and was not feeling well. When I saw her she had been sleeping and was drowsy, the face was flushed, there were uneasy sensations in the abdomen, the temperature was 100° F., and the pulse 90. I did not visit her again until 7 P.M., when I found the right side of the abdomen tender and moving irregularly with respiration. The drowsiness had persisted, the pulse was 110, and the temperature 101°. At 9 P.M. the intensely inflamed appendix was removed by Mr. G. H. Makins; there was already free fluid in the abdomen.

Would this case have been well treated by an opportunist surgeon? Would she have survived had the operation been deferred until the next day? The toxic infection in this case was the symptom which appeared to me the most grave.

This grave symptom, toxæmia, is also illustrated by the following case.

CASE 8.—Four weeks ago, about 6 P.M., a girl, aged 14 years, was brought to my house on her way home from a school on the south coast. Six weeks previously at the school she had had an attack of appendicitis with fever, vomiting, and abdominal pain, from which it was thought she had completely recovered. The last night at school she had not slept, and had again felt some pain in the abdomen. She had said nothing of this lest she should be kept at school. During the railway journey to London she had suffered from abdominal pain and nausea, and her mother said that she had not spoken a word. When I saw her she was drowsy, the face was flushed, and the tongue thickly furred; temperature 100° F., pulse 106. Decided tenderness over the right iliac fossa, and the muscles of this region remained immobile during respiration. Operation same night; appendix nearly gangrenous, free fluid in the abdominal cavity. For ten days after the operation the toxæmia continued, the symptoms being drowsiness without sleep, temperature 100°, pulse 100, very furred tongue, septic roseola of face and trunk, constipation, thirst, nausea, and vomiting. The vomit was small in quantity, and its odour was very foul. During this time she took only soda-water and repeated small doses of calomel.

Was I right in operating at once? Or would it have been better had the patient fallen into the hands of an opportunist surgeon? Other acute abdominal conditions which must be treated on similar principles are perforation of typhoid ulcer, duodenal ulcer, acute cholecystitis, and some forms of pancreatic disease.

Those who have visited Freiburg cannot fail to be struck with the great addition to our resources for dealing with the emergency of foreign bodies in the œsophagus and air passages that is afforded by the methods of direct bronchoscopy and œsophagoscopy.

ABSCESS OF BRAIN.

As an example of infective disease within the skull abscess of brain may be given. Operation should never be deferred when once the diagnosis is made, or is probable. I have known instances in which operation has been arranged for the next day, but the patient has died in the night.

CASE 9.—A man, aged 48 years, was admitted to hospital with chronic otorrhœa on the right side. He had lost a son a year previously from cerebellar abscess. The patient was a gardener, and said that for three weeks he had had slight headache and had once vomited. His main complaint, however, was that he had lost the sense of smell, being unable to distinguish in this way between roses and violets. On examination the right pupil was found to be stabile, and the right optic disc blurred. Operation forthwith. A large abscess in the right temporo-sphenoidal lobe was drained through its stalk, which was adherent to the diseased tegmen tympani. Rapid convalescence; no hernia cerebri; recovery of the sense of smell.

MOIST GANGRENE OF FOOT.—COMA.

Moist gangrene of the foot associated with glycosuria, and sometimes also with albuminuria, is a very dangerous disease, but is not always fatal. I have had more than one patient under my care with gangrene of the foot with these complications in whom amputation through the thigh was followed by recovery and the disappearance of both sugar and albumin from the urine. In such cases the urinary condition must be looked upon as secondary to the gangrene.

Coma, as we all know, occurs in patients with sugar in their urine, and it may follow some slight operation, such as an incision, and it always seems a hopeless and inaidable state, but on one occasion, many years ago, I succeeded in bringing such a patient back to consciousness before death ensued. The patient was bled from one arm to about a pint and at the same time saline infusion was commenced in the other arm. This was continued for several hours until nearly 20 pints of saline solution had been infused. The patient

regained normal consciousness for about 18 hours and during that time was quite competent to sign a will. Before the infusion commenced a soft catheter was passed into the bladder. It is very remarkable that at the conclusion of the infusion there was no urine in the bladder and none had escaped during the infusion. When the coma returned a second infusion had no effect. Similar treatment was recommended for the uræmia of Bright's disease by my late teacher, Dr. Charles Murchison.

CALCULOUS ANURIA.

Another emergency, of which not all surgeons have had experience, is calculous anuria. The suppression of urine comes on suddenly. It may remain absolute. I have had one case of this sort under my care.[3]

It is very remarkable that in most such cases, no matter how complete the suppression may be, the patient scarcely seems to suffer during the first seven or eight days, except perhaps from insomnia, slight nausea, and some failure of muscular strength. At the end of that time manifest symptoms of the effect of retained poisonous matters on the system arise and death occurs two or three days later. This is the usual history of calculous anuria which the surgeon must interrupt by operation at as early a stage as is possible. The modern methods of investigation will probably enable him to operate with much more confidence than was possible 20 years ago.

In calculous anuria the condition usually present is obstruction of one ureter and reflex inhibition of secretion in the other kidney; in some cases the other kidney is disorganised from old-standing disease. In either case operation should be performed upon the kidney last obstructed, to which the site of pain or of renal tenderness may be a guide.

Some remarkable recoveries from this condition have been recorded.

CASE 10.—Duret was called to a medical practitioner who had a second attack of calculous anuria a few days after he had spontaneously recovered from a first. The patient was much prostrated, and while Duret was present he had violent convulsions, the face became cyanosed, and the pulse small and irregular. Nephrotomy was done at once; no anæsthetic was required. Two large drainage-tubes were placed in the renal pelvis. During the night urine soaked through the dressing, and normal micturition commenced the next day. The patient recovered and resumed practice.

Chevalier performed nephrotomy on a woman, aged 63 years, on the fourteenth day of anuria; the patient was semi-comatose and her temperature two degress below normal. She recovered.

RENAL HÆMORRHAGE.

CASE 11.—Many years ago a costermonger, aged 45 years, tall, thin, and weatherbeaten, was admitted to St. Thomas's Hospital bleeding freely from the urethra. He had never before had any illness. The bleeding continued in spite of all measures taken to arrest it. It was obviously coming from the kidney, for numerous long clots, casts of the ureter, were passed. The right kidney, though not enlarged, was tender. By the fifth day he had become very anæmic and weak. An incision was made in the right loin; on drawing the kidney out through the wound it appeared healthy. On incising the pelvis it was found full of clot; this was removed. No angeioma or calculus was found. No further bleeding recurred and the man rapidly convalesced. In a week he left the hospital because I would not allow him to have a pint of brandy a day. It turned out that this man was a prince of costermongers; he owned 40 barrows, and he told me that as he was out in all weathers, by night and by day, he allowed himself a pint of brandy daily. I have never seen him since.

INTERNAL HÆMORRHAGE.

Surgical emergencies now cover a very wide field and a treatise, not a lecture, is required for their discussion. I have time to relate only a few more examples of emergency surgery.

As the study of inflammation is the foundation of pathology, so the surgery of the blood-vessels is the foundation of surgery. The principle of the treatment of hæmorrhage is that the bleeding vessel must be found at the site of injury and there tied or otherwise effectually secured. This was long practised in external hæmorrhage before any attempt was made to deal with internal hæmorrhage in the same way. Ligation of an artery in its continuity at some distance from the injured spot is only on rare occasions justifiable. Since the discovery that the great arteries may be successfully sutured it is no longer always necessary to destroy their continuity when wounded.

External hæmorrhage I must pass by, but I will cite one or two examples of internal hæmorrhage. The arrest of internal or concealed hæmorrhage is one of the great triumphs of modern surgery. Let us take a few examples from among many available.

Hæmorrhage into the abdominal cavity in large quantity occurs commonly from one of four conditions—ruptured tubal gestation, and rupture of the liver, spleen, or mesentery. The bleeding is rapid and profuse, sometimes so much so that death occurs before anything can be done, but in some cases a few hours are allowed during which life can be saved.

RUPTURED TUBAL GESTATION.

Ruptured tubal gestation is one of the commonplaces of ordinary practice. These cases sometimes come into the general surgical wards as cases of peritonitis. There is generalised tenderness over the abdomen which has come on so rapidly since the commencement of the illness that, as Cullingworth pointed out, it cannot be due to inflammation. There are the usual signs of hæmorrhage, but this superficial tenderness is the one sign I wish to emphasise.

How simple is the treatment! An abdominal incision is made, blood and clots gush out, the hand is introduced through a mass of clot, the fingers seize the ruptured bleeding tube, and so arrest the hæmorrhage. At the same moment saline infusion is begun in the vein of the arm, for it is futile to practise infusion while the injured vessel is still unclosed.

RUPTURED SPLEEN.

Take again a case of ruptured spleen such as the following:—

CASE 12.—A boy, aged 10 years, fell through a height of about 10 feet on to some large stones against which he struck his left side. When seen he was pale, pulse 130, and temperature 100·8° F. He was very restless, respiration thoracic, shallow and quick, alæ nasi moving. Abdomen distended and immobile; no clear resonance anywhere, so that it could not be ascertained whether or not the dulness in the loin disappeared on turning the patient over on to the other side. Immediate operation found the belly full of blood and the spleen completely torn across. The pedicle was seized and the ruptured spleen removed; the clots were cleared away and the wound closed. The patient made a good recovery.

HÆMORRHAGE FROM THE HEART.

No more formidable example of thoracic hæmorrhage can be chosen than that of hæmorrhage from the heart. Ovid[4] said: "By no resource can wounds of the heart be healed"; and Billroth, only a quarter of a century ago, wrote: "Let no man who hopes to retain the respect of his medical brethren dare to operate upon the human heart." Yet since Billroth's time more than 150 cases of attempted suture of wounds of the heart have been recorded with 30 to 40 per cent. of recoveries. Schnitzler's case is a good example:—

CASE 13.—A male, aged 16 years, attempted suicide by stabbing himself with a large pocket-knife over the heart. When seen there was a wound about 1½ cm. long near the left nipple; there had not been much external escape of blood, but the patient was blanched and had a feeble and quick pulse. About three-quarters of an hour after the injury morphia was given hypodermically and the patient placed under chloroform. The chest was opened by enlarging the wound and removing the fifth costal cartilage up to the sternum. The left pleura had been wounded by the stab, and air and blood escaped from it. About 3 cm. of the fourth costal cartilage was then removed, and a second incision made at right angles to the first. A transverse wound was found in the pericardium. This was enlarged and held open; a wound of the right ventricle

[3] This condition was first treated by operation by Mr. Lucas at Guy's, October, 1885.

[4] "Sanäbit nulla vulnera cordis ope." Ovid was a sentimental fellow, not a surgeon, and he may have been referring to those wounds of the heart which were no doubt as frequent in his day as in ours, but which no surgeon inflicts and which the art of surgery is powerless to cure.

near the septum was disclosed. It was plugged with a finger of the left hand and closed by silk sutures. The pericardium was cleared of clots and then sutured; the pleura was drained. The patient afterwards had pneumonia on the right side and empyema on the left, for which latter the usual operation was performed and he made a good recovery.

In 1882 Bloch, of Berlin, studied in animals the healing of wounds of the heart and so laid the foundation of cardiac surgery. The first successful suture of a wound of the heart was done by Rehn in 1897. Not only stab wounds but gunshot wounds of the heart have been successfully operated on. Dupont collected 31 cases: in 11 death was immediate, so that nothing could be attempted; in 20 operation was done, and 8 survived the immediate effects of the operation.

WOUND OF PULMONARY ARTERY.

In the following case, reported by Mauclaire, a wound of the pulmonary artery was found.

CASE 14.—A male, aged 17 years, had been stabbed with a triangular file. There was a wound in the third left intercostal space, not bleeding externally. The cardiac dulness was much enlarged, and there was pneumothorax on the left side. On operating, air and blood were found in the left pleura. There was a wound in the upper part of the anterior surface of the pericardium corresponding to that in the skin. On enlarging the pericardial wound, a wound in the pulmonary artery was found. The edges were seized with Kocher's forceps and the wound was closed with three perforating sutures. The patient bore the operation well, but hæmorrhage into the thorax recurred next day, and the patient died. The condition of the wound in the artery was not ascertained.

REMOVAL OF CLOT FROM PULMONARY ARTERY.

Perhaps the most astounding instance of vascular surgery is the removal of clot from the pulmonary artery. This was done by Trendelenburg.

CASE 15.—Trendelenburg's patient was a man, aged 45 years, in the early stage of tabes, who slipped and fractured his left femur. One day about a month after the accident he had a slight rigor, and a quarter of an hour later he had sudden dyspnœa and cyanosis. For 10 or 15 minutes he seemed to improve, and then suddenly got so much worse that death was evidently imminent. In this emergency an attempt at surgical relief was made.

The pleura was opened at the level of the second rib, and through the pleura the pericardium was opened at the level of the third rib; the aorta and pulmonary artery were held up with a curved sound. These vessels no longer pulsated, and only slight and irregular contractions of the heart were to be seen, and the breathing ceased almost directly. The pulmonary artery was compressed by traction on the sound, an incision was rapidly made in the vessel, and the wound dilated. With a polypus forceps a thrombus 34 cm. long was extracted. The forceps was again introduced three times in rapid succession, and three other smaller thrombi brought away; after this came fluid blood.

Tetanic twitchings of the body muscles showed the urgent need of oxygen for the brain. The lips of the wound in the pulmonary artery were held together with forceps, the constriction of the aorta and pulmonary artery was removed, and artificial respiration was commenced. Natural breathing soon was resumed, and the pulsation of the aorta and pulmonary artery at once recommenced. The wound in the pulmonary artery was sutured. Troublesome bleeding occurred from the internal mammary artery. Before closing the external wound the Roth-Dräger apparatus was applied to get rid of the pneumothorax.

On recovery from the anæsthetic the patient was breathing fairly quietly, but the pulse, though fairly strong, was 120–140. Until the next morning the patient seemed to be doing well. From that time the condition became gradually worse, and death occurred 37 hours after the operation.

At the necropsy a thrombus about 5 cm. long was found in the left branch of the pulmonary artery, and in a small branch of the right pulmonary artery was another small clot. The wound in the pulmonary artery was securely closed. There was no blood in the pericardium. In the left pleura was a considerable quantity of fluid blood, the greater part of which had apparently come from a secondary hæmorrhage from the internal mammary artery, which had not been perfectly secured.

Trendelenburg says:

> The necropsy left no doubt that the emboli came from the right femoral vein. Probably they entered the pulmonary artery in three divisions. The slight rigor with which the attack began was caused by a small embolus like that found at the necropsy in one of the minor divisions of the right pulmonary artery; then came larger clots which possibly came from the iliac vessels. These cut off a considerable area of the lung from the pulmonary circulation, and led to the first severe attack of dyspnœa, heart weakness, and anxiety. Some improvement took place in these symptoms, perhaps because a particular disposition of the emboli allowed the increased heart's action to send blood to more of the pulmonary capillaries. Lastly, came the long thrombus which almost completely blocked the main trunk. The closure was not absolute when the operation was commenced, for had it been so pulse and respiration would have ceased earlier. From the time when the respiration suddenly became worse to the moment of incision of the pulmonary artery ten minutes only elapsed.

When I was in Leipzig Professor Trendelenburg kindly demonstrated at my request on the dead body the method of operation. I have practised this operation on the cadaver but have not done it on the living. I show you Trendelenburg's instruments. It has been found experimentally that the aorta and pulmonary artery must not be obstructed for more than a minute and a half, but I found that in the post-mortem room 40 to 45 seconds is ample time in which to complete the manipulation. The pleura can be pushed aside and need not be opened.

The progress of thoracic surgery is wonderfully illustrated by Trendelenburg's operation. The formidable complications barring advance in this region of the body have been the occurrence of pneumothorax and collapse of the lung. In the future thoracic surgery will be set free from these dangers. Willy Meyer, for example, has successfully resected experimentally the intrathoracic portion of the œsophagus in a chamber in which it was possible to operate either under positive or under negative differential pressure or under a combination of the two; and ere long we may hope that surgery will be as useful in disease or injury of the lung and heart as it is in like conditions of the abdominal organs.

INTRACRANIAL HÆMORRHAGE.

In the head the question of the treatment of hæmorrhage is not so much one of securing a bleeding vessel as one of relieving pressure on the brain and allowing the extruded blood to escape. The amount of an intracranial hæmorrhage, viewed as mere loss of blood, is but seldom formidable.

The treatment of the intradural hæmorrhages of the newly born is one which has not, as yet, very freely permeated the profession, but it is of great importance, for if these infants survive they must be the victims of palsy, epilepsy, or mental defects. The treatment by craniectomy has been shown by Harvey Cushing to be very satisfactory. The diagnosis in characteristic cases is not difficult. Inability to suck, post-natal asphyxiation, a bulging fontanelle without pulsation, convulsions, unilateral palsy, subconjunctival hæmorrhage, and proptosis oculi were the most prominent symptoms in Cushing's cases.

In some cases of ordinary cerebral apoplexy I think the immediate danger to life might be averted by lumbar puncture or repeated lumbar puncture. The cerebral hæmorrhage is associated with an increase of cerebro-spinal fluid. In a recent experience I withdrew on two occasions 1½ oz. of blood-stained fluid, on the first occasion with marked relief of symptoms; headache and restlessness disappeared and five hours' sleep was obtained.

In heat apoplexy, which may be described as a hæmorrhagic meningitis serosa, lumbar puncture may be curative, as the following case shows.

CASE 16.—A man, aged 53, in one of the hottest days of July, when exposed to the sun, became unconscious suddenly. With care and ice to the head he had recovered three days later, but complained a good deal of headache as he lay in bed. The next day a relapse took place, and on the fifth day he was again completely unconscious. On the sixth day I saw the patient with Mr. A. S. St. John, of Eltham. He was completely comatose, Cheyne-Stokes breathing, temperature 104° F., pulse 60, urine and fæces passed in bed. Lumbar puncture was done and 1½ oz. of pink fluid were withdrawn. In 12 hours consciousness had completely returned. Four days later a relapse took place and complete coma again supervened. Lumbar puncture was successful a second time. Consciousness returned in a few hours and the patient from this time made an uninterrupted recovery.

In apoplexy with resultant paralysis and other symptoms it has been shown that the capsular clot can be removed, or

rather removes itself by extrusion, when an incision is made in the brain. Such symptoms as hemianæsthesia, aphasia, word-blindness, &c., have cleared up after removal of the clot.

ARTERIO-VENOUS ANASTOMOSIS.—SUBCLAVIAN ANEURYSM.

The wonderful work of Carrel and Guthrie has made it possible to anastomose an artery with a vein. Gluck was the first successfully to perform arterio-venous anastomosis in man. Until this advance was made the emergency of senile gangrene usually necessitated amputation through the thigh. Now the femoral artery may be anastomosed with the femoral vein, and the venous system thus made to carry arterial blood to the foot. In this way the gangrene may be arrested and the limb saved.

In conclusion, let me show you a picture of a patient whose innominate artery I successfully tied two months ago for the relief of subclavian aneurysm. What would John Hunter have given to be present at this operation?

THE FUTURE OF SURGERY.

The science and art of surgery in my lifetime have achieved what in my student days would have been looked upon as but the most magnificent promises of impossibilities. Kindled by the past, we can look forward with confidence. In groping our onward way "upon the bank and shoal of time" to clearer knowledge in the mysterious world of disease, let us listen a moment to, and derive inspiration from, the words of Paracelsus:—

> I go to prove my soul!
> I see my way as birds their trackless way.
> I shall arrive! what time, what circuit first,
> I ask not: but unless God send his hail
> Or blinding fireballs, sleet, or stifling snow,
> In some time, His good time, I shall arrive:
> He guides me and the bird. In His good time!

Can we venture to forecast the future of surgery? Can we

> Look unto the seeds of time
> And say which grain will grow and which will not?

Surely the ancient prophecy that "many shall run to and fro, and knowledge shall be increased" is being fulfilled in our own time and will continue to be fulfilled in the time to come. "There are many events in the womb of time which have yet to be delivered."

> For these things tend still upward, progress is
> The law of life, man is not Man as yet.

Researches
INTO
SENSORY DISTURBANCES FROM CEREBRAL LESIONS.*

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(Concluded from p. 83.)

III.—SENSORY DISTURBANCES PRODUCED BY LESIONS OF THE CEREBRAL CORTEX.

In describing the effect of a cortical lesion upon sensibility we shall proceed exactly as with lesions of other parts of the nervous system. All such expressions as "cutaneous sensation" and "light touch" will be strictly avoided, and we shall deal as far as possible with measured stimuli only. Thus, for instance, we shall not speak of "deep sensibility" as preserved or lost, but shall give the exact stimuli used and the form of response they evoked.

1.—GRADUATED TACTILE STIMULI.
(Von Frey's Hairs and Pressure Æsthesiometer.)

Lesions at lower levels of the nervous system produce, on the whole, forms of altered sensibility which react with remarkable constancy to graduated stimuli. A touch of definite intensity, if sufficiently strong to evoke a sensation, will do so in a large proportion of instances, while some less intense stimulus will cause no sensation of any kind. Somewhere between these two we are justified in placing the threshold for tactile sensibility.

But the characteristic change produced by a cortical lesion consists essentially in a want of constancy and uniformity of response to the same tactile stimulus. Increasing the stimulus does not necessarily improve the patient's answers, and in many cases a threshold cannot be obtained. On attempting to obtain a maximum threshold on the affected hand we meet with the same curious irregularity of response that has hampered all who have attempted to use graduated stimuli in such cases; the patient seems to be untrustworthy. At one time he responds to a hair of 21 grm./mm.^{2}; at another even 100 grm./mm.^{2} produces no effect. Not only are his answers apparently incalculable, but not infrequently he responds when he has not been touched.

This irregularity has led most observers to reject all graduated stimuli and to adopt some other form of tactile stimulation, such as rubbing with the finger or with cotton-wool, to which the answers are more uniform. But in this irregular response to graduated tactile stimuli lies the key to the sensory disturbance produced by lesions of the cerebral cortex.

We have modified the method of examination in the following manner so as to bring out the true nature of this phenomenon. A hair is selected producing a stimulus just above the maximum threshold, to which the normal hand reacts with constancy when it is applied 16 times in the minute. If the same hair is applied in the same manner to a corresponding part of the affected hand the responses are irregular and wanting in uniformity. Then more powerful hairs are used up to those exerting many times the pressure. Still the response remains irregular; in fact, the answers may be less accurate with the more powerful stimulus than to the finer hairs. But further stimulation with the hairs of lower grade does not of necessity materially reduce the proportion of correct answers. The irregular response to the more powerful hairs cannot, therefore, have been due to fatigue alone.

We are, therefore, compelled to use some other form of measurable stimulus, and choose the pressure æsthesiometer, in which measured weights may be brought to bear on a surface of 3 mm. in diameter. In one of our cases the normal hand responded constantly to a pressure of 2 grm., the minimum weight we could apply with this apparatus. But on the abnormal hand the answers showed the same remarkable tendency to irregularity that was present when it was stimulated with graduated hairs. Here it is impossible to say that any tactile threshold can be obtained in the sense usually given to the term. A part that was sensitive to a hair exerting a pressure of 0·36 grm. was not constantly sensitive to a pressure of 30 grm.

This uncertainty of response is not the only peculiarity met with in examining the affected part with measured tactile stimuli. Fatigue is induced with unusual facility, and a part that has responded in the characteristic manner to one of the less powerful hairs may fail altogether to respond to 100 grm./mm.^{2} This is, however, an extreme reaction seldom, if ever, seen in uncomplicated cortical cases.

Another disturbing factor in the response to graduated tactile stimuli is the occurrence of hallucinations, or replies that are not the direct sequel to a stimulus. We believe that this tendency to hallucinate is not due to any general untrustworthiness on the part of the patient, but is another aspect of the irregular response characteristic of cortical loss. On one occasion a patient gave so many hallucinatory answers to graduated hair-stimulation of the affected hand that all testing became impossible. But in spite of this "untrustworthiness" the answers obtained from the normal hand and from the soles of both feet were excellent, and in each of these parts a perfect threshold could be worked out.

Many of our patients are highly intelligent; if they are asked to describe their sensations at the time they are hallucinating, introspection leads them to remarkably similar conclusions. They start by saying that a sensation from the affected part differs from that evoked by the same stimulus on the normal hand or foot. The hair seems to remain in contact with the skin, and after a series of touches a continuous sensation is produced. Upon this continuous sensation each consecutive touch may or may not produce

* These Researches appear in complete form in Brain, vol. xxxiv., 1911.

that additional change recognised as a fresh contact. But at times the sensation interpreted as another contact may arise without actual stimulation, and sometimes it may even recur several times. These hallucinations are, in fact, the direct consequence of that persistence of sensation so frequently a feature of the changes produced by a cortical lesion.

Frequently tactile sensibility is less grossly affected by a cortical lesion. The response may still be irregular and the sensation of contact may persist, but with stronger stimuli the proportion of replies increases until, perhaps, every contact may evoke an answer. Under such circumstances the affected part may exhibit unusual signs of fatigue, although general attention, shown by the response on the normal side, has undergone no diminution. Moreover, the sensations of contact tend to persist, and hallucinations may break an otherwise perfect series of replies.

Whenever a tactile threshold can be obtained, sensibility as a whole is comparatively slightly affected. No form of sensory appreciation is completely lost, and some approximation to a threshold can be discovered with other graduated tests, such as the compasses.

We can sum up the conclusions to which we have arrived as follows:—

1. A cortical lesion may reduce the accuracy of response, from the affected part, to graduated tactile stimuli. The form assumed by this defective sensibility differs from that produced by lesions at other levels of the nervous system. The affected part may respond to the same graduated hair as the normal hand; but this response is irregular and uncertain. Increasing the stimulus may lead to no corresponding improvement, and even the strongest tactile hair may occasionally evoke less certain answers than a hair of much smaller bending strain. Moreover, a touch with the unweighted æsthesiometer may be as effective at one moment as the same instrument weighted with 30 grm. at another. In such cases no tactile threshold can be any longer obtained.

2. This irregularity of response is associated with persistence of the tactile sensation and a tendency to hallucinations of touch. Where the sensory defect is not sufficiently gross to abolish the threshold, persistence, irregularity of response, and a tendency to hallucinate may still disturb the records.

3. In all cases where tactile sensibility is affected, whether a threshold can be obtained or not, fatigue is induced with unusual facility. Although the patient may cease to respond to tactile stimuli over the affected part in consequence of fatigue, his answers will remain as good as before from the normal parts. The fatigue is local and not general.

4. With stationary cortical lesions, uncomplicated by states of shock or by diaschisis, sensibility to touches with cotton-wool is never lost over hair-clad parts. Over hairless parts stimulation with cotton-wool may produce a sensation which seems "less plain" to the patient, and his answers may show the same inconstancy so evident when he is tested with graduated tactile stimuli.

2.—MEASURED PAINFUL STIMULI.

In all lesions of the sensory path below the optic thalamus some loss of sensation to painful stimuli is of common occurrence. But we have never discovered any disturbance of this form of sensibility as the consequence of a stationary cortical lesion, except when the lesion was recent or unless the patient had suffered recently from convulsions, or had been subjected to other causes of shock.

A prick is the only effective means of applying a measurable painful stimulus to the skin. But all mechanical means for measuring the force needed to evoke a sensation of pain when a sharp point is thrust into the skin labour under the same disadvantage. Any sharp object, such as a needle, produces first of all the recognition that the stimulus is pointed: further pressure adds to this a sensation of pain. Now it is almost impossible to prevent the ordinary patient from saying that he is pricked whenever he appreciates that the stimulus is a sharp point, and if he is told to wait until he obtains a sensation of pain we run the risk of placing the threshold too high.

Usually the patient can discover no difference between two pricks of the same force applied to similar portions on the two sides of the body, but occasionally he states that the stimulus is "plainer" or "sharper" on the normal than on the abnormal part. This difference in sensation is accompanied by no raising of the threshold either to prick or to painful pressure. The readings obtained with the prick-algesimeter, or with the pressure-algometer, are the same on the two sides. Moreover, the patient shows no more signs of discomfort from the one side than from the other, with the same stimulus. We therefore believe that this want of "plainness" or "sharpness" of which the patient may complain is due to a want of distinct appreciation of the pointed nature of the stimulus; that is to say, the want of "plainness" or "sharpness" is not due to a diminished sensibility to the painful aspect of the prick.

The pressure-algometer gives a measure of discomfort rather than pain. To this coarse stimulus the affected part responds as readily as the normal, and we have found none of that over-reaction so prominent a feature with lesions of the optic thalamus.

Thus pure cortical lesions cause no increase or decrease of sensibility to measured painful stimuli. But if the cortical destruction is recent or progressive, or if it produces convulsions, however slight, remarkable defects may appear in painful sensibility. The threshold, not only to prick but to painful pressure, may be considerably raised, and sometimes even coarse pricking may fail to evoke a sensation with any certainty. In fact, we may be face to face with a truly diminished sensibility to painful stimuli closely resembling the loss produced by interference with sensory impulses at a lower level. These changes are due to shock, exhaustion, and to the state called by Monakow "diaschisis." They are due to a profound disturbance of function extending back beyond the level of the sensory cortex and affecting even the receptive mechanism in the optic thalamus.

In conclusion, a pure cortical lesion leads to no change in the threshold to measurable painful or uncomfortable stimuli. Nor does the patient express greater dislike to these stimuli on one side than on the other. A prick may be said to be "plainer" or "sharper" on the normal than on the affected side, but this is due to a defective appreciation of the pointed nature of the stimulus and bears no direct relation to the painfulness of the sensation evoked.

3.—TEMPERATURE.

Many cortical lesions produce no change in the response to thermal stimuli, provided those periods of shock which follow an operation or an epileptiform seizure are strictly avoided. In other cases, however, we found definite changes in the sensibility of the affected parts to heat and cold, although the lesion had remained quiescent for many years. In every case the nature of the disturbance in sensation was similar, and consisted essentially in an increase of the range within which a thermal stimulus was thought to be neither hot nor cold. Normally this neutral zone varies greatly under different conditions and in different persons. It usually occupies from 2° to 5° C., but its position on the scale shifts with the external temperature. At any moment it can be raised or lowered by warming or cooling the hand; but although the position on the scale may be shifted by adaptation the interval in which a thermal stimulus is thought to be neither hot nor cold is materially altered.

Fortunately, in all our cases we were able to compare the behaviour of the normal and the affected sides of the body under the same conditions and with equal care. Now, whenever the appreciation of thermal stimuli was affected by a cortical lesion, this neutral zone extended over a greater number of degrees than on the normal hand. Not only is the range of the neutral zone increased, but the responses from the affected hand are slow and irregular compared with those obtained from normal parts under similar conditions. Moreover, the power of comparing two thermal stimuli, applied either together or in sequence, may be diminished. Here, as with the defects of tactile sensibility, it is the power of discrimination, the faculty of comparing two stimuli with one another, which is disturbed by cortical lesion. The only actual loss of sensation, therefore, falls upon that part of scale where thermal recognition habitually depends on some previously existing standard. In conclusion, we find that the appreciation of heat and cold was not affected in a considerable number of cortical lesions. But whenever thermal sensibility was disturbed the following changes were found:—

1. The neutral zone, within which the stimulus was said to be neither hot nor cold, was considerably enlarged in comparison with that observed on similar normal parts of the same patient.

2. The patient complained that, although he recognised correctly the nature of the stimulus, it seemed "less plain" than over normal parts. His answers were less constant and less certain; a temperature recognised without difficulty at one time seemed doubtful at another.

3. The power of discriminating the relative coolness of two cold stimuli or the relative warmth of two hot tubes may be diminished. Thus 20° C. may be said to be the same as ice, although both are uniformly called cold, and 40° C. may seem as warm as, or even warmer than, 48° C. The faculty of appreciating the relation to one another of two temperatures on the same side of the scale is disturbed.

4.—THE APPRECIATION OF POSTURE AND OF PASSIVE MOVEMENT.

Inability to recognise the position of the affected part in space is the most frequent sensory defect produced by lesions of the cerebral cortex. In some cases this and the allied faculty of recognising passive movement may be the only discoverable abnormalities. Whenever sensation is disturbed at all these two forms of spacial recognition will be certainly affected. Since some disturbance of the power of recognising passive movement always accompanies defective postural recognition, these two kindred faculties will be dealt with together in this section.

(*a*) *Recognition of Posture.*

In most cases of cortical disease, the usual rough method of testing is amply sufficient to demonstrate defective appreciation of posture. The patient's eyes are closed, and the affected limb is placed in some position different from that in which it lay at first. He is then told to touch some part of it, such as the index finger, with his normal hand. At first he usually fails to find the limb; when at last he strikes some part of it he moves his indicating hand down to find the finger he was asked to touch. Should the power of localisation remain intact he can ultimately grope his way to the exact spot; but if localisation is also affected, although he may reach the hand, he will probably be unable to find the finger.

So gross is the defective recognition of posture in most cases that this method amply suffices to demonstrate it in an unequivocal manner. Horsley [10†] has, however, introduced a useful means of measuring this deviation from the normal. The finger to be tested is applied to the one surface of a glass plate divided by lines into measured squares, and with the free hand the patient seeks to indicate on the other surface of the plate the position of the finger he is seeking. Ths results of his attempts can be read off on the measured plate. Instead of this glass plate we have used a piece of stiff cardboard. In the centre of the one surface of this cardboard is a slight depression to receive the tip of the index fever, and on the other a sheet of white paper can be fixed. With the normal hand the patient seeks to indicate the position of the affected finger, which remains at rest in the depression. The point upon which he ultimately settles is marked on the paper. His indicating hand is then withdrawn, and he is asked to make another attempt. Each record of a series of observations made in this way can be measured and collated at leisure.

In every case where sensation was disturbed in any way, however slightly, as the result of a cortical lesion the records with Horsley's plate showed some loss of postural appreciation in the affected hand. This method, therefore, forms a delicate means of detecting sensory changes of cortical origin.

The deviations discovered by Horsley's method, even in normal individuals, are so considerable that it is necessary to have some standard in each patient with which to compare the records obtained from the affected parts. It might be objected that most cortical lesions produce so much paralysis that the affected hand cannot be used to point out the position of the normal forefinger. But in spite of its paresis and defective sense of posture, the records obtained when the affected hand sought the normal forefinger were uniformly better than when the patient attempted to point to the affected forefinger with his normal hand. That is to say, defective appreciation of the position of the hand to be sought for has a more disturbing effect upon the records than weakness and loss of postural sense in the indicating hand.

† These and other reference numbers relate to a bibliography at the end.

All these tests depend on knowledge of the position in space of the extremity as a whole. To what extent its separate segments are affected can only be discovered by asking the patient to imitate, as exactly as possible with his normal limb, the posture of the affected part. His eyes are closed and, whilst his attention is diverted by conversation, some part such as the index finger is moved into the desired position. After an interval he is asked to place his normal index in the same position as the index of the opposite hand. By this means we have been able to confirm the statements of most recent writers that the gravest loss produced by a cortical lesion is usually found in the extremity of the limb (Goldscheider [9], Petrén, Bergmark [1]).

(*b*) *Recognition of Passive Movement.*

The inability to recognise posture is always associated with diminished appreciation of passive movements, in some cases so great that even complete flexion and extension of a joint cannot be recognised. Here no measurement is required; the loss of appreciation is absolute. But whenever the loss is less gross we agree with Petrén and his fellow-workers that the smallest movement which can be appreciated by the patient must be measured; such measurement alone can demonstrate whether this faculty is or is not affected.

Measurements only can furnish us with the materials for determining the relative extent to which the appreciation of passive movement is disturbed at the various joints of the affected limb, and in cases where the condition of the patient is changing they may form a useful record of the progress of the disease. But when we attempt to measure the extent of the smallest appreciable movement, two different phases of recognition must be distinguished. The patient may say at once when he thinks a movement has occurred; this gives the measure of the least perceptible movement. Or he may wait until he is able to indicate its direction. As a rule, in the normal limb most patients wait until they can recognise the direction of the movement before they say that the joint has been moved; but the difference between the point at which the movement is appreciated and that at which its direction is recognised is normally small. In the abnormal limb, however, this distance is greatly exaggerated, and movements may be perceived long before their direction can be recognised. It is, therefore, important to record both the extent of the smallest movement perceived and the range necessary to evoke recognition of its direction.

All cortical lesions which produce any change in sensibility lessen the power of appreciating passive movements and the knowledge of their direction. In every case this loss was associated with a concomitant disturbance of the recognition of posture. In all our cases the loss was greatest towards the distal portions of the limb; in this it corresponds exactly with the disturbance of the sense of posture. Here we can only confirm the work of almost every previous observer.

In conclusion, we find, like most of our predecessors, that—

1. Cortical lesions most frequently disturb the recognition of posture and of passive movements. Whenever sensation is in any way affected in consequence of a cortical lesion these two functions suffer.

2. In all our cases the disturbance in the faculty of recognising posture and passive movements was greater towards the peripheral parts of the affected limb.

3. When a patient with unilateral disturbance of these faculties attempts to point to some part of his body, defective knowledge of its position causes greater error than want of recognition of posture and movement in the hand with which he points.

4. When testing the patient's power of appreciating passive movement the answers are frequently uncertain and hallucinations of movement may occur. And yet the patient may be remarkably consistent and accurate when normal parts are tested.

5.—LOCALISATION.

By localisation we understand the power of recognising correctly the spot that has been stimulated, and it would seem at first sight that little difficulty could arise in discovering whether this faculty was affected or not, but a good deal of confusion exists owing to technical difficulties inherent in the methods usually employed to investigate the power of localisation.

Of all the methods at present in use that of Henri is probably the most suitable. Excellent and simple as we

found this method it labours under one serious defect for clinical purposes, as ordinary patients were liable to become confused when asked to point out the spot stimulated on a diagram, picture, or even on a photograph of the hand. We therefore adopted the following modification, which we found to be a great improvement on the original Henri method. The hand to be tested, for example the left, is hidden from the patient's sight with a screen. One of us standing behind places his own left hand in a similar position in full view of the patient, who indicates on this living model the situation of the place where he believes he has been touched. A second observer marks on a life-sized diagram the position of the stimulated spot and the point indicated by the patient. This method we have employed throughout this work. It avoids both the technical difficulties of spot-naming and the fallacies of the groping method, and is peculiarly useful in clinical investigations.

The uncertainty and irregularity of response to tactile and pressure stimuli, so common a consequence of cortical lesions, are liable to lead to fallacious results when testing the power of localisation. We usually, therefore, touch the spot with some blunt instrument of neutral temperature, and continue the touches until the patient says he appreciates the contact. He then indicates on the hand of one of the observers the situation of the stimulated spot.

The power of recognising the position of a spot stimulated is comparatively seldom affected as a consequence of pure cortical lesions, provided all periods of shock are avoided. Most seizures, and all operations on the brain, are followed by temporary loss of this function grossly in excess of anything found with stationary lesions of the cortex. The methods we have employed enable us to discover whether the power of localisation is intact or not, although the patient is entirely ignorant of the position of the affected limb; even when this is so every part of the affected hand may be touched in succession without a single mistaken answer. But should localisation be affected scarcely a single stimulus is referred to its correct position, and the patient frequently complains that he has "no idea" where he has been touched.

We cannot insist too strongly that when localisation is defective from lesions of the cortex the stimulus is not localised in some false direction, but the patient has a vague and uncertain idea amounting in some cases to complete ignorance of its position. Erroneous localisation is not due to the uncertainty in tactile appreciation so commonly produced by a cortical lesion; for it is equally manifest when the stimulus that the patient is asked to localise is a prick about which he is never in doubt. Defective localisation is not a necessary concomitant of the defective recognition of posture so commonly produced by cortical lesions. In several cases where the appreciation of position and passive movement was gravely affected localisation was demonstrated to be perfect by every method except that of groping for the stimulated spot. The faculty of localising the stimulated spot as determined by all methods except groping is less often affected by a cortical lesion than the power of appreciating posture. In fact, we have not yet seen a case in which localisation was disturbed without a coincident loss in postural recognition.

The conclusions to which we have arrived in this section may be summed up as follows:—

1. The power of localising the stimulated spot is not commonly lost as a consequence of cortical lesions.
2. This faculty is independent of the power of recognising the position of the affected limb; appreciation of posture may be lost, although localisation is not in any way disturbed.
3. If the power of localisation is lost the patient will be unable to recognise not only the position of a spot touched, but also the position of a prick.
4. When localisation is defective the patient does not habitually localise in a particular direction, but ceases to be certain where he has been touched or pricked.

6.—THE COMPASS-TEST.

Loss of the power to distinguish two points applied to the skin simultaneously is one of the most striking changes produced by cortical lesions. It is not present in every case; the patient may have difficulty in recognising the posture of the affected limb, and the appreciation of passive movements may be diminished, yet the compass-test may yield equally good results on the two sides. But with the larger number of cortical lesions the discrimination of two points will be affected. It may be, in the milder cases,¶ that the threshold is raised; to these we shall return later. More commonly no threshold can be obtained even by separating the limbs of the compasses to the widest extent possible within the limits of the principal segments of the affected limb. If a bad record is obtained when the points are 5 cm. apart, widening the distance to 20 cm. may cause no material improvement. Decreasing the difficulty of the problem does not of necessity improve the accuracy of response; estimation of a threshold has become impossible.

Any defect in tactile sensibility is liable to disturb the compass-records. When, therefore, we consider the peculiar changes described in the section on graduated tactile stimuli, the loss in discrimination of two points might appear at first sight to be due to diminished tactile acuity. This cannot, however, be the cause of the defective compass-records; for the inability to distinguish two points applied simultaneously is equally definite if each limb of the compasses is armed with a needle and two pricks replace the two tactile stimuli. We have already seen that the recognition of a prick is never destroyed in consequence of a cortical lesion, and sensibility to pain undergoes no changes analogous to those of tactile sensibility. It is, therefore, obvious that the power of recognising "two-ness" is a separate function of sensation which may be destroyed by a cortical lesion. This loss is not dependent on the changes in tactile sensibility, though the two defects are strictly analogous phenomena.

Not every cortical lesion produces a severe loss of compass-discrimination. Although the recognition of posture is disturbed, the compass-records may remain equally good on the two sides; but as soon as tactile sensibility shows any of the changes produced by a lesion of the cortex the power of distinguishing two points will also suffer. Sometimes, in cases where sensation is little disturbed, it is possible by widening the distance between the compass-points to obtain a perfect record over the affected part; a true threshold can then be discovered. But the records tend to be confused by the same irregularity and uncertainty of response so characteristic of the disturbed tactile sensibility in these cases of cortical disease.

We may conclude from the observations described in this section that—

1. A cortical lesion may destroy the power of discriminating two compass-points, both when applied simultaneously and successively. If this is the case, no threshold can be obtained for either form of the test; increasing the distance between the points does not constantly improve the accuracy of the answers.
2. This disturbance is not dependent on changes in tactile appreciation, for it can be demonstrated equally well with two painful as with two tactile stimuli.
3. The condition of tactile sensibility and the accuracy of the simultaneous compass-test are closely associated; a raised tactile threshold is usually accompanied by a raised threshold for the appreciation of two points simultaneously applied.
4. Should the power be preserved of recognising two points when the compasses are applied consecutively, localisation will be found to be intact. The patient's appreciation of the two points when they are separated by an interval of time is due to the recognition of the separate locality of the two spots touched.

7.—THE APPRECIATION OF WEIGHT.

This test has been too frequently neglected in clinical work, probably because it demands considerable care on the part of the observer and goodwill in the patient. When carefully carried out no test is more satisfactory, for the results can be expressed in a numerical relationship, and when the faculty of recognising differences in weight is disturbed the errors, compared with those of the normal hand, are enormous.

There are several ways of conducting this test which have been fully described elsewhere. But at the highest sensory level the appreciation of difference in weight depends mainly upon two faculties. When a weight placed upon the fully supported hand is either increased or diminished, the recognition of the change is based on the power of appreciating differences in pressure. To estimate the relation between two weights placed upon the hand one after the other requires, however, not only an appreciation of pressure, but

also the power of relating some consequence of the first weight with the immediate effect of the second weight. Lastly, when a weight is placed at the same moment in each palm, and the patient is allowed to "weigh" the two objects against one another, he depends mainly upon his power of estimating movement and posture.

Cortical lesions usually diminish the accuracy of the answers to all three tests, and if sensation is severely affected all power of estimating weight may be lost. Although the patient may still appreciate the contact of the weights that are placed upon his hand, he may be totally unable to recognise their relation to one another, however the test may be applied.

In conclusion, we have found that—

1. The power of estimating the relative weight of two objects of the same size and shape is readily disturbed by cortical lesions.

2. Though the patient retains sensations of contact when the weight is placed in his hand all power of recognising the relative heaviness of the object has disappeared.

3. This faculty is equally disturbed in most cases whether the weights are placed on the supported or unsupported hand.

8.—APPRECIATION OF SIZE, SHAPE, AND FORM IN THREE DIMENSIONS.

To recognise size, shape, and form demands that the relation between two percepts should be correctly appreciated. In the case of the tests for size, we frankly ask our patients for the difference between two objects of the same shape. When testing for shape and form a relation is always implied between the test-object and something which the patient has experienced before.

In most cases when sensation is affected appreciation of size, shape, and form is lost; the patient usually complains that he has "not the least idea" of the shape or relative size of the test-objects. Although he insists that he "can feel them quite well," they convey no indication that they possess size, shape, or form. One of our patients recognised that the cone had a point because in his manipulations he pressed it into his hand; but he had no idea that it possessed any shape. This total abolition of the power to recognise size, shape, and form makes the defect peculiarly easy to discover even by the crudest tests. Thus, it is universally acknowledged that cortical lesions tend to destroy the power of recognising common objects, such as a knife, scissors, or coin placed in the hand, and our more accurately graded tests simply serve to confirm this general consensus of opinion.

This defective recognition is not in any way due to the paralysis produced by the cortical destruction; for in two cases where the movement of the hand was gravely affected size, shape, and form were perfectly recognised. When a test object is placed in the patient's hand it is of advantage if he can roll it between his fingers; but where the faculty of recognising these tests is maintained, even objects in three dimensions will be named correctly if the patient's fingers are closed over them passively.

The correct appreciation of size, shape, and form does not depend entirely on the recognition of posture, for it was perfectly retained in two cases, although postural recognition and the appreciation of passive movement were gravely affected. But in every case where the sense of posture was affected and we were unable at the same time to obtain a tactile threshold all recognition of size, shape, and form was abolished. Not that such recognition depends directly upon the state of tactile sensibility. The combined affection of the sense of posture and loss of the tactile threshold indicate simply that the defect produced by the lesion has reached a sufficient grade to destroy the power of recognising identity and difference. The appreciation of size, shape, and form, therefore, suffers like all tests which imply a relation.

9.—ROUGHNESS AND TEXTURE.

The power of appreciating roughness can be compared on the two halves of the body by means of the Graham Brown æsthesiometer. In this instrument one or more cylinders are projected to a measurable extent from a smooth metal surface and the patient says whether the instrument is smooth or rough when it is moved across some part, such as the hand.

In no case of quiescent cortical lesion was there any appreciable difference between the affected and normal parts. Not only could the patient experience no difference, but the extent to which the cylinder must be protruded to evoke a sensation of roughness was the same for the two sides. This stimulus is one which can be appreciated notwithstanding grave loss of sensibility produced by a cortical lesion. But in spite of this power to recognise the roughness or smoothness of the surface of the æsthesiometer all appreciation of texture may be lost. This test demands not only the immediate recognition that the object is rough or smooth, but the relation of that sensation to other percepts. Thus, although he may know that one surface is rough and another is smooth, he has no power of naming the substance by its texture. Cotton, silk, and velvet are all one to the affected hand, although readily distinguished on the normal side. When once this test has been applied the patients often complain that they have lost all idea of texture, saying, "I can feel it, but I have not the least idea what it is."

These two tests, both depending on the same sensory impulses, clearly illustrate the nature of the loss of sensibility produced by cortical lesions. The one depends upon the immediate appreciation of a smooth or rough stimulus. The other demands the correct relation of one group of precepts to another. The first is therefore maintained, whilst the second is destroyed by any cortical lesion which produces a measurable disturbance of sensibility.

10.—VIBRATION.

At lower levels of the nervous system a lesion frequently destroys all power of appreciating the vibrations of a tuning-fork. But we believe this never occurs from a stationary cortical lesion. Usually the patient can discover no difference in the sensations produced by the fork on the two halves of his body. Occasionally, however, he says it seems "plainer" or "stronger" on the normal than on the affected limb. If this is the case the vibration will be appreciated for a shorter period over the affected parts. The fork is set in motion and the patient is asked to say when he can no longer appreciate the vibration. It is then rapidly transferred to a similar spot on the normal limb and vibration may still be recognised for as much as 20 seconds longer. If this defect were greatly increased it is obvious that the power of recognising vibration would be abolished, but this never occurs from a pure cortical lesion. The vibration of a tuning fork seems to contain some sensory element which insures that it is appreciated even though the cortex is gravely affected. But the cortical lesion diminishes the "plainness" of the sensation and shortens its duration.

In some cases the vibration of the tuning fork not only seems "plainer," but is said to beat "faster" on the normal than on the affected limb. As this difference depends entirely on introspection a few patients only have noticed it, and we have avoided suggesting any change in the apparent relative rapidity on the two sides.

IV.—ANALYSIS OF THE LOSS OF SENSATION PRODUCED BY LESIONS OF THE OPTIC THALAMUS AND NEIGHBOURING PARTS.

In a previous section we have described the various forms of sensation which may be disturbed by lesions of the optic thalamus and its neighbourhood. Test by test we followed the loss of sensation, and showed that it varied in different cases within extreme limits. We shall now attempt to discover by analysis of these disturbances of sensation whether the impulses which pass away from the optic thalamus differ in their grouping from those which enter this organ from the mid-brain.

Since the optic thalamus is the terminal station for all secondary sensory paths, a lesion situated within its limits might destroy the receptive structures in which their impulses end; in such a case the loss of sensation would correspond to that produced by an equivalent lesion of the tracts of the mid-brain by which these impulses are conducted to the optic thalamus.

On the other hand, the lesion might leave this receptive mechanism intact but interfere with the paths that are streaming away to the cortex. In this case the sensory defect would reveal what elements of sensation pass to the cortex after they have been re-grouped in the thalamus.

1.—DISTURBANCE OF THE AFFERENT RECEPTIVE MECHANISM IN THE OPTIC THALAMUS.

In certain cases, which show the over-reaction to afferent stimuli and other signs indicative of a lesion of the optic thalamus, the loss of sensation is extremely gross. Not only

is sensibility for touch and temperature abolished, but even the threshold for painful stimuli may be raised. Pain, once appreciated, produces more discomfort on the affected half of the body; but in order that this appreciation may occur, the stimulus must be more intense than on the normal side. The strength of a prick, and the amount of pressure required to produce pain, are greater over the affected parts, although as soon as pain is produced the reaction is excessive. This loss of sensibility is probably due to interference with painful impulses either in the receptive portion of the optic thalamus, or as they still run in the secondary sensory paths which end in this junction.

We believe that in all cases which present the "*syndrome thalamique*," accompanied by loss of sensation so gross that the threshold is raised to affective stimuli, the receptive mechanism is affected; this seems to be situated mainly *in* the caudal portion of the lateral nucleus of the optic thalamus.

2.—DISTURBANCE OF SENSORY IMPULSES AS THEY PASS FROM THE OPTIC THALAMUS TO THE CORTEX.

In certain cases which show characteristic signs of a lesion of the optic thalamus the threshold to prick is identical on the two halves of the body and the readings of the pressure algometer may be actually lower on the affected side. The loss of appreciation of posture and passive movement may be severe, and the power of comparing two weights may be diminished, but the remaining forms of sensibility are less grossly affected than in that group of cases we have just considered.

Here we believe that the receptive mechanism is not affected to any material extent. The complete retention of painful sensibility shows that the impulses upon which it is based have been allowed to exert their full influence on the central organ where they are transformed into sensation. Moreover, the sensory elements are dissociated in ways which are unknown, until this level is reached; both the nature of the loss of sensation and the character of the sensibility which remains show that the afferent impulses must have been interrupted after they have undergone a fresh re-grouping at the thalamic junction. An analysis of these forms of dissociated sensation will therefore show the grouping of the impulses which pass away from the optic thalamus to act upon the sensory cortex.

It would seem that sensory impulses travel from the optic thalamus to the cortex in five groups. 1. Those concerned with the recognition of posture and passive movement. If these impulses are affected the power of discriminating weights on the unsupported hand may also be diminished. 2. Certain tactile elements; integrity of this group is necessary for the discrimination of weights placed on the fully supported hand. 3. Those impulses which underlie the appreciation of two points applied simultaneously (the compass test); on this group also depends the recognition of size, shape, and form in three dimensions. 4. Those which underlie the power of localising the situation of a stimulated spot. Recognition of the double nature of two points applied consecutively also depends on this group of impulses. 5. All thermal impulses are grouped together to underlie a scale of sensations with heat at the one end and cold at the other. At the level with which we are now dealing these impulses have already excited the affective centre and are passing away to the cortex.

V.—THEORETICAL CONCLUSIONS.

So far we have described in detail the effects which may follow lesions situated in different parts of the brain. In the present section we shall attempt, by analysis of these results, to present a coherent account of the mechanism of sensation.

The anatomical structure known as the optic thalamus is an extremely complex portion of the brain, and contains not only the terminal centre for certain aspects of sensations, but plays a threefold part in the fate of sensory impulses. 1. Firstly, it contains the termination of all secondary paths; here sensory impulses are grouped afresh and redistributed in two directions; on the one hand to the cortex cerebri, and on the other to the grey matter of the optic thalamus itself (*vide* section IV.). 2. Secondly, it contains a mass of grey matter, the essential organ of the thalamus, which forms the centre for certain fundamental elements of sensation. It is complementary to the sensory cortex and exercises different functions in the production of sensation. 3. Lastly, the lateral part of the optic thalamus is the organ through which the cortex can influence the essential thalamic centre, controlling and checking its activity. The excessive response to affective stimuli, so prominent a feature of lesions in this situation, is not due to irritation but to removal of cortical control.

Next we shall consider the nature of the activity of the sensory cortex. We shall show that it is concerned more particularly with discrimination and with the relation between two sensations, or between a sensation and its representation. It is essentially the organ by which attention can be concentrated on any part of the body.

Finally, we shall deal with the interaction of the cerebral cortex and the centre in the optic thalamus during the production of sensation.

1.—THE ESSENTIAL ACTIVITY OF THE THALAMIC CENTRE.

The most remarkable feature in that group of thalamic cases with which we have dealt in this work is not loss of sensation, but an excessive response to affective stimuli. This positive effect, an actual overloading of sensation with feeling tone, was present in all our 24 cases of this class; and, though emphasis has not been laid upon it as a characteristic feature, it has been observed by others in cases where the existence of a lesion in the lateral zone of the optic thalamus was confirmed by autopsy (Roussy [33], Edinger [8]). This excessive response may be accompanied by much or by little loss of sensation, but the extent of this loss bears no relation to the amount of the over-reaction to painful stimuli. But the characteristic thalamic response does not consist in an excessive reaction to painful stimuli only. In suitable cases we have shown that the response to pleasurable stimuli, such as warmth, is also greater on the affected side. Moreover, the manifestations of general mental states of pleasure and of pain may be more pronounced on the abnormal half of the body.

The pains and uncomfortable paræsthesiæ which occur in these cases have been explained by some observers as due to irritation. But this conventional hypothesis is insufficient to explain the observed facts in the clinical course of these cases. Moreover, we have pointed out that the response to pleasurable stimuli is also increased in some of these cases, a condition incompatible with the constant existence of an irritative lesion which evokes pain. Further, we have not found this peculiar over-response from lesions of other parts of the sensory path,[1] and the extreme rarity of such cases in the literature, compared with the overwhelming frequency of this over-response with the lesions of the optic thalamus, compels us to adopt some other explanation for its occurrence at this level of the nervous system.

Let us turn for a moment to the motor side of the nervous system where the effects produced by removal of control are more fully understood. It is well known that a lesion of the motor region of the cerebral cortex, or of the tracts which run from it to the spinal cord, produces not only loss of voluntary movement, but also a positive effect in the increased tone and rigidity of the affected limbs. This increase of tone, as Hughlings Jackson [13] pointed out in the Croonian lectures nearly 30 years ago, is not the direct effect of the destructive lesion, but is produced by the activity of subcortical centres released from control. He laid down the law that no destructive lesion can produce a positive effect directly. The activity of the cortex cerebri normally inhibits and controls subcortical motor centres, and the destructive lesion sets these centres free to display their powers unchecked. Loss of voluntary power is consequently associated with tonic over-action and an increased reflex discharge in response to afferent impulses.

We believe that an exactly similar condition is revealed on

[1] Spontaneous pains associated with over-sensitiveness to prick or other stimuli have been described as a consequence of lesions of the central nervous system at other parts of the sensory path, but few of these cases will stand criticism. For example, in the case published by Raymond and Rose [30] as a lesion of the pons varolii the authors themselves admit the possibility of multiple lesions, and the presence of choreic and athetoid movements points in all probability to affection of the optic thalamus. Raymond and Français [29] recorded a pontine case in which pains and "hyperæsthesia" to prick were present, but the position of the lesion was not determined by autopsy. In Mann's case [20] there was merely persistent unilateral pain, and Mann himself recognised that this was accompanied by "hypæsthesia" and not by "hyperæsthesia," as in Edinger's case of thalamic disease with which he contrasted it.

the sensory side of the nervous system by cases of thalamic disease accompanied by an excessive response to peripheral stimuli. We know that paths run, not only from the optic thalamus to the cortex, but from the cortex to the thalamus, and they have been shown ([23] [4] [36]) to terminate in its lateral zone, the very region affected in cases that have exhibited the "syndrome thalamique." But since these paths come from all parts of the cortex to impinge upon the optic thalamus the functions they exercise cannot be removed by partial destruction of the cerebral hemispheres; cortical lesions produce no thalamic over-response to affective stimuli.

The only function which can be ascribed to these cortical thalamic paths is that through them the cortex controls, in some way, the activity of the thalamus. If this view is correct, lesions which interrupt these paths, but leave intact the main substance of the optic thalamus, must lead to a permanent over-activity of functions exercised by that organ. Any afferent impulses which are capable of exciting this part of the brain will act on an uncontrolled centre and must, consequently, evoke an excessive effect.

We believe that the essential organ of the optic thalamus is the centre of consciousness for certain elements of sensation. It responds to all stimuli capable of evoking either pleasure and pain, or consciousness of a change in state. The feeling-tone of somatic or visceral sensation is the product of thalamic activity, and the fact that a sensation is devoid of feeling-tone shows that the impulses which underlie its production make no thalamic appeal. The functions of this organ are influenced by the coincident activity of the cortical centres, and this control is effected by means of paths from the cortex to the thalamus which probably end in its lateral nucleus. Injury in this region sets free the thalamic centre from control, and it can therefore react without restraint to all stimuli capable of arousing affective states. Since, however, most stimuli which act upon the body in daily life are noxious and so contain a disagreeable element, most sensations experienced by the patient with a lesion of the optic thalamus are painful. This is particularly the case when sensation is so gravely diminished that stimuli of great intensity only can reach consciousness. The occurrence of spontaneous pains and the painful paræsthesiæ of the affected half of the body, so constant a feature of these cases, are due to the uncontrolled activity of this centre through which painful stimuli evoke a disagreeable sensation.

2.—THE NATURE OF THE SENSORY ACTIVITY OF THE CORTEX.

In a previous section we have described the results produced by a cortical lesion upon a series of measured sensory tests. Let us now analyse these defects in the hope that thereby we may learn the part played by the cortex in that response to an external stimulus we call a sensation.

Afferent impulses on their way from the periphery to the cortex pay toll first of all to the unconscious coördinating mechanisms of the spinal cord and the cerebellum. Then, after being regrouped at the thalamic junction, they act upon two terminal centres. One of these, the essential organ of the optic thalamus, responds to all those elements which can evoke consciousness of an internal change in state, more particularly pleasure and discomfort. Sensory impulses then pass by way of the internal capsule to act upon the cortex, and these are the afferent materials out of which the cortex manufactures the forms of sensation with which it is concerned.

We know the nature of these impulses as they travel through the capsule to the cortex; it is revealed by those cases of thalamic and capsular disease in which the loss of sensation is due to interference with paths which pass from the optic thalamus to the sensory cortex. The dissociations of sensibility which can occur under such conditions show that, after exciting the essential centre of the optic thalamus, sensory impulses pass on in five main groups to be distributed to the cortex: 1. Those which underlie postural recognition and the appreciation of passive movement. Upon this group depends the secondary faculty of judging the difference or identity of two weights placed on the unsupported hands. 2. Impulses which underlie the recognition of tactile differences or the power of appreciating those qualities of touch other than contact and roughness. To this group we owe the faculty of recognising the increase or diminution in weight of a test-object and of distinguishing the difference between two weights placed on the supported hand. 3. Those upon which depend spacial discrimination (compass-points applied simultaneously) and its allied faculty, the recognition of size and shape. 4. Those impulses which enable the patient to recognise the spot stimulated (localisation). They carry with them the power of appreciating the double nature of two points applied to the surface one after the other. 5. Thermal impulses. On this group depends the possibility of recognising those degrees of temperature which necessitate a comparison with the consequences of some previous thermal sensation. Such are the afferent materials out of which the cortex manufactures those forms of sensation for which it is responsible.

The power of estimating the relative warmth or coldness of two stimuli suffers when thermal sensibility is affected by a cortical lesion. The power of discriminating the relative coolness of two cold stimuli and the relative warmth of two hot tubes is diminished, provided two temperatures are chosen which do not appeal differently to the thalamic sensory centre. Thus even the faculty of appreciating the relative intensity of two temperatures on the same side of the scale is disturbed, although both may be named correctly. But these stimuli contain elements capable of rousing the activity of the essential thalamic centre. The tests for the recognition of posture, of passive movement, spacial discrimination (compasses), and the locality of the stimulated spot contain no such elements, and it is these aspects of sensation that suffer most profoundly in consequence of a lesion of the sensory cortex. Postural recognition and the appreciation of passive movements are usually grossly affected. The power of localising the stimulated spot is less frequently disturbed, but may be abolished. These two faculties are independent of one another and may be affected separately. Moreover, a disturbance of localisation caused by a lesion of the cortex is not due to coincident uncertainty of tactile sensibility, for it is equally demonstrable when the stimulus is a prick to which the patient responds on every occasion.

When dealing with the arrangement of the sensory impulses which pass through the internal capsule to be distributed to the cortex, we showed that the power of estimating weight, size, shape, and form in three dimensions depends on the integrity of several separate groups. Thus, the appreciation of difference between two weights placed in the unsupported hand demands perfect postural recognition. The faculty of estimating weights placed consecutively on the supported hand depends on the integrity of tactile sensibility. Such dissociation is impossible with lesions of the cortex, for we are no longer dealing with a disturbance of sensory impulses, but with the difficulty of recognising the relation between two percepts. The patient generally gives up all attempts at appreciation, saying he has "no idea" of the shape, form, or relative size and weight of the test-object.

The tests for the appreciation of roughness and of texture demonstrate clearly the part played by the cortex in sensation. With Graham Brown's æsthesiometer the threshold is identical on both hands; in every case the amount of protrusion necessary to make the flat surface of the instrument seem rough is the same on the two sides. In this test the patient has to determine solely whether the sensation is one of roughness or smoothness. But as soon as he is asked to correlate these sensations and combine them with those of touch, as in the tests for the appreciation of texture, he fails entirely.

Evidently one of the faculties which we owe to cortical activity is the power of relating one sensation to another, whether they arise simultaneously or consecutively. Recognition of weight, size, shape, form, and texture depends entirely on this faculty. Such tests consequently reveal the grossest defects whenever a cortical lesion produces any considerable influence upon sensibility. A little consideration shows that loss of this faculty of relation is at the bottom of the diminished appreciation of posture and passive movement which constantly forms one of the gravest defects produced by lesions of the cortex. For it would be impossible to discover the position of any part of the body unless the immediate postural sensations were related to something that had preceded them. A direct perception of posture, analogous to that of roughness, is impossible; in every case the new position of the limb is relative to some

previous posture. At any moment we can become conscious of the position of any part of our bodies, and although such postural recognition is not constantly in the central field of attention it always forms the measure against which we judge subsequent change. This is peculiarly the case with the appreciation of passive movement. When we sit immobile and imagine our fingers touching some object on the table many of us see at once the picture of an outstretched arm; the only image in consciousness is a visual one. Now in cases where all power of recognising posture is lost this visual image remains unchanged, and it cannot therefore be the standard to which we refer alterations in posture. Place the patient's affected arm in front of him on the bed, allowing him to see the position in which it lies; close his eyes, and in most cases he will see a mental picture of his hand. Then change its position whilst his eyes remain closed and he will continue to see a picture of the hand in its old position. Moreover, if localisation is not affected he will name correctly the spot stimulated, but will refer it to the position in which he visualises the hand. The visual image of the limb remains intact, although all power of appreciating changes in position is abolished. It is evident, therefore, that the standard resulting from previous postures and movements, to which immediate reference is made when a fresh position is recognised, cannot be a visual image.

Every recognisable change enters into consciousness already charged with its relation to something that has gone before, just as on a taxi-meter the distance is presented to us already transformed into shillings and pence. So the final product of the tests for the appreciation of posture or passive movement rises into consciousness as a measured postural change.

For this combined standard, against which all subsequent changes of posture are measured before they enter consciousness, we propose the word "schema." By means of perpetual alterations in position we are always building up a postural model of ourselves which constantly changes. Every new posture or movement is recorded on this plastic schema, and the activity of the cortex brings every fresh group of sensations evoked by altered posture into relation with it. Immediate postural recognition follows as soon as the relation is complete.

In the same way recognition of the locality of the stimulated spot demands the reference to another "schema." For a patient may be able to name correctly and indicate on a diagram, or on another person's hand, the exact position of the spot touched or pricked, and yet be ignorant of the position in space of the limb upon which it lies.

It is to the existence of these "schemata" that we owe the power of projecting our recognition of posture, movement, and locality beyond the limits of our own bodies to the end of some instrument held in the hand. Without them we could not probe with a stick, nor use a spoon unless our eyes were fixed upon the plate. Anything which participates in the conscious movement of our bodies is added to the model of ourselves and becomes part of these schemata: a woman's power of localisation may extend to the feather in her hat. Thus, it is evident that among the various functions of cortical activity which imply a relation, the act of comparison may be of different grades in the hierarchy of consciousness.

Evidently a lesion of the cortex produces an effect upon sensation of a different order from that found at any lower level of the nervous system. All those defects which may occur when a normal person is under examination with psycho-physical tests are present in a grossly exaggerated form. Those defects which we ordinarily attribute to want of attention are raised to a degree unknown in the normal human being. But the patient's power of general attention has not been lowered in such cases as those we have cited in this paper. Records from the limbs of the sound side show that the phenomena of defective attention are confined to the abnormal parts. A portion only of the patient has, as it were, become untrustworthy.

To sum up, we believe that the cerebral cortex is the organ by which we are able to focus attention upon the changes evoked by sensory impulses. A pure cortical lesion which is not advancing or causing periodic discharges will change the sensibility of the affected parts in such a way that the patient's answers appear to be untrustworthy. Such diminished power of attention makes the estimation of a threshold in many cases impossible. Uncertainty of response destroys all power of comparing one set of impressions with another and so prevents discrimination. But in addition to its function as an organ of local attention the sensory cortex is also the storehouse of past impressions. These may rise into consciousness as images, but more often, as in the case of spacial impressions, remain outside central consciousness. Here they form organised models of ourselves which may be termed "schemata." Such schemata modify the impression produced by incoming sensory impulses in such a way that the final sensations of position, and of locality, rise into consciousness charged with a relation to something that has happened before. Destruction of such "schemata" by a lesion of the cortex renders impossible all recognition of posture or of the locality of a stimulated spot in the affected part of the body.

3.—THE INTER-RELATION OF THE OPTIC THALAMUS AND THE CORTEX IN THE PRODUCTION OF SENSATION.

In daily life all stimuli excite more or less both thalamic and cortical centres, for most unselected sensations contain both affective and discriminative elements. But amongst the tests we have employed in sensory analysis some appeal almost entirely to the one or other centre. The test for recognition of posture, as carried out by us, is purely discriminative; whilst the pain produced by squeezing the testicle, or to a less degree by the pressure-algometer, appeals almost exclusively to the more affective centre.

Sensory impulses arriving at the optic thalamus are re-grouped in such a way that they can act upon both its essential centre and the sensory cortex. The essential organ of the thalamus is excited to "affective activity" by certain impulses and refuses to react to those which underlie the purely discriminative aspects of sensation. These pass on to influence the cortical centres where they are readily accepted. In a similar way the primary centres of the cortex cannot receive those components which underlie feeling-tone; in this direction they are completely blocked.

It has long been recognised that sensations are endowed with feeling-tone to different degrees. In those which underlie postural appreciation this quality is entirely absent, whilst visceral sensations are, in some instances, little more than a change in a general feeling-tone; one set of impulses appeals almost exclusively to the cortical centre, the other to that of the optic thalamus. All thermal stimuli, however, make a double appeal. Every sensation of heat or cold is either comfortable or uncomfortable; the only entirely indifferent temperature is one that is neither hot nor cold.

In the same way most unselected tactile stimuli appeal both to the sensory cortex and to the optic thalamus. For not only is a touch always related to, and distinguished from, something that has gone before it, but we have shown that contact, especially of an object moving over hair-clad parts, is capable of exciting thalamic activity. Vibrations of the tuning-fork also make a double appeal, for when the cortical paths are cut the amplitude of the vibration must be greater in order that they may be appreciated; on the other hand, the vibratory effect may be stronger on the abnormal side in those thalamic cases where the affective response is excessive.

But these two centres of consciousness are not co-equal and independent. Under normal conditions the activity of the thalamic centre, though of a different nature, is dominated by that of the cortex. When we examine the sensation normally produced by a prick we recognise that the pain develops slowly and lasts a considerable time after the stimulus has ceased. Moreover, the same intensity of stimulation will produce a different effect on the same spot on different occasions. A long, latent period, persistence, and want of uniformity are characteristic of all painful sensations. This is seen in an exaggerated form in cases where the thalamic centre has been freed from control. The response to prick is slow, but persists long after the stimulus has ceased. Moreover, the reaction when it occurs tends to be explosive; it is as if a spark had fired a magazine and the consequences were not commensurate with the cause.

On the contrary, the sensations normally produced by moderate tactile stimuli are characterised by a short latent period, and disappear almost immediately on the cessation of

the stimulus. A lesion of the sensory cortex disturbs both these characteristics. Tactile sensations became uncertain and incalculable, and no threshold can be obtained; persistence and hallucinations mar the uniformity of the records.

Now we have shown that the sensory cortex is the organ by which attention can be concentrated on any part of the body that is stimulated. The focus of attention is arrested by the changes produced by cortical activity at any one spot. These are sorted out and brought into relation with other sensory processes, past or present. Then the focus of attention sweeps on, attracted by some other object.

All stimuli which appeal to the thalamic centre have a high threshold. They must reach a high intensity before they can enter consciousness, but once they have risen above the threshold they tend to produce a change of excessive amount and duration, and this it is the business of the cortical mechanism to control. The low intensity of the stimuli that can arouse the sensory cortex, and its quick reaction-period, enable it to control the activity of the cumbersome mechanism of the thalamic centre.

Our view of the sensory mechanism put forward in this paper explains many of the facts already recognised both by psychologists and clinicians. It enables us to understand how integration can occur at all afferent levels of the nervous system, and makes development possible even in the individual. The aim of human evolution is the domination of feeling and instinct by discriminative mental activities. This struggle on the highest plane of mental life is begun at the lowest afferent level, and the issue becomes more clearly defined the nearer sensory impulses approach the field of consciousness.

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SALVARSAN IN SYPHILIS.

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THE reception of salvarsan by the medical profession in this country has been by no means uniform. While many favourable results have indeed been reported, it is also the fact that many expressions of opinion have appeared during the last few months in the medical journals adverse to the utility of salvarsan in the treatment of syphilis. It is true that for the most part these have come from those who have had but little practical experience of the method; nevertheless they have received, and have deservedly received, attention owing to the high position occupied by their writers. In these circumstances I feel it to be almost a duty to bear witness to the good results which I have seen follow the use of this drug, and that I should state that so far no harmful effects have come under my notice. Whether salvarsan will fulfil all the great expectations which were entertained on its first publication is doubtful, but that it is a drug strikingly effective in the treatment of syphilis I am fully persuaded.

This paper is intended to be nothing more than a preliminary note on the subject, for I hope later to publish a fuller account of my experiences with salvarsan, but my object in bringing forward the matter now is to show that if care be taken in the selection of the cases and the drug be administered cautiously the results obtained are extremely good, and in some cases at least have proved to be unattainable by other means.

Before the drug was put on the market Professor Ehrlich, at the request of the Editor of THE LANCET, very kindly sent me a supply of ampoules of "606" for the purpose of testing its value, and from that time to the present I have used it. My aim in its employment was to observe carefully the results of its use in comparatively few cases rather than to administer it to every case of syphilis seen by me. Also, in order to test the value of the drug with care, I did not inject any cases except those which gave a positive Wassermann reaction in addition to giving clinical signs of the disease. I rejected some cases in which the reaction was negative, even though clinically the diagnosis of syphilis was extremely probable or even practically certain, because I wished to be sure that the case was certainly syphilitic. I have employed the drug both in primary, secondary, and tertiary manifestations of the disease, and also in some cases exhibiting those later manifestations of syphilis which are often called parasyphilitic but are better called quaternary. Instead of giving particulars of the whole series, I think that I can more clearly present the effect of the treatment, and that the conclusions may prove of more value to others if I state simply the results which I have obtained.

Dose.—In my early cases I employed 0·45 gramme, but later I employed 0·5 and now 0·6 gramme. It has appeared to me that the improvement in the cases has been more rapidly shown with the larger dose, and I have not seen harm result from it in any case. It is possible that later the dose may have to be somewhat increased, but as to that time will show.

Mode of administration.—In my early cases I administered the drug by an intramuscular injection, and though it is an effective method it certainly gives rise to a good deal of pain for a few hours. This pain can be, in great part, controlled by a hypodermic injection of a quarter of a grain of morphine, and I have found it a good plan to give this morphine injection ten minutes or a quarter of an hour before the injection of the "606." Later I injected the drug intermuscularly in the following manner. The posterior fold of

the axilla is picked up between the finger and thumb an inch or two below the level of the angle of the scapula, and as this fold is formed by the latissimus dorsi that muscle will be held. The needle of the syringe is then passed deep to the muscle, so that it lies between the latissimus dorsi and the serratus posticus inferior. The injection of the preparation into this space causes much less pain than when the injection is intramuscular, for there is much less tension, and though the pain is sometimes troublesome, yet it is readily controlled by a hypodermic injection of morphine.

Mode of preparation for an intramuscular or intermuscular injection.—The method of preparation I have employed has been practically that which was shown me by Mr. J. E. R. McDonagh. The powder is rubbed up with a solution of sodium hydrate and then treated with acetic acid until the liquid is still just acid and then a little solution of sodium hydrate is added until it is just alkaline. The syringe used has a glass barrel and a solid metal piston. It was used fairly warm for two reasons, mainly not to chill the liquid to be injected, but partly also because when warm the piston fits more closely. The liquid is drawn into the syringe and then a little warm water is used to wash out the mortar, and that is also drawn into the syringe. Prepared in this way the bulk of the liquid is not great; it varies between 8 and 12 c.c., 9 or 10 being about the average—that is to say, it measures between two and three teaspoonfuls. The fluid is injected gently and the pain is not very great.

In the intravenous injection a weak alkaline solution is made as follows: A bottle is taken with divisions showing 50 c.c. About 100 c.c. of sterile water or saline solution are placed in the flask which contains a number of glass balls; the salvarsan (0·6 gramme) is then added and about 18 or 20 minims of 15 per cent. solution of sodium hydrate are added until a clear solution results. The bottle is shaken while the alkali is being added and the balls assist the solution of the powder. The bulk of the liquid is then made up to 300 c.c., which is the amount to be administered. A sharp needle is attached to a piece of rubber tubing and to the other end of that is a glass funnel. The funnel and tubing are filled with saline solution at a temperature of about 105° F., and the skin over the front of one elbow is painted with a 3 per cent. alcoholic solution of iodine. By means of a bandage tied round the upper arm the veins are rendered distinct, and the needle is inserted into one of the veins in front of the elbow, either the median cephalic or the median basilic, and some of the saline solution is allowed to run in. Then some layers of sterile gauze are placed in the mouth of the funnel for the purpose of filtering the solution which is poured into the funnel. The time taken by the 300 c.c. in entering the vein should, I think, be between 20 minutes and half an hour. When all the solution has been injected, it is well to let a little saline solution flow through the needle, so that when the needle is removed no salvarsan is left in the tissues. Some precautions are of great importance. All the apparatus employed must have been carefully sterilised. The solution should not be too cool, it is best to have it a few degrees over 100°, otherwise it may chill the patient and perhaps cause a shivering fit. The flask is easily warmed by standing it in hot water.

Wassermann's test.—As I have mentioned above, I have not injected any case with "606" unless and until it has given a positive Wassermann test. In some of the cases the fact that the test was negative was probably due to previous administration of mercury; nevertheless, I did not inject any case until the Wassermann test became positive. I have found that it may take between two or three months for a Wassermann test to become positive after it has been negative from the administration of mercury. I am aware that it has been stated that mercury does not interfere with the Wassermann test, but that has not been my experience.

Harmful results.—I have had no results which could be called harmful. In no instance has an abscess formed locally, though in one case a little fluid collected at the site of injection, but the contents were quite clear. In no case have any ocular symptoms resulted. I cannot help thinking that in most of the cases in which harm has resulted there has been some fault in technique. In some instances apparently the solution has been injected into the vein without filtration, so that the risk of embolism has been run. The greatest care is required and must be used.

Stage of the disease.—The drug has proved efficacious in all stages of syphilis—in the primary, secondary, and tertiary stages, and also in the parasyphilides. I think the most rapid results followed the treatment when the disease was in the tertiary stage. The manifestations of the secondary stage were distinctly less rapidly affected, possibly because, as Ehrlich has suggested, the drug cannot affect an area where the vessels are thrombosed. I need not describe in detail any cases in which the manifestations were those common in syphilis, but there are a few that deserve special mention.

In the first case which I injected the patient was a young woman, who had numerous manifestations of syphilis probably congenital in origin. She had on the leg a deep gummatous ulcer, measuring some 2½ inches in length and an inch in breadth. The depth also was about an inch. In addition she had a gummatous deposit in the left orbit causing some proptosis; there were marked atrophy of the disc and little more than the perception of light. At first I had some hesitation about using the drug in a case where the eye was already damaged, but it was clear that the loss of sight of the left eye was so serious that no real harm could be done. As a result of the injection the proptosis almost disappeared and curiously the vision improved markedly. The ulcer on the leg healed, though slowly. A few weeks later slight ulceration reappeared in the scar of the leg, but it only lasted for a short time and it again healed and has not broken down since, and no syphilitic manifestation has appeared subsequently, although nearly two years have elapsed since the injection. In this case the patient had been very thoroughly treated with mercury by one of my colleagues, but without effect.

In one case, where several nodules existed on the skull and much thickening of the left femur was present, rapid recovery followed the use of salvarsan, and, further, an old ununited fracture of the tibia united a few weeks after the injection.

In another case a woman was injected during the third month of pregnancy; labour took place at term, and the child was born perfectly healthy, and neither child nor mother has since exhibited any manifestations of the disease. In fact, the child is above the average in well-being.

In several cases of syphilis of the spinal cord and brain the improvement was marked, though the first signs of improvement were slow in appearing.

I used salvarsan in a fairly early case of general paralysis of the insane, but no noticeable improvement occurred. I am inclined to think that for intracranial syphilis the intramuscular method of injection is better than the intravenous, for the introduction of the drug into the circulation is less rapid. In most cases, however, I have no doubt that the intravenous injection is far preferable to any other mode of administration, but I repeat once more that it needs much care.

Recurrences.—So far I have had no case in which I have found it necessary to repeat the dose; doubtless in time such cases will occur to me as they have occurred to others.

Conclusions.—Judging merely from my experience of the cases treated by me, I can say that salvarsan is a rapid, safe, and effective treatment of syphilis. That it affords a permanent cure it is as yet impossible to say, but from our present knowledge it appears to me the most satisfactory method of treatment.

Harley-street, W.

ON THE

PRACTICAL RESULTS OF THE RECENT ADVANCES IN THE DIAGNOSIS AND TREATMENT OF SYPHILIS.[1]

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I WOULD, in the first place, insist upon the importance of a wide recognition of the advances which have been made in the diagnosis and in the pathogeny of syphilis as well as in its treatment. The work of Roux and Metchnikoff, of Neisser, Ehrlich, and many others has brought to fruition the epoch-marking discovery of the spirochæta pallida by Schaudinn, a discovery not less important to the community

[1] Abstract of a paper read before the Plymouth Medical Society on Dec. 16th, 1911. The paper was illustrated by photographs and coloured drawings of patients.

than the discovery of the bacillus tuberculosis by Robert Koch.

Although Metchnikoff and Roux had shown that syphilis could be produced experimentally in the chimpanzee shortly before Schaudinn and Hoffman published their discovery of the spirochæta pallida, that discovery made it possible to extend and develop the lines of experiment. Neisser has shown that the spirochætæ leave the site of infection very soon after inoculation, and only by excising the primary lesion within 12 hours was he able to prevent general infection. Levaditi and others have demonstrated that the organisms spread along the lymphatics and the perivascular spaces and also by the blood stream. By the inoculation of animals with the discharge from the primary sore it is easy to demonstrate its infectivity, and, as we should have expected on clinical grounds, mucous patches and condylomata are infectious in a high degree. On clinical grounds, however, it has long been held that tertiary lesions are not infectious, but Finger and Landsteiner were able to infect a monkey from the lesions of a patient whose primary sore dated back 12 years. Neisser and others have confirmed these observations. These positive findings are of great practical importance, as they show that the spirochætæ are present in tertiary lesions.

It has been found very difficult to infect the ape with the blood of a syphilitic subject, but the semen has been shown to convey the infection, while the secretion of the mammary gland of a syphilitic nursing woman does not. To Neisser we owe the demonstration of the infectivity of the nasal discharge of infants suffering from congenital syphilis.

Diagnosis.

The demonstration of the spirochæta pallida is best performed by dark background illumination. There is now no need to apply elaborate methods of staining. [The technique of dark background illumination was here explained and photographs of preparations made by Dr. James McIntosh were demonstrated. The importance of a sufficiently intense illumination was insisted upon, the examination being most conveniently made with a one-sixth power and a high eyepiece.] Some experience is necessary to distinguish the spirochæta of syphilis from some other spirillar organisms, but with a little training the examination can be made in a few minutes. The most satisfactory conditions for a successful examination are the removal of a small quantity of the serum from an untreated chancre, obtained by pressing the part after cleansing the surface with saline. The spirochætæ can also be demonstrated in the exudation from condylomata, mucous patches, and from ulcerating secondary lesions. In the other secondary eruptions the method is of little practical value.

While every practitioner cannot be expected to have the necessary knowledge for making these examinations, it ought not to be beyond the range of practical politics for the health authorities in every town at least to be able to give the required assistance to the practitioner, just as is done in the recognition of the Klebs-Löffler bacillus in diphtheria. The practical importance of the early recognition of the disease will be more apparent on consideration of some of the later observations. It will simply be necessary here to remark that as far as possible all cases should be treated in the primary stage.

The Indian ink method of Burri for the demonstration of the spirochæta has the advantage of simplicity. A drop of the serum from a chancre being mixed with a drop of sterilised Günther-Wagner Indian ink is examined after drying with an oil-immersion lens. Owing to the differences in the thickness of the film Dr. McIntosh and Dr. Paul Fildes consider that this method is open to objection because a thin film makes the parasites appear thicker, and in a thick film they appear thinner, and, moreover, the characteristic movements of the spirochætæ as observed with dark background illumination are absent.

The influence of salvarsan on the spirochætæ in a primary sore is remarkable. It is common to find the serum of a chancre in which spirochætæ were in large numbers entirely free from parasites 8 to 12 hours after injection. Such a result is of the highest importance in preventing the spread of the disease.

The Wassermann Reaction.

[The technique of the Wassermann reaction was here described, and the explanations which have been given of its meaning were considered. Dr. Sequeira remarked upon the increased accuracy which had been developed by the quantitative observations of Boas, observations which had been carried out in a number of cases under his care by Dr. McIntosh and Dr. Fildes in the bacteriological department of the London Hospital. The practical value of the reaction was unquestionable provided the principles laid down by Wassermann, Neisser, and Bruck were observed.]

In primary syphilis the utility of the Wassermann reaction is usually underestimated. With the more exact methods now in use McIntosh and Fildes were able to obtain a positive reaction in 24 out of 25 cases. Taking a large number of observations, Boas found that a positive reaction may be expected in 75 per cent. of primary cases. A positive reaction may be obtained as early as five weeks after *infection*, and is usually present nine weeks after infection. (N.B. This is the time after exposure to infection and not after the appearance of the chancre.) In secondary syphilis a positive reaction is obtained in 90 per cent. of the cases examined, but Boas with his more careful technique did not get a single negative result in 250 cases. In tertiary syphilis 63 per cent. of the cases give a positive reaction, but it must be remembered here that treatment must be taken into account. In congenital syphilis a positive reaction is practically constant.

The simple recapitulation of these facts is sufficient to demonstrate the value of the test, and we have only to remember that there are two other conditions occurring in this country in which a positive Wassermann reaction may be obtained, and those are leprosy, more commonly in the nodular than in the anæsthetic variety, and a transitory reaction in about 5 per cent. of the cases of scarlet fever.

The value of the Wassermann reaction is constantly brought home to those practising in dermatology, and especially in the differential diagnosis between syphilitic and tuberculous eruptions. It should be possible to make such arrangements with local authorities that a practitioner could obtain anywhere the assistance given by this examination. The blood is easily taken and can be sent through the post in suitable vessels, and it is of as much importance to the community that syphilis should be diagnosed early and correctly as typhoid fever. No difficulties are in the way of the practitioner in obtaining a Widal examination, and there should be equal facilities for the estimation of the Wassermann reaction. In some of our more enlightened colonies the Wassermann reaction can already be obtained without difficulty by any practitioner having a doubtful case.

The Influence of Treatment on the Wassermann Reaction.

Mercury.—Nearly every case of syphilis is influenced by mercury. A positive Wassermann reaction may be expected to become negative in a definite proportion of cases after one course of treatment, and the percentage rapidly rises with repeated courses. Harrison's statistics are most important and illustrative in this connexion. They are clearly shown in the following table:—

Effect of Courses of Lambkin's Cream.

After 1 course	83	per cent.	still positive.
,, 2 courses	77	,,	,,
,, 3 ,, ...	64	,,	,,
,, 8 or more courses	21	,,	,,

That is to say, that after eight courses 21 per cent. showed by the Wassermann test that they were still syphilitic.

McIntosh found as the result of the examination of 160 cases treated by Hutchinson's pills, that after one year's treatment a positive reaction was obtained in 92 per cent.; after two years' treatment in 54 per cent.; and after more than two years' treatment in 30 yer cent.

The earlier and the more energetic the treatment the greater proportion of negative reactions. This last point is of the highest practical importance and should certainly lead to the abandonment of the old practice of waiting for the development of the secondary symptoms. We cannot start our treatment too early.

Iodide of potassium.—Though it has not received so much attention it has been shown that iodide of potassium has a definite effect upon the Wassermann reaction, but not in all cases.

Arsenic.—In the form of Fowler's solution administered orally Boas was able to obtain a negative reaction in 6 out of 11 cases.

The effects of the Wassermann reaction in the more recent use of arsenic in the form of salvarsan have been very closely studied. McIntosh and Fildes have carefully followed a

number of cases treated at the London Hospital, and they arrived at the following conclusions.[2] Intramuscular and subcutaneous injections were first used. In primary syphilis no case failed to become negative, the average time being five weeks. In secondary syphilis one-third of the cases failed to become negative. Where a negative result was obtained the average time was 8 weeks. In tertiary syphilis only one case became negative. It is, therefore, obvious that the longer the infection the more difficult it is to influence the Wassermann reaction by treatment. With intravenous and intramuscular injections combined, no case of secondary syphilis failed to become negative. The average time was 6½ weeks. In tertiary syphilis nearly one half of the cases gave a negative reaction. There is no doubt, therefore, that the intravenous method is more effective than the intramuscular or subcutaneous. As large doses as are compatible with safety are indicated as early as the diagnosis is made, with a view to preventing the development of a strain of spirochætæ resistant to the drug.

Administration of Salvarsan.

[The administration of salvarsan was next considered, and the apparatus in use at the London Hospital, devised by Dr. McIntosh and Dr. Fildes, was demonstrated.]

In the McIntosh and Fildes apparatus the injection is introduced by air-pressure, the pressure being supplied by a rubber pump connected with a bottle containing the solution. The air from the pump is passed through sterile cotton wool. The apparatus is portable, and all its parts can be sterilised and brought to the bedside of the patient in a sterile condition. It is important to observe care in the preparation of the solution, especially in its neutralisation with alkali, its freedom from undissolved particles, and its proper dilution, several of the fatalities following its use being due to the absence of these precautions. The directions given by the makers should be followed with scrupulous attention.

It has now been shown possible to eliminate almost all the untoward after-effects of the intravenous injection—viz., shivering, pyrexia, and vomiting—by the use of a saline made from freshly distilled water. It is believed that ordinary distilled water contains matter, whether bacterial or other, which is responsible for these immediate after-effects. Pyrexia, shivering, &c., have been produced in my clinic in non-syphilitic patients by the injection of 300 c.c. of normal saline prepared in the usual way. These observations have been made by my former clinical assistant Mr. H. Dearden in conjunction with Dr. McIntosh and Dr. Fildes. It is now the exception with the use of saline made with redistilled water to see any rigors, pyrexia, or vomiting after the intravenous injection of salvarsan.

[The fatalities observed after the use of salvarsan were commented upon, and it was shown that a number of them were undoubtedly due to faulty technique, e.g.: (1) failure to neutralise the highly toxic acid solution; (2) insufficient dilution; (3) sepsis leading to thrombosis and embolism; and (4) failure to insist upon patients being kept at rest after the injections. In other cases the drug had been used in unsuitable cases, moribund infants, general paralysis, extreme cachexia, and grave non-syphilitic visceral disease.]

It can be stated on the authority of the agents of the manufacturers that about a million doses of salvarsan have been sold, and presuming that half a million subjects have received injections, it becomes obvious that the mortality cannot be so high as certain authors suggest. Naturally all the fatal cases have not come to light, but supposing even 50 fatalities have occurred the mortality will not be more than 0·01 per cent., and this with a potent drug requiring a careful technique and selection of cases still in the experimental stage cannot be considered high.

The important question of the permanence of the results cannot be settled yet. Definite clinical relapses undoubtedly follow the use of salvarsan. In one case at the London Hospital, after apparent cure, the patient had a return to a positive Wassermann reaction after 36 weeks, in another after 16 weeks. During the period of observation I have not interfered with the effect of the new remedy by the administration of mercury for fear of confusing the issue. There can of course be no reason why mercury should not be given to supplement the effect of the salvarsan, and it may perhaps be ultimately proved that this is the best method of treating syphilis, and it is now advocated by many eminent authorities.

Conclusions.

My own conclusions I may summarise as follows:—

1. The early diagnosis of syphilis is of the utmost importance (*a*) to prevent the spread of the infection, and (*b*) for efficient treatment. Treatment should be begun in the primary stage. There should be no waiting for secondaries.

2. A doubtful chancre should be examined for spirochætæ. The dark background illumination method affords a reliable means provided the lesion has been untreated. Such an examination ought to be within the reach of all patients in the towns and might be arranged for by the health officer.

3. The Wassermann reaction is of the highest utility in the diagnosis of secondary and tertiary eruptions. If carried out by the improved technique practically every secondary case gives a positive reaction. The reaction is also of value in determining and estimating the effect of treatment. The Wassermann reaction ought to be as much within the reach of every patient as is the Widal reaction or the examination of diphtheritic swabs.

4. Treatment by mercury is undoubtedly efficacious. Nearly every case is influenced. After eight or more courses of injections 21 per cent. of the patients still have a positive Wassermann reaction. After two or more years' treatment by mercurial pills 30 per cent. give a positive Wassermann reaction. In the latter case it is naturally extremely difficult to be sure that the patient takes the remedy.

5. As regards salvarsan the danger is not great in properly selected cases. With rigid precautions taken in the preparation of the injections and with an aseptic technique the intravenous method has many advantages. The use of redistilled saline eliminates the pyrexia, rigors, vomiting, and other unpleasant symptoms in nearly every case.

6 The immediate effects of salvarsan both on the clinical manifestations of the disease and on the Wassermann reaction are far more rapid than are those of mercury. The ultimate effects in primary syphilis are remarkable; in early cases the secondary stage may be aborted. The effects in well-developed secondary syphilis are less striking and relapses certainly occur, and it remains for time to show the permanence of the results. In tertiary syphilis healing is extraordinarily rapid, but the Wassermann reaction is difficult to alter and relapses are likely to occur.

7. Everything points to the importance of early diagnosis and early treatment.

I am indebted to Dr. McIntosh and Dr. Fildes for many observations made in this paper. Their work has been most carefully carried out, and I am glad to know that it is now generally available through their valuable monograph.

Manchester-square, W.

[2] For fuller details see their monograph "Syphilis from the Modern Standpoint," published by Arnold. See also THE LANCET, vol. ii., 1910, p. 1684; vol. ii., 1911, p. 213.

INTESTINAL MYIASIS.

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CASES of intestinal myiasis in this country are sufficiently interesting and uncommon to be worth recording. I met with one last summer, of which the following is a short account, necessarily incomplete because the mother of the child never came back to tell me how the case ended, nor gave me the further information which I had asked for.

Notes of case.—The child, a boy, aged 1 year and 2 months, was brought because his mother, very much alarmed, noticed that on Sept. 29th, when she lifted him up from the bed, there were a number of living "worms" under a small piece of flannel upon which he had been lying. More of these were found whenever he was left on the bed, though none were noticed elsewhere. The greatest number, probably about 50, were seen in the morning, and always under the flannel or mackintosh upon which he had been left all night. Fewer were found in the same situation during the day. They were still being found in about the same numbers when I saw the child on Oct. 2nd. The mother said that there were never any in the napkin, and that the stools were always free from them; this was certainly the case in the one which I saw, and they were found even when the child had not passed a motion. The infant, though rather poorly nourished, had

remained in his usual health and had had no sickness, constipation, diarrhœa, abdominal pain, or loss of appetite.

The "worms"—obviously dipterous larvæ, of which the mother brought about 40 in a bottle—were very active at first, but unfortunately they died before I reached home, probably poisoned by something in the bottle. I was therefore unable to breed any of the flies, but Mr. E. E. Austen, of the British Museum (Natural History), kindly examined them and identified them as larvæ of Musca domestica, Linn., the common house-fly, and one larva of Fannia canicularis, Linn., the small house-fly. He said that they were in their last instar and were probably full-grown. There is little doubt that they had left the child voluntarily, and had crawled under the piece of flannel, seeking a suitable place in which to pupate. The patient's mother said that she had not noticed many flies in the house, and that all the food was kept in a cupboard on the landing, outside the room.

Remarks.—Though Musca domestica is one of the insects which are most commonly concerned in these cases of accidental parasitism, I can only find ten recorded cases. In his paper read before the Entomological Society of London, 1837, the Rev. F. W. Hope collected three cases, in two of which the larvæ were vomited. Robineau Desvoidy in 1849 described a case with headache, vertigo, and vomiting, which ended in death. In Lublinski's case in 1885 full-fed larvæ of Musca domestica were vomited. W. M. Jones records a case which occurred in Sheffield of a man, aged 52, who passed 20 larvæ of this fly per anum; and Wirsung in 1906 gives two German cases, one in a breast-fed child aged 5 months, and the other, in which the species is more doubtful, in a child 1 year old. Mr. Austen tells me that he knows of a recent case in which larvæ of both Musca domestica and Fannia canicularis were passed together by a young baby. This is the only case I have heard of exactly like mine.

The dipterous larva most commonly found in the intestinal tract in temperate regions is that of Fannia canicularis (formerly known as Homalomyia or Anthomyia canicularis). The allied F. scalaris sometimes occurs, and Czokov records a case in which both were found. F. canicularis has also been found in company with Musca corvina and Calliphora vomitoria, the bluebottle fly. Many other species have been found in cases in temperate countries, but the condition is probably much commoner in the tropics.

One of the most curious is the rat-tailed larva of the drone-fly, Eristalis tenax, Linn., of which I find four certain and one probable case in the literature. One occurred in a child aged 1 year and 6 months, and in an Italian case it was associated with the larva of Calliphora vomitoria.

Larvæ of the following flies have been found in cases of intestinal myiasis in Europe and North America, in which the species concerned has been identified:—

Stratomyidæ.—Microchrysa (Chrysomyia) polita, Linn.
Syrphidæ.—Eristalis tenax, Linn.; Helophilus pendulus, Linn.
Œstridæ.—Tachina (Musca) larvarum, Linn.; Gastrophilus equi, Fabr., or an allied species
Sarcophagidæ.—Sarcophaga (Musca) carnaria, Linn., S. hæmatodes, Meig., S. hæmorrhoidalis, Fall.; Wohlfahrtia (Sarcophila) magnifica, Schiner.
Muscidæ.—Musca corvnia, Fabr.; M. domestica, Linn.; Lucilia (Musca) cæsar, Linn., L. regina, Macy., possibly intended for Phormia (Lucilia) regina, Meig.; Calliphora (Musca) vomitoria, Linn.
Anthomyidæ.—Fannia (Anthomyia, Homalomyia) scalaris, Fabr., F. saltatrix R.D. = scalaris, F. canicularis, Linn., F. incisurata, Zett., F. manicata, Meig.; Allognota agromyzina, Fall., is perhaps the species recorded as Musca nigra.
Micropezidæ.—Calobata (Musca) cibaria, Linn.
Piophilidæ.—Piophila casei, Linn.
Geomyzidæ.—Teichomyza fusca, Mcq.

Their presence usually causes only slight symptoms, and even in cases where thousands of larvæ are passed those most common are anorexia, nausea, colicky pain, and constipation or diarrhœa. In the more severe cases there may be vomiting (hæmatemesis has been noticed once) and diarrhœa of dysenteric character, sometimes accompanied by the passage of a little blood, and in one instance true melæna. Nervous symptoms—such as headache, vertigo, and epileptiform convulsions, which ceased with the expulsion of the larvæ—have been observed in a few cases. Chichester records one in 1806, in a boy aged 14, who had urticaria, violent abdominal pain, vomiting, hæmatemesis, and inability to speak or swallow owing to pharyngeal and œsophageal spasm; later there was loss of consciousness.

Death has occurred in four cases, but the proof that the larvæ were the direct cause is not very convincing in two of these.

There is still a little doubt as to how the larvæ gain access to the intestinal tract. It is generally supposed that ova laid on dressed meat, over-ripe fruit, sour bread, cheese, unboiled vegetables, or watercress by the various species of fly, each on the food suitable for its larva, are ingested, or in such a species as Eristalis tenax and Helophilus pendulus ova or young larvæ may be taken into the stomach in dirty water or with watercress.

It is possible, but most unlikely, in view of the strong instinct which leads almost all insects to lay their eggs on food suitable for the larva, that the fly ever lays its eggs directly on the living person, especially in such species as Eristalis tenax, the drone fly, and the black and yellow hover fly, Helophilus pendulus, or Piophilus casei, the cheese fly. The number of larvæ, several thousand, passed in some cases is far too great for one fly to lay at one time. The house-fly, for example, usually only lays its eggs in batches of about 120 to 150. But one of the strongest proofs that the ova are ingested is the comparative frequency with which the larvæ of two species of fly have been found associated, and which makes it almost certain they obtained ingress in no other way. The fact that in many instances the larvæ are only vomited also suggests that they were taken in by the mouth and developed in the stomach, as occurs normally in Gastrophilus. Chatin experimented with larvæ of Teichomyza fusca from a case of his, and he found that they not only lived for several days completely immersed in water or oil, but also survived when introduced into the stomachs of various mammals, and he proved their power of resistance to the gastric juice and small need of oxygen.

Jepson has shown that in the case of the house-fly development at 70° F. is very rapid. The ova hatch in 24 hours and the larvæ attain their full growth in 11 days, and in the hotter climate of India and Ceylon they are fully developed in 5 days. In the high temperature of the intestine it is probably as rapid as in India.

In many instances the source of infection has been traced with some certainty to tainted food, and in Hutton's case ova or larvæ of Eristalis tenax were probably swallowed in water from a golf course.

Pasquale has given the most convincing instance. He had four cases in Italian soldiers, and in the case of one of them he found that in a heap of potatoes—some of which the man had eaten, and which were beginning to decay in parts—there were larvæ identical with those passed by the soldier. The man had probably eaten them as ova, and the resulting larvæ had developed in his intestine synchronously with those in the uneaten potatoes.

The cases most difficult to explain are those in which larvæ have been passed for some months, and in two cases for some years, though in one of these there were fewer in the winter. These are almost certainly cases in which the source of infection has not been discovered, and ova have been taken into the body at frequent intervals. Even Cairns's case (which lasted for three years and in which as many as 1000 larvæ were passed in a single day) and Blankmeyer's case (which lasted 12 years) can be explained in this way, since Jepson has shown that even in this country house-flies will lay their eggs all through the winter and the larvæ will develop successfully if the conditions are favourable.

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DOUBLE COXA VARA WITH OTHER DEFORMITIES OCCURRING IN BROTHER AND SISTER.

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THE two children who are the subjects of this communication present a peculiar collection of skeletal deformities for which it is difficult to find a satisfactory etiology. The girl, aged 9, came under observation for a well-marked double coxa vara. The parents gave a history of pains in the back and an alteration in her gait dating back 18 months only. On examining her it was found that besides the hip affection she had abnormally short arms, many joints that were enlarged or creaked on movement, and eversion of the feet. (See Fig. 1.) Systematic examination of the bones with the X rays revealed deficient, unequal, and in some cases divided development of many of the epiphyses. Inquiry of the parents elicited the fact that a younger brother, aged 6½, had lately shown signs of lameness. He was admitted to the hospital and was found to have double coxa vara of a milder degree, and also a forward luxation of the upper ends of both radii. With the X rays it was seen that ossification in most of the bones was considerably advanced for his age. Brief notes of the cases are as follows:—

CASE 1.—A female, aged 9, was admitted to the Hospital for Sick Children, Great Ormond-street, on Nov. 26th, 1910, under the care of Mr. H. A. T. Fairbank. Her parents gave the history that for the last 18 months she had complained of pains in the back after exertion and became easily tired. Pains in the joints had not been a symptom. Her previous health had been good. There was an indefinite history of a fall when a few months old. As regards family history both father and mother were healthy. A grandmother had died from consumption. There was no history of syphilis or gonorrhœa. There were seven children, one dead from whooping-cough. The eldest, a girl aged 14, suffered from heart disease and rheumatism. The others, except Case 2, were healthy and normal in every way. There had been no miscarriages.

On examination it was found that the patient's general appearance was that of a particularly bright and intelligent child of a short and stumpy conformation. All the joints of the extremities were rather prominent. (Fig. 1.) The upper and lower limbs looked short in comparison with the trunk. The trochanters were very prominent, and there was some lordosis. Both femora showed well-marked coxa vara. The trochanters stood out prominently and were displaced upwards, on the right side to half an inch below, and on the left side to the level of the anterior superior spine. The subpubic angle was much increased. At the right hip-joint flexion and slight extension were possible, and to a very slight degree abduction and external rotation. No other movements were allowed. The left lower limb was held slightly abducted. No movements took place at the left hip except flexion and a little extension. Creaking could be felt in both joints. The knee-joints were in keeping with the other joints in being somewhat prominent. The enlargement was abrupt and irregular, rather than fusiform. The movements were free, and except creaking there was nothing further to note. Both feet were everted, but the arch was good and there was no flat-foot.

In the upper extremity the shortness of the limbs was obvious, in the vertical position the finger tips only reaching to 3½ inches below the tips of the trochanters. In a healthy boy of nearly the same age and size the fingers reached to 6½ inches below the upper limit of the trochanters. The shoulders were normal, except for the adventitious sounds on movement. The elbows were symmetrically enlarged. At the elbow flexion and extension could be performed perfectly, but pronation and supination were incomplete. There was considerable thickening of the internal condyle and the head of the radius could be luxated slightly forwards by pressing from behind. Crackling could be felt on movement. The wrists were rather larger than normal, but there was no alteration in bony points or movements. The fingers were short and flat, with prominent interphalangeal joints. Flexion was freely performed at the interphalangeal joints, but could not take place at the metacarpo-phalangeal. In other words, as the patient herself vouchsafed, she "could not make a fist." This is interesting, inasmuch as her brother (Case 2) presented a similar deformity. The parents stated that this condition had been present since birth. The X rays did not give any clue to the cause of this disability. The movements of all the joints were entirely painless. The circulatory and respiratory systems were normal. The teeth were good; there was no digestive disturbance. There were a few small glands palpable on the right side of the neck, but the rest of the body was free, and the spleen was not enlarged.

CASE 2.—A male, aged 6½, came under observation on Dec. 24th, 1910. In the course of questions concerning the family history of Case 1 it was ascertained that another child had developed lately a peculiar gait. He was accordingly brought to the Hospital for Sick Children and admitted under the care of Mr. Fairbank. It was then found that he was the subject of coxa vara also. The history given was that the change was noticed first ten months previously. No cause could be assigned. The patient had been otherwise perfectly healthy in every respect. He looked a healthy and intelligent boy, without any signs of deformity excepting enlargement of the elbow-joints, a tendency to lean forwards when standing due to slight flexion at the hips, and an almost waddling gait. The left lower limb had half an inch of shortening; the trochanter was displaced above Nélaton's line to half an inch below the level of the anterior superior spine; abduction was slightly, rotation inwards greatly, limited. On the right side the trochanter was displaced upwards to 1 inch below the level of the anterior superior spine. Both the trochanters were prominent, and both hips slightly flexed, but there was no true lordosis.

In the upper extremities interest centred chiefly on the elbows. It was found that there was a forward luxation of the upper ends of both radii. (Fig. 5.) The upper end of the radius formed a visible projection in front of the external condyle and could be grasped easily between the finger and thumb, and the finger could be inserted into the concave upper surface of the radial head. All movements were performed well, and the boy had perfectly useful joints. The condition was quite symmetrical on both sides. The interphalangeal joints of the fingers were prominent, especially in the case of the middle finger of the left hand. As in Case 1, flexion could be performed at the interphalangeal joints, but not at the metacarpo-phalangeal. The spine, ribs, and clavicles were normal. The teeth were good and the cardiac and respiratory systems were sound. There were no enlarged glands, and the spleen was not enlarged.

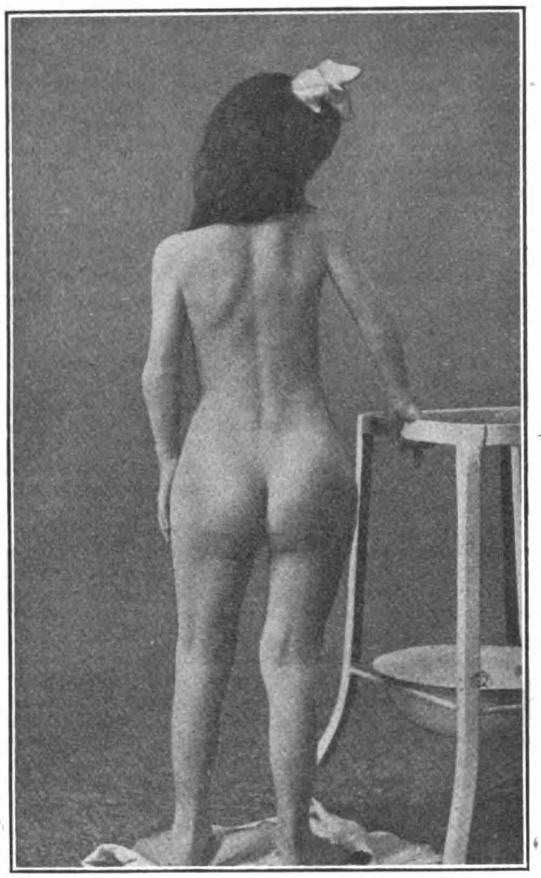
It is on examining the skiagrams that the peculiarities of the cases are manifest. Unless stated to the contrary, it may be taken that the abnormalities are the same on both sides, differing only in degree.

In the hip-joint of Case 1 the epiphysis is quite undeveloped and appears as a thin scale-like shadow in the acetabulum. The neck, on the other hand, is greatly thickened, giving the impression of considerable bony proliferation. The edge of the acetabulum is woolly and indistinct. The shaft of the femur is abnormally thin.

In the lateral view of the knee-joint the curious condition of the patella is seen. (Fig. 2). It appears to be ossifying in four separate and unequal portions. In the antero-posterior view the outline of the patella can be distinguished over the external condyle. On the inner side is an apparent loose body with a corresponding depression in the inner condyle. It is difficult to explain this except perhaps as a separately ossifying part of the femoral epiphysis. Were the patella not to be seen on the outer side, it might be taken as one of the parts of that bone seen in the preceding skiagram.

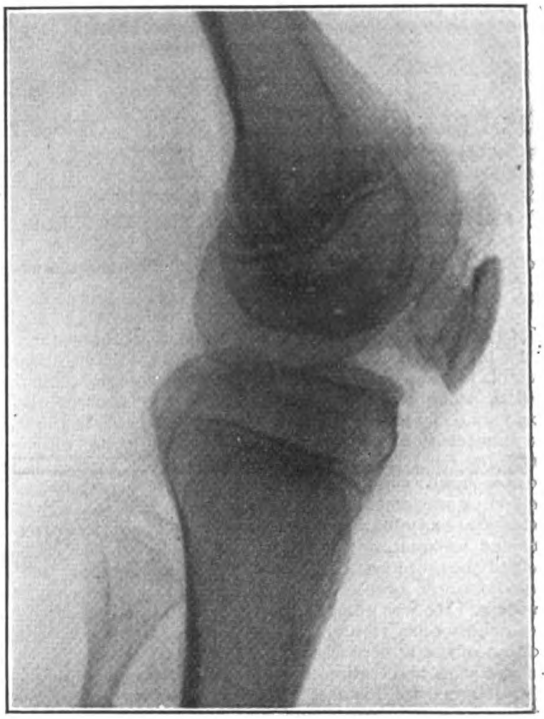
The skiagram of the tarsus shows the advanced ossification of the bones. (Fig. 3.) But, in addition, there is seen a new

FIG. 1.



Reproduction of photograph of Case 1, showing the prominence of the joints, the shortness of the arms, and the deformity of the hips.

FIG. 2.



Skiagram of left knee-joint, Case 1, showing the patella ossifying from four centres.

FIG. 3.

Skiagram of right foot, Case 1. The extra-tarsal bone is well seen between the scaphoid and internal cuneiform bones. The ossification is advanced for the age.

element in the shape of a wedge-shaped piece of bone intervening between the scaphoid and the internal cuneiform. This may be regarded from its outline as a separate part of the cuneiform. It is only present on the right side.

Ossification appears advanced in the skiagram of the wrist and hand. At the lower end of the radius is seen a rarefied area sharply marked off from the rest of the shaft. The

FIG. 4.

Skiagram of right hip-joint, Case 2, showing (1) flattened undeveloped epiphysis of the head of the femur, and (2) expansion and overgrowth of the neck.

semilunar bone of the wrist appears to be displaced upwards, for its shadow distinctly overlaps that of the radius. The lower epiphysis of the ulna is unduly small.

The skiagrams of the hips of Case 2 show the undeveloped scale-like epiphysis of the head set on a greatly expanded neck. (Fig. 4.) The epiphysis is displaced upwards and the neck appears to have proliferated beneath it to meet the acetabulum. In the skiagram of the knee the patella does not appear as a shadow at all. Both femoral and tibial epiphyses have an indistinct outline. On the other hand, the bones of the feet are as much ossified as those of a child some years older. The skigrams of the elbow-joints show clearly the forward luxation of the upper ends of both radii and the delayed ossification of the radial epiphysis. (Fig. 5.)

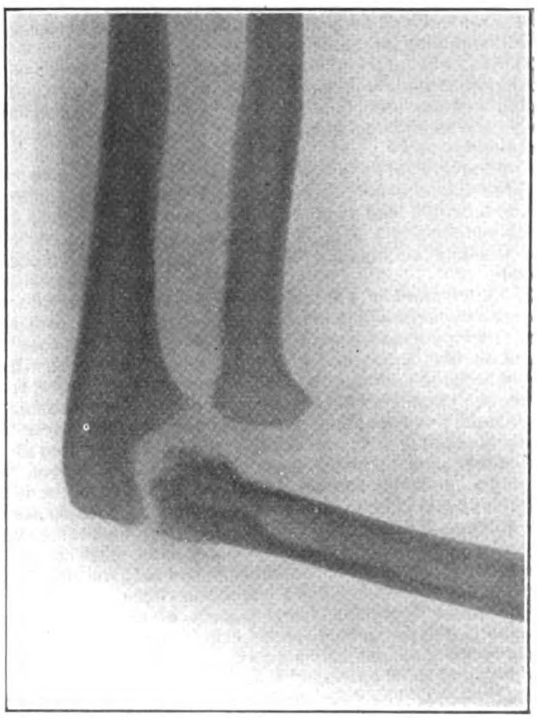
To sum up, the most interesting point in these cases is the general advance of ossification in the diaphyses, and the unequal, deficient, and, in some instances, divided development of the epiphyses of many of the bones. At first sight the clinical appearance was not unlike the osteo-arthritis occasionally met with in children. The stiffness and enlargement of some of the joints, the creaking, the coxa vara, the deficient movement at the elbows, and the fingers rather suggested it. The enlargement of the joints was slight; they are described best as prominent; they did not approach the fusiform shape that characterises rheumatoid arthritis. Moreover, the increase in size was due to slight enlargement of the ends of the bones, not to peri-articular thickening. Rickets did not seem a reasonable explanation. The X ray appearances are quite unlike rickets. Still's disease, also, could be excluded. Except for their deformities the children always have been and are in perfect health. No general enlargement of glands or of the spleen could be detected.

The shortness of the arms in Case 1 and the mental characteristics of both suggested achondroplasia, but the history alone, apart from the absence of the other distinguishing features, negatived that. The phalanges were not sufficiently enlarged to merit the term of "clubbed digits," but some of the changes shown by the X rays rather resemble those of osteo-arthropathy—Marie's sign group. Bamberger has described thickening of the ends of the shafts of long bones and also rarefaction with erosion of the articular cartilages. This is not unlike what has occurred in the lower end of the radius in Case 1. The absence, however, of the typical clubbed digits enables us to exclude that affection. It was not until systematic examination of the osseous system was made with the X rays that a fuller knowledge of their peculiarities was revealed. It was then seen that a large number of the epiphyses were abnormal. In the knee-joint the patella is ossifying in several parts; a small portion of the lower epiphysis of the femur is separate. In the tarsus there is an extratarsal bone, probably a part of the internal cuneiform developing from a separate centre. It is not very uncommon for this bone to develop in two parts.

The double luxation of the radius in Case 2 is undoubtedly of a congenital nature, and we are justified in assuming, I think, that this is not a separate condition, but that it has a bearing on the case as a whole. In a case recently reported Belot and Chaperon attributed the double luxation to the dystrophic action of hereditary syphilis. There is nothing either in the history or the physical appearance of these children to support that theory.

Maldevelopment of the epiphyseal ends of bone is always a factor to be considered in the causation of congenital dislocation of joints. It has been given as a cause in congenital dislocation of the hip by Bowlby and Lockwood, and some cases of congenital dislocation of the shoulder are due to deformity or absence of the glenoid.

FIG. 5.



Skiagram of right elbow-joint, Case 2, lateral view. The dislocation of the head of the radius is well shown.

That the epiphyseal development is, in part at least, abnormal in these cases is, I think, clear. What the real etiology of this abnormality is remains doubtful.

I am much indebted to Mr. Fairbank for permission to publish these cases, and also to Dr. W. Ironside Bruce for taking the skiagrams and assisting in their interpretation.

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THE FUNCTIONS OF THE TONSILS AND THE APPENDIX.

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IN the investigation of acquired immunity far more attention and investigation have been given to the modes of action of various antibodies in the blood stream than to the tissues in which they have been produced. But there are fairly good reasons for supposing that the spleen, the bone-marrow, and the lymphatic glands are the chief antibacterial workshops.

In this note it is proposed to deal only with a group of lymphatic structures whose antibacterial activity is not commonly considered, and, indeed, is hardly recognised. These lie close to the surface of the body, and can be called the subepithelial lymphatic glands. In this group are included the tonsils—nasopharyngeal, faucial, and lingual, the solitary follicles of the intestine, Peyer's patches, and the vermiform appendix.

The hypothesis to be advanced here is that these particular lymphatic structures protect the body against chance infection by a process of continual auto-vaccinations. Any bacteria in the vicinity are attracted by positive chemiotaxis through the overlying epithelium into the lymphatic nodule. The bacterial attack, having been invited in a region most favourable to the defensive mechanisms of the body, is nearly always repulsed. In accordance with that over-production which is so characteristic of biological response, specially trained lymphocytes and a great excess of specific bacteriolysins and antitoxins are produced. These enter the general system and lessen the risk of a successful bacterial infection at a more vulnerable part. Thus, more or less immunity against organisms is acquired by the individual without his obviously suffering from disease. On rare occasions the lymph nodule is overcome and the disease develops; but the body has meanwhile become better able to withstand a general invasion.

The facts in favour of this hypothesis are as follows:—

Anatomical.—1. *Position* of the subepithelial glands. The lymph nodules are placed directly beneath the epithelium. They are superficial even to the fibres of the muscularis mucosæ.

2. *Structure* of the subepithelial glands. Where the follicles are crowded together the overlying epithelium is folded into pits and recesses so that each lymph nodule subtends the surface. This is well seen in the nasopharyngeal and the faucial tonsils. There are no afferent lymphatic vessels.

3. *Distribution* of the subepithelial glands. They do not underlie the skin which is thick, resistant, and comparatively free from pyogenic organisms on the surface, but they are found in the throat and along the alimentary tract, where the mucous membrane is thin, permitting of absorption. Moreover, they occur exactly at those points where the micro-organisms flourish. The circumpharyngeal ring meets the bacteria entering with the food (and with the inspired air in the cases of mouth-breathers). The Peyer's patches, the appendix, and the solitary follicles are placed around the excellent incubating media in the ileum, cæcum, and ascending colon, precisely those parts which are swarming with organisms. The stomach, on the other hand, protected from bacterial growth in its contents by the acid nature of its secretion, is almost free from lymphatic tissue.

The whole anatomical arrangement of the subepithelial lymphatic glands is such as to bring them into close connexion with the chief collections of bacteria lying outside of, but adjacent to, the tissues.[1]

Clinical.—1. The subepithelial glands bear the *brunt of the attack* in faucial and intestinal infections. Scarlet fever, typhoid fever, and appendicitis are sound examples. In infantile enteritis the Peyer's patches are swollen and infected.

2. The subepithelial glands are largest and most active in young children at a period when individuals are acquiring immunity to the various common infections. In old age all lymphatic structures tend to atrophy.

3. The subepithelial glands hypertrophy as a result of repeated infectious diseases. Whooping-cough, scarlet fever, measles, and "colds" (especially if associated with deficient exercise or unhygienic surroundings) lead to enlargement of tonsils and adenoids. General increase of lymphatic structures signifies prolonged bacterial assaults, and may be accompanied by a toxin-weakened heart—the so-called status lymphaticus.

4. It is often observed during scarlatinal epidemics that a person may apparently secure immunity by a very mild tonsillitis which is unaccompanied by rash, malaise, or other signs of general injury.

5. In fulminating infections, where septicæmia is early and fatal, the lymphatic reaction is poorly developed.

Thus clinical evidence provides abundant proof of the important part played by subepithelial lymphatic glands in bacterial infections. The glands are the tissues first affected and most involved. As a rule, the tissue which is most seriously attacked provides the greatest number of antibodies. For instance, the power of brain emulsions to neutralise tetanus toxin has been satisfactorily proved.[2] Finally, there is evidence that immunity can be acquired without the general development of the disease.

Pathological.—1. Paraffin sections of the faucial tonsils repeatedly show bacteria passing through the covering of stratified epithelium and entering the lymph nodes.

2. A larger number of mitoses are seen in the lymph nodes of subepithelial glands in certain infections.

3. The lymphocytes are formed in lymphatic glands. In faucial and intestinal infections these cells are increased in number in the blood. A lymphocytosis accompanies polynuclear leucocytosis in pyogenic inflammations, and occurs alone, or predominantly, in scarlet fever, measles, variola, infantile gastro-enteritis, some cases of diphtheria, pertussis, rickets, and syphilis. In enteric fever, although there is a diminution of the total number of white corpuscles, yet the lymphocytes are increased in number. The almost constant presence of lymphocytes about an infected area seems to indicate that these cells play an antibacterial part. In connexion with the greater activity of the lymphatic tissues in children, it is interesting to note that a lymphocytosis is more easily provoked in early life.

Biological.—1. In the fierce struggle for existence types possessing useless organs are little likely to perpetuate their kind. And when the organs are, like the tonsils and the appendix, so often the seat of deadly diseases, their eradication from the race would soon be brought about had they not a more than counterbalancing protective action for their owner. The argument is, admittedly, incomplete; but at least it is fair to say that, from a biological point of view, the probability is that both the appendix and the tonsils are of more value than current opinion allows.

2. The comparative anatomy of the subepithelial lymphatic glands has received very little study. If it should be found, as seems likely, that the lymphoid tissue is better developed in those animals, such as the herbivora, where the food takes longer to digest and so allows of extra bacterial growth, it would be another point in favour of the hypothesis.

If this hypothesis is accepted as a working one, it is natural to inquire how it should affect the treatment of disease.

In the first place, the surgeon will be more than ever disinclined to sacrifice the appendix or the tonsils and adenoids unless he is quite convinced that they are dangerous or injurious. When, however, appendicitis has definitely occurred once, it is so likely to recur, and the recurrence to prove dangerous, that the appendix should be removed even if the exterior appears healthy. Besides, there is still some lymphoid tissue left in the cæcum which may be equal to the increased demands upon it. But one wonders whether a few of the cases of coli bacilluria and cystitis are not due to previous disease or removal of the appendix.

Similarly, the obvious benefit of removing adenoids, which are completely obstructing nasal respiration, is so considerable that no surgeon should stay his hand for a theoretic disadvantage. But the removal of a slight enlargement of the naso-pharyngeal tonsil consequent upon an otorrhœa may deprive the patient of the means of vaccinating himself against the organisms in the pus escaping from the Eustachian tube.

[1] The Subepithelial Lymphatic Glands, Guy's Hospital Gazette, May 13th, 1911.

[2] Ehrlich: Studies on Immunity, Section XXXI., New York and London, 1906.

In the second place, the hypothesis may lead to fresh methods in preventive medicine. If during a scarlatinal epidemic a slight infection of the tonsils without a true attack will immunise the individual the physician may take charge of the process and apply infective material (in which the unidentified organisms have been destroyed by heating) to the tonsils of those not previously attacked. The dead organisms would be drawn into the lymphoid tissue and antibodies formed. Or feeding with dead typhoid bacilli might protect against typhoid fever. But these methods would have this danger, that the consequent reaction in the subepithelial glands, if too severe, might pave the way for a secondary infection.

The hypothesis would seem to have this merit, that its tenets and conclusions can be further investigated without great difficulty.

Bowdon, Cheshire.

Medical Societies.

ROYAL SOCIETY OF MEDICINE.

SURGICAL SECTION.

The Talma-Morison Operation.

A MEETING of this section was held on Jan. 9th, Mr. CLINTON T. DENT, the President, being in the chair.

Mr. RUTHERFORD MORISON read a paper on the Operative Cure of Ascites due to Liver Cirrhosis. He said that during a visit to the post-mortem room Dr. David Drummond showed him the body of a man dead from cirrhosis of the liver and explained that this patient had no ascites because the collateral circulation, chiefly through the enlarged veins of Sappey, had relieved the portal obstruction. He (Mr. Morison) suggested that if his explanation was correct, it might be possible to cure an existing ascites by an operation, which would establish a new anastomotic circulation. In regard to the ordinary connexions between the portal and systemic circulations, when adhesions form between the viscera and parietes, innumerable new vessels develop in them and convey blood freely from the portal into the systemic circulation through the subperitoneal plexus of veins. Probably the most important of these new channels could be developed in adhesions between the omentum and parietes. A study of Nature's methods suggested that operation might be useful in selected cases, for they were familiar with the enormous newly-formed blood-vessels frequently met with in the portion of omentum adherent to rapidly growing abdominal tumours; they had seen adhesions of all sorts in the abdomen develop large vascular channels, and they knew that such vascular adhesions could form with considerable rapidity. Other factors besides mechanical obstruction of the portal vein doubtless aided the development or retarded the arrest of ascites due to cirrhosis; but his cases proved at least that the establishment of an artificial circulation could cure it. Experience had confirmed that view, but, as he had always been careful to point out, the cases in which operation could be of use were rare and must be carefully selected. So far as he knew, the most suitable were those of alcoholic cirrhosis in patients otherwise sound, and whom repeated tapping had failed to cure. None of those cases had in their experience been failures. The reason probably was similar to that of the cure of dropsy from heart failure following persistent over-strain. In both the chief predisposing cause of the dropsy could be removed, in the case of the heart by rest, in the case of the liver by abstinence from alcohol. That explanation seemed probable because though he had operated upon patients in good condition with ascites due to syphilitic cirrhosis, none of them had been cured. The most unfavourable cases were those which at their commencement simulated an abdominal emergency and sufferred from pain and tense tympanites preceding the development of ascites. In operating, the choice of an anæsthetic might be of importance. The great danger in these cases appeared to be the development of a condition related to acute yellow atrophy, and chloroform, as was well known, could produce similar hanges in the liver, so that some other anæsthetic should be chosen. The abdominal incision should be made above the umbilicus to avoid the development of a ventral hernia. The steps of the operation were: (1) Open the abdomen from the ensiform cartilage to the umbilicus; (2) introduce the hand into the abdomen and project a finger against the anterior parietes in the middle line three inches above the pubis; (3) make a small incision on to the finger-tip, and through that introduce a long small glass drainage-tube into the recto-vesical or recto-uterine pouch; (4) dry the abdominal cavity and scrub the peritoneum with mops; (5) suture the omentum to the anterior parietal peritoneum across the abdominal wall and close the upper abdominal wound; (6) apply an antiseptic dressing over the wound and tube, and over this, from above down to the tube, a series of long circular strips of adhesive strapping, with the object of keeping the parietal in contact with the visceral peritoneum; (7) the tube now exposed through the dressings is surrounded with a sheet of dental rubber perforated to grasp it below the collar on it, and the separated tube dressing is wrapped up in the indiarubber sheet. For after-treatment a nurse was engaged to attend to the tube and pump off the fluid sufficiently frequently to keep the dressings dry. If that could be accomplished the dressings required no change for ten days, after which, as a rule, a small indiarubber tube could be made to take the place of the glass one. He had heard of septic peritonitis resulting from that operation. In Newcastle they had never seen that, and it might be that their free use of antiseptics during the operation and in the dressings was the explanation. As a rule the wounds were entirely healed in one month, and no further accumulation of fluid occurred. It need, however, occasion no serious disappointment if the fluid re-accumulated, as some of their most successful cases had required tapping on one or two occasions after recovery from the operation.

Dr. W. HALE WHITE said he agreed with Mr. Morison that the cases of cirrhosis for which this operation was suitable were rare; he would say they were extremely rare, and that other factors than pressure on the portal vein were usually operative in the production of ascites. He pointed out that none of the cases in which Mr. Morison claimed success were ordinary examples of cirrhosis. The operation would be even less used in the future, for the consumption of alcohol was decreasing, and only a quarter of those who had cirrhosis had ascites. That pressure on the portal vein was the chief factor in causing ascites was unlikely, for the effusion of fluid might be sudden; the liver might be very contracted without ascites; there might be ascites and yet the branches of the portal vein might be normal, and ligature of the portal vein usually did not cause ascites, or if a little fluid was poured out it was quickly re-absorbed. The ascites was probably toxic, and cirrhosis of the liver should be regarded as a local disease of the liver causing many general toxic symptoms. The poison produced by the liver was lymphagogue; hence swelling of the feet, certainly not due to pressure on the vena cava, pleural effusion, ascites, a raised temperature, and coma—all often seen in cirrhosis. The appearance of ascites was a serious symptom, for in uncomplicated cases it indicated that the end was not far off, nearly every patient being dead within two months of the appearance of the ascites; hence in uncomplicated cases operation was useless. As a rule, when a patient with cirrhosis survived many tappings, some contributory cause to the ascites was present. Further, it must be remembered that dogs in which a communication between the portal and general venous system had been made died.

Dr. H. D. ROLLESTON said that the rationale of the Talma-Morison operation was not, he believed, merely opening up a collateral circulation; if that was carried to excess the condition resembled that of Eck's fistula in which uræmic symptoms were apt to supervene. Patients after the Talma-Morison operation indeed might for some time exhibit some symptoms of mental disturbance. The increased anastomosis probably acted by diminishing the blood flow to the liver, and enabled the liver to deal more satisfactorily with the blood passing through it and so reduce the toxæmia which was probably the main cause of ascites. The changed blood-supply to the liver might so improve the nutrition of the liver cells as to allow compensatory hyperplasia of the liver cells. The operations consisting in permanent drainage into the subcutaneous tissues (Schiassi, Narath, Handley) or into the saphena vein (Routte, Celso) were on a different footing from

the Talma-Morison operation, as they did good by removing the fluid and could not be thought to improve the nutrition of the liver. Possibly those operations might act in the same way as autotherapy—i.e., injection of ascitic fluid into the subcutaneous tissues of a patient with cirrhotic ascites—did. The Talma-Morison operation was of value in selected cases—namely, cases in which ascites occurred in patients who were in such good condition that they could stand the operation, and in whom there was a sufficient amount of liver substance left to undergo compensatory hyperplasia and carry on the antitoxic functions of the liver. The contra-indications to the operation were: (1) an advanced stage of the disease as shown by debility, wasting, and considerable toxæmia; (2) considerable jaundice; and (3) definite kidney or heart disease. These cases were rare; they were presented by cases in which ascites appeared soon after hæmatemesis. His own experience was confined to three cases; one survived two and a half years, another about six months, and a third died soon after operation. He did not agree with Dr. Hale White's view that ascites in cirrhosis seldom or never required tapping more than once; he did not think that was quite correct.

Mr. H. J. WARING said that during the past 10 years he had frequently practised the operation of omentopexy. In his first cases he fixed the omentum to the parietal peritoneum, and in a few cases scarified the surface of the liver before fixing it to the deep aspect of the abdominal wall. In his later cases he had, after making a median incision, incised the umbilicus and then freely opened the rectus sheath on each side; a large portion of the great omentum was then spread out within the sheaths of the rectus on each side and anchored by a few sutures, taking care to avoid the inclusion of any of the large omental veins. In his opinion this procedure brought into contact a large area of the omentum with the superior and deep epigastric veins of the abdominal wall. The results obtained from this latter operation were far superior to those obtained by the former operation. He stated that the cases most suitable for the operation of omentopexy were comparatively early cases of ascites due to cirrhosis of the liver in patients who were not old and in whom there was no evidence of digestive disturbances consequent upon toxic absorption. Emaciated people the subjects of cirrhosis of the liver, especially those with jaundice, were entirely unsuitable for the operation.

Mr. W. SAMPSON HANDLEY, after referring to the reader of the paper as the pioneer in the successful treatment of ascites by operation, said he was inclined to think the drainage methods more recently developed at the Middlesex Hospital were preferable to epiplopexy. He admitted, however, that the materials for forming a judgment as to the best operative method in ascites were not yet to hand. He thought the cause of knowledge would be best served by a parallel development of the various methods in the hands of different surgeons. But in any case the surgical treatment of ascites, though applicable only in selected cases, had come to stay. The surgical methods used in ascites belonged to two categories. Either they aimed at diverting the blood current from the congested portal system to the systemic vessels or at facilitating the resorption of the ascitic fluid. The first method, that of Mr. Rutherford Morison, though at first sight more rational, could only reinforce a collateral circulation, which was anatomically known to be a free one. If it produced any large increase in the area of the collateral channels it brought with it the danger of intoxication by unfiltered intestinal products. He did not deny its success in certain cases, but he believed its effects were largely dependent upon the peritoneal drainage which accompanied it and upon the leakage of ascitic fluid into the subcutaneous tissues at the point of implantation of the omentum. If that was so the same effects could be secured more simply and safely by the drainage methods. He considered femoral drainage (Wynter's operation) as the operation of choice. When it failed drainage by silk threads (lymphangioplasty) should be used unless the ascitic fluid was being secreted at a very rapid rate. This had been the apparent cause of failure in two of his cases. The first case in which lymphangioplasty[1] was done had now remained well and able to work for two years, although she had not given up her alcoholic habits. Recently Mr. R. Atkinson Stoney had recorded a successful case. A third method consisted in implanting the saphenous vein into the peritoneal cavity. His experience of this operation consisted of one unrecorded failure in April, 1910. At the time he did not know that the operation had been tried. The valves of the vein proved to be incompetent, and bleeding occurred from its proximal end. The fourth method, recently recorded by a Dublin surgeon, consisted in implanting the external saphenous vein into one of the portal tributaries. The recorded case was a failure, but the method had future possibilities, though it brought with it the danger of toxæmia. In regard to autoserotherapy he wished physicians would try it for a while as a routine measure after tapping ascites.

Dr. W. ESSEX WYNTER said that the actual cause of ascites was too long and complicated a matter to go into at the moment; the practical point was that, on the one hand, the peritoneal cavity was over-distended with a benign nutrient fluid which hampered the circulation and respiration by its bulk, and on the other, the system was starved of nutrient and fluid, the want of which resulted in wasting and toxæmia. Though it had scarcely been mentioned, one of the most striking features of ascites was the tendency to anuria accentuated at each paracentesis. The problem that presented itself was the transference of the ascitic fluid to the general circulation, and for the patient the avoidance of the detention and loss of activity inseparable from the old method of repeated tapping. He had secured this in some cases by getting a surgeon to open up the femoral ring and so drain from the lowest available point of the abdomen into the upper region of the thigh. The greatest difficulty resulted from the tendency of the peritoneum to close any breach in its continuity. In one recent instance where the patient was kept lying up for three weeks by a leakage at the femoral incision a pouch formed as large as the two fists limiting the extension of the serum to this region by the development of an endothelial lining. It was not, however, essential to maintain perpetual drainage, it being sufficient to establish it for a few weeks so that by relief of tension in the abdominal walls the normal collateral circulation could expand. In the Talma-Morison operation this was effected by the continuous drainage into the dressings after the evacuation of the cavity, for it could hardly be contended that the small addition to the collateral circulation afforded by the epiplopexy can be of any serious importance. One of the principal channels concerned in the re-establishment of the circulation was the vena azygos major, whose radicles below the diaphragm were often as large as the forefinger in such cases. It was a matter of disappointment in the majority of instances that the drinking habit continued; both those recently shown at the Clinical Society after three and four years' freedom from ascites were still steady tipplers, and another case had returned to hospital only a fortnight after her discharge the worse for liquor. The more promising would certainly be the scarce non-alcoholic cases of cirrhosis and those of chronic peritonitis.

Mr. SINCLAIR WHITE (Sheffield) wrote stating that he had operated on 19 patients and had had five deaths directly due to the operation; three from anuria with mild delirium passing on through coma to death at about the end of a week; one from septic peritonitis on the eleventh day, consequent on bursting open of the abdominal wound during a fit of coughing; and one from exhaustion on the fourth day, in which there was free venous oozing from the omentum. Of the cases which recovered from the operation, four were not appreciably benefited. In three cases the ascites did not completely disappear, but some improvement in health occurred; all three, however, died within 12 months from the date of operation. In the remaining seven cases the ascites gradually disappeared, in two of them not until subsequent tapping had been done, and a more or less complete return to good health ensued. Unfortunately, in two instances a relapse to intemperate habits, in one patient after an interval of nearly two years, ruined what promised to be permanent recoveries. One patient is in robust health after aninterval of nine years; a second was, a few months ago, reported to be quite well after an interval of nearly six years. A third died from carcinoma of the colon two years after operation without recurrence of the ascites. The two remaining cases had been operated on during the last 12 months, and both promised well. Operative measures should be restricted to: (*a*) securing adhesions between the anterior surface of the great omentum and the posterior

[1] Handley: Hunterian Lectures on the Surgery of the Lymphatic System, THE LANCET, April 9th (p. 977) and 16th (p. 1052), 1910.

surface of the right rectus muscle. He made a 6-inch vertical incision 2 inches to the right of the linea alba, reflected the peritoneum and posterior layer of the rectus sheath outwards and inwards, implanted the omentum into the pocket thus formed, and secured it by a few interrupted sutures, taking great care not to puncture the omental vessels. (*b*) Peritoneal drainage through a suprapubic opening for from six to ten days. A progressive increase in the amount of urine excreted from the third day onwards nearly always took place in patients who did well. From a surgical point of view cases of cirrhotic ascites might be conveniently divided into two classes. In one of these, owing to a well-developed anastomosis between the portal and systemic veins, ascites appeared only as a terminal symptom, and not until the liver cells were hopelessly damaged and there was present accompanying degeneration of the vascular and possibly renal systems. Patients of that class were rarely difficult to diagnose. The congested skin with spider-webbed angiomata of the face, often an icteric hue in the conjunctivæ, great loss of strength, rapid wasting of the upper half of the body, acute progress of the ascites with œdema of the legs and genitals, and pronounced dyspnœa and tachycardia on slight exertion were the sure harbingers of death which no operation could avert. In the other class the collateral circulation was imperfectly developed, and ascites of gradual onset appeared as a comparatively early symptom before the hepatic cells had undergone serious degeneration. In many of those it would appear that the incidence of the poison (alcohol or other) extended to, and was most marked on, the peritoneal covering of the liver, hence an extensive and pronounced perihepatitis was commonly found associated with a greater or lesser amount of interstitial fibrosis. The patients were usually under the age of 50 years, might have quite healthy vascular and renal organs, and, apart from the abdominal distension, might be in fairly good health. Those were the cases which derived great benefit from epiplopexy, and, generally speaking, it should be restricted to them. There were, of course, borderland cases where the expediency of operating would give rise to anxious consideration. When in doubt one or more tappings would often help them to arrive at a decision. Indeed, in all cases a preliminary paracentesis was of value.

Mr. W. G. SPENCER said that if he differed from Dr. Hale White it would be because he had had no experience of the acute form of ascites rapidly running on to death. Dr. Hale White had drawn a distinction between ascites and ascites due to alcoholic cirrhosis. His remarks might apply with limitations. But there was the practical point against the latter part of Dr. White's statement and that was the great advantage of an exploration of the abdomen for the cases of ascites which had been repeatedly tapped. Following upon the appearance of Mr. Morison's first paper, physicians—Dr. de Havilland Hall, Dr. Murrell, Sir William Allchin, and others—had sent him cases, in some of which the great value of the operation had turned upon the exploration of the abdomen. Others had been definitely cases which came under the heading of those described by Mr. Morison. Mr. Spencer mentioned several cases in which exploration had been important. One, under Dr. de Havilland Hall, was tapped ten times and after each tapping carefully examined, but nothing was found until the abdomen was explored, and then it was discovered that she had two small papilliferous ovaries, which were removed, and the patient was shown some time afterwards, the condition having been cured, at the Medical Society. She was a housewife, looking after a family of ten children, and she continued well. The second was in a young man who was tapped, and no explanation could be given until the abdomen was explored, and then a contracted adherent appendix was found. When that was removed the lad got well and remained so. Mr. Lockwood said that that was an exceptional case; no doubt it was, but it was worth mentioning. A third patient was tapped several times and later drained. It turned out on exploration that the cause of her ascites was pelvic peritonitis traceable to a puerperal condition, and she was cured by fixing the omentum after Mr. Morison's fashion. He showed her at the Medical Society some time afterwards, and she had remained well, the date of exhibition being 1903. There was another case, an obscure abdominal condition, under the care of Sir William Allchin. The patient was invalided as a hopeless case. On exploration it turned out that his ascites must have been due to chronic inflammation of the duodenum with peritoneal inflammation around. He was cured after the omentum had been fixed to the abdominal wall. He developed veins, though they were not so marked as in the photograph Mr. Morison showed. He was taken back by his firm after an illness of eight years. Mr. Spencer had fixed the omentum in atrophic cirrhosis of the liver, and the cases had been relieved from further tappings, but they had remained in bed without general improvement, and had died. One woman had a liver half the normal size and lived only five weeks. He had not lost one of those cases from the operation. Of the hypertrophic cirrhosis of liver cases he would not say they were cured, but they remained a long time without return of the fluid. Perhaps they did not all accord with Dr. Hale White's connexion of ascites with cirrhosis, but there was one alcoholic patient who had been tapped many times. She was a typical besotted old woman who said she drank as much as she could get, and probably she did. She was shown at the Clinical Society four years after fixation of the omentum without any reaccumulation of fluid. She afterwards developed most rapid carcinoma of the breast, which was removed. It recurred six months afterwards, and she died. At the post-mortem examination an anastomosis was seen such as Mr. Morison described, but there was no fluid. Her statement regarding the four years was that she continued to drink as much as she could get, though perhaps that was not very much. One case, under the care of Dr. Hall, was well for five years, then he returned and was tapped; this was followed by heart changes and he died. Another case was one which Dr. Murrell called a variety of Banti's disease. It was that of a girl aged 25, who had inflammation of the lungs, followed by ascites and repeated tappings, and she had enlargement of the liver and spleen. After the operation she was relieved for one and a half years, and went back to her work. Then she relapsed and after further tappings died. The patient showed anastomosis. He could mention two other cases which were moderately unfavourable. In both the patients wished for something done instead of being continually tapped. A case under Dr. Hall and Dr. Roger Smith, of ascites with hypertrophy of the liver and cirrhosis, was that of a patient who had been seen by two consulting physicians, one of whom gave her three months to live and the other six months. The patient was weary of the tappings and she urgently wished operation. The first operation, done in 1909, was by Mr. Morison's method. That relieved her for nine months. When the ascites recurred and tapping became again necessary she wished a second operation. So he adopted Dr. Wynter's method of putting tubes, one in each femoral canal, and they conducted the fluid into her legs, which had to be kept raised. Later those tubes became blocked with fibrin and the fluid re-collected in the abdomen. She then decided upon a third operation, and as there was a moveable kidney it occurred to him to decapsulate the moveable kidney and dissect off a neighbouring piece of peritoneum. That operation again relieved her from the need for continual tapping. Later, at a fourth operation, he adopted Mr. Sampson Handley's method, taking double strands of long silk, putting them from the pelvis through the abdominal wall up to the breast, axilla, and kidney. That had not cured the patient, but tapping was required less often. The other day she was tapped for the thirty-fifth time, and her liver then reached down to the umbilicus. He did not know the cause of the ascites. In another woman he varied the operations. She had been improved for a time by the Drummond-Morison method, and thought so much of it that she wanted something more done. At the second procedure he did what was first proposed by Mr. Turner, of St. George's Hospital—namely, scraping the liver very hard. That relieved the patient for a time. Dr. Peter Paterson, of Glasgow, had invented a method of putting glass buttons in the abdominal wall, and Mr. Spencer, at a third operation, relieved this patient for a time by inserting a button. A case under Dr. W. G. Stone had ascites complicated by diabetes. He died five weeks after epiplopexy in diabetic coma. Both the diabetes and ascites were due to the formation of pancreatic calculi. Dr. Stone injected the omental vessels and found that a good anastomosis with the abdominal wall had already occurred. Mr. Spencer had never seen any harm come from these operations, and he was sure the patients' lives were prolonged. It

was a procedure which surgeons should urge, for it incidentally brought about an exploration of the abdomen.

Mr. G. H. MAKINS and Dr. F. PARKES WEBER also joined in the discussion, which was concluded by a brief reply from Mr. MORISON.

CLINICAL SECTION.

Exhibition of Cases.—Relative Value of Immediate and Delayed Laparotomy in Pneumococcal Peritonitis.

A MEETING of this section was held on Jan. 12th, Sir WILLIAM OSLER being in the chair.

Mr. PHILIP TURNER showed a case of Primary Chancres of the Lip in a male patient who was admitted to Guy's Hospital for an ulcerated swelling of the lower lip, which was first noticed eight weeks ago. The swelling, which was at first soft, rapidly increased in size, and in four weeks the skin broke and it commenced to discharge. About this time a second swelling appeared on the free margin of the lip. For two weeks the patient had complained of a sore throat. There had never at any time been any sore on the penis. When seen on Jan. 1st there was a round, raised swelling on the chin just to the left of the mid-line. In the centre of that was a circular ulcer about 1 in inch diameter, the base of which was composed of unhealthy-looking granulation tissue discharging thin pus. A second small indurated area, with slight ulceration, was present on the mucous surface of the lip at its junction with the skin. The submental, submaxillary, and cervical glands were enlarged but not tender, and the axillary glands were also palpable. There were ill-defined patches of a dull red erythematous rash on the chest and abdomen. Superficial ulcers with grey bases were present on both tonsils.

Dr. HERBERT FRENCH showed a case of Tumour below the Right Hypochondrium, ? Riedel's lobe. The patient, aged 34, was a married woman who had had six children, the youngest of whom was now 2 years old. She came to the hospital complaining of indeterminate symptoms, of which the chief were a feeling of being less strong than she was, a deficiency in her usual appetite, with a tendency to be sick in the morning. There were no symptoms directly referable to the abdominal tumour, which was only found as the result of ordinary routine examination. The woman had defective teeth, which probably accounted for her vague stomach symptoms; she looked strong and well. There was more than the usual degree of abdominal pigmentation, but that, she said, had been present for years. The patient had long had a tendency to constipation, but that had shown no increase of late. Extending down from beneath the right costal margin for a distance of 3½ inches there was a firm, painless, smooth tumour, more or less the shape and size of a goose's egg; it was external to the right mid-clavicular line and abutted upon the right flank, but did not extend backwards so as to fill up the loin. It could be grasped easily bimanually or by one hand when the fingers were behind and the thumb in front. It moved up and down with respiration, was dull to percussion, and the dulness over it was continuous with the hepatic dulness. There was no general enlargement of the liver. The lump seemed to be too much to the right to be a gall-bladder; it did not fill up the loin as a renal tumour or a suprarenal tumour would, besides which the urine contained no albumin, sugar, pus, or blood. The mass was smooth and permanent, and did not suggest from the feel of it that it was due to fæcal accumulation in the bowel or to a carcinoma of the hepatic flexure, and although the diagnosis was open to question the case was brought before the section as an example of a well-defined Riedel's lobe of the liver. There being no symptoms referable to the tumour, it seemed to require no treatment.

Dr. F. PARKES WEBER showed a case of Recurrent Aphasia with High Blood Pressure. The patient, aged 51, was admitted into the German Hospital on March 8th, 1910, having had eight attacks of slight temporary aphasia during the last seven weeks before his admission. Each of these attacks was accompanied by slight hemiparesis; in seven of them the paresis was on the right side, but in one of them on the left side. For six or seven weeks he had had headache, but there had been no vomiting or loss of consciousness. The patient was a well-nourished, intelligent man. He had slight optic neuritis, best marked in the right eye. The plantar reflex was of the extensor type (Babinski's phenomenon) in both feet, best marked in the left. The knee-jerks were active on both sides. The brachial systolic blood-pressure was 160 mm. Hg, and the radial arteries felt somewhat thickened. The urine was free from albumin and sugar, but a few tube-casts were detected by the centrifuge method. Nothing else abnormal was discovered. There was no history of syphilis. He was treated by iodide of potassium and had no further cerebral attacks. On April 10th, 1910, when he left the hospital, he said that all he had to complain of was slight headache in the morning. There had been no fever whilst he was under observation. The pulse had varied from 74 to 88 per minute. The daily quantity of his urine had averaged about 2500 c.c. He had increased somewhat in body weight. His brachial systolic blood pressure was 145 mm. Hg. Later on (in June, 1910) it was 150 mm. Hg. When seen again recently (Dec. 20th, 1911) the patient said he had had no further cerebral attacks and had not taken any medicine for a year. His only complaint was that attempting to work brought on a headache at the top of his head. Nothing abnormal could be discovered in his heart, lungs, or abdominal organs. His brachial systolic blood pressure was 140 mm. Hg. There was no paresis anywhere. The pupils were of medium size and reacted to light. Nothing abnormal could be discovered by ophthalmoscopic examination. The plantar reflexes were of the normal (flexor) type.

Dr. WEBER also showed a case of Chronic Splenomegaly of uncertain origin, with persistent leucopenia. The patient was a married Jewish woman, aged 23. Her spleen reached a good hand's breadth below the left ribs, but did not feel hard. Otherwise the patient appeared well, though rather pale. The history was that, after a confinement in August, 1910, she suffered from pains in the loins, headache, and giddiness. She had previously had no special illness; never malaria or jaundice. On admission to the German Hospital (Oct. 6th, 1910) she was found to have decided enlargement of the spleen, but beyond some abnormality in the blood nothing else abnormal was discovered. The red cells were 4,850,000 and the white cells only 2575 to the cubic millimetre of blood; the hæmoglobin was 80 per cent. On Oct. 30th, 1910, whilst under arsenical treatment, the patient was suddenly attacked with severe abdominal pain and vomiting, and, as there was likewise free fluid in the peritoneal cavity (shown by moveable dulness), the abdomen was opened by Dr. E. Michels. Nothing abnormal, however, was detected, excepting the presence of some ascites and enlargement of the spleen and liver; the capsule of the spleen was adherent to the surrounding parts; the peritoneum appeared extremely vascular. The patient recovered well from the operation and from the ascites, and left the hospital on Nov. 19th, 1910. Whilst in the hospital occasional moderate fever was observed. Wassermann's sero-reaction for syphilis gave a negative result, and von Pirquet's cuti-reaction for tuberculosis was likewise negative. A blood examination on Oct. 24th, 1910, gave: Red cells, 4,222,200 per c.mm.; white cells only 1200; hæmoglobin, 92 per cent. Differential count of white cells: polymorphonuclear neutrophiles, 27·4 per cent.; small lymphocytes, 44 per cent.; large lymphocytes, 11·3 per cent.; eosinophiles, 9·3 per cent.; transitionals, 7·3 per cent.; myelocytes, 0·7 per cent. Two nucleated red cells were seen. The white blood cells numbered 2680 on Nov. 19th, 1910, and 2650 on Jan. 2nd, 1911. A blood count in July, 1911 (when the patient was pregnant) gave: red cells, 4,660,000, and white cells 3500 in the cubic millimetre of blood. At this time the patient's disease might perhaps have been termed one of "anæmia splenica sine anæmia." In October, 1911, she lost much blood at her confinement. The most recent blood count gave the following figures: red cells, 3,922,000; white cells, 1975 per cubic millimetre of blood; hæmoglobin, 65 per cent. Differential count of white cells: polymorphonuclear neutrophiles, 68·3 per cent.; small lymphocytes, 14·7 per cent.; large lymphocytes, 4·6 per cent.; eosinophiles, 5·7 per cent.; transitionals, 6·7 per cent. Two normoblasts were seen during the count of 300 white cells.

Dr. WILFRED HARRIS showed two cases of Alcohol Injection of the Gasserian Ganglion for Trigeminal Neuralgia.[1]

Dr. H. E. SYMES-THOMPSON showed a case of Pulmonary Stenosis in a woman, aged 34, married, who enjoyed good health on the whole, and had had five children, including

[1] Dr. Harris's paper will be published in full in THE LANCET.

twins. She had noticed undue shortness of breath on exertion as long as she could remember and she complained of a certain amount of dyspepsia and constipation from time to time. Over the base of the heart there were a loud systolic murmur and a systolic thrill, which were most marked over the pulmonary area. The cardiac dulness was normal. There was no clubbing of the fingers, cyanosis, or anæmia, and no history of rheumatic fever, scarlet fever, or diphtheria.

Mr. C. H. FAGGE showed a case of Epithelioma of the Tongue; operation; subcutaneous recurrences on back five years later. The patient, aged 54, noticed a sore area on the dorsum of the right half of the tongue in 1892. During subsequent years it disappeared and recurred several times. Until 1897 he smoked about 4 oz. of tobacco in a pipe weekly; after that he reduced the amount. For two months before admission the tongue was ulcerated. In November, 1905, he sought admission into *Guy's* Hospital for indurated, raised ulcer, 1 inch in diameter, on the right half of the tongue; the left half of the dorsum showed chronic superficial glossitis; there were no palpably enlarged submaxillary or cervical lymph glands. The right half of the tongue with the submaxillary, salivary, and lymphatic glands were removed, and the patient was not seen again until December, 1911, when he complained of two hard, fixed masses on his back—one over the lower left ribs near the spine, and the other, the larger, on the right side; part of the latter was excised under local anæsthesia. Microscopically the lingual ulcer showed a typical squamous epithelioma; the lymph glands showed no secondary deposits. There was some difference of opinion as to the nature of the subcutaneous mass, and Mr. J. H. Targett had given Mr. Fagge his opinion that it was a secondary epitheliomatous deposit undergoing necrosis.

Mr. CYRIL A. R. NITCH showed a case of Supernumerary Mamma in a male aged 40, which was first noticed by the patient ten years ago. The breast was situated on the posterior fold of the axilla and the postero-internal surface of the upper arm on the right side. It was well formed and possessed a well-shaped nipple. The organ did not secrete any fluid.

Dr. H. C. CAMERON read a paper on the Relative Value of Immediate and Delayed Laparotomy in Pneumococcal Peritonitis. He said he had collected the cases of pneumococcal peritonitis admitted into Guy's Hospital during the last few years in order to attempt to estimate the effect of immediate laparotomy in that condition. He found that in many cases the diagnosis was correctly made. Pneumococcal peritonitis had characters which often distinguished it from peritonitis due to other causes. The age and sex of the cases collected were as follows:—

Females.		Males.	
No.	Age.	No.	Age.
1	27 years.	1	22 years.
1	20 ,,	1	18 ,,
2	15 ,,	1	16 ,,
1	14 ,,	1	10 ,,
1	11 ,,	1	4 ,,
1	9 ,,	1	3 ,,
4	8 ,,		
3	6 ,,		
2	5 ,,		
1	3 ,,		
1	2 ,,		
Average, 9·3 years.		Average, 11·7 years.	

With regard to other pneumococcal infections, in 13 cases it was possible to say with certainty that there were other pneumococcal infections present at the same time. Of these, 12 died. One case, which certainly had lobar pneumonia also, recovered. In 12 cases there was no certain evidence of the infection of any other part; of these, 6 recovered and 6 died. Since the peritonitis was always the result of a pneumococcal septicæmia, the aspect of the patient and the type of respiration were sometimes those familiar in lobar pneumonia. Herpes labialis might be present and the onset might be with rigors or shivering. A high leucocyte count might be found. In four cases which Dr. Cameron had examined during the last few months marked ulceration of the colon was present, and the symptoms of colitis had preceded the onset of peritonitis by several days or even weeks. For example, one case was that of a young woman admitted to Dr. Hale White's wards on Nov. 11th. For four days she had had intermittent colicky abdominal pain. On her way home from work the pain suddenly became worse, and she was brought to hospital. Dr. Cameron was called to see her at 10 P.M. The temperature was 104° F., and her abdomen was rigid over the appendix. The abdomen was opened and the cæcum was found to be thick and œdematous. Its peritoneal coat was inflamed, and there was a little clear fluid, which escaped on opening the peritoneum. The appendix was healthy. In 30 hours the patient died, and within that space of time lymph had been poured out in such quantity that, at the necropsy, many pints were collected. The cæcum and ascending colon showed extensive follicular ulceration. The walls were œdematous and the lymphatic glands swollen and congested. In that case the operation took place within a few hours of the spread of infection to the peritoneum, and they were able to time the rate at which effusion of lymph took place. In several of the cases it was noted that early in the disease it was possible to detect the presence of fluid in the peritoneal cavity, and the presence of a massive effusion might be taken as characteristic of that form of peritonitis. In that case, too, the high temperature, 104° F., at the onset of peritonitis was to be noted. In one of the four cases with ulceration of the bowel the gut had actually perforated, and Dr. French, who did the post-mortem examination, was of opinion that that had occurred during life. Dr. Cameron could find no other record of such an accident. From a consideration of those points—the age and sex, the onset with rigors or herpes labialis, the evidence of preceding colitis, the simultaneous pleurisy, pericarditis, or pneumonia, the great and rapid exudation of fluid into the peritoneal cavity, the high temperature at the onset—it was often possible to make a diagnosis with some certainty. There remained the question to which he specially wished to draw attention—the advisability of submitting those cases to laparotomy at the onset of the symptoms. The peritonitis was always the result of pneumococcal septicæmia. The septicæmic process, if it did not end in death, would appear to run a course usually of some two or three weeks. When recovery did take place, one or more residual collections of pus were found; just as an empyema might complicate the convalescence of pneumococcal septicæmia with the more usual localisation in the lung. He had notes of four cases admitted to Guy's Hospital with such residual abscesses after recovery from the acute illness. One was in a woman, aged 27, who made a complete recovery on evacuation of the pus. Another was a boy, aged 10, who was admitted a month after the acute illness and who was discharged to a convalescent home with a diagnosis of tuberculous peritonitis. A year later he was readmitted in an emaciated condition with an abscess which had burst at the umbilicus, the pus from which was found to contain only pneumococci. Under vaccine treatment he made a good recovery. All four cases recovered without any complication. Such cases must suggest the possibility that recovery might take place without any operation at all. No proof could be given, but he offered the following as such a case of recovery without operation. He saw the child many times when it was under Dr. French's care. It was that of a girl, aged 15, who was admitted with vomiting and abdominal pain of two days' duration. The abdomen was swollen, rigid, and tender. In both flanks there was dulness, which shifted on rolling the child over. There was herpes labialis. The temperature was high, between 102° and 104° F., and the pulse was rapid. There was a leucocytosis of 15,600. The abdominal pain and vomiting ceased after four days, and the child made a good recovery. Dr. French diagnosed pneumococcal peritonitis. Cultivation from the herpetic vesicles gave a growth of staphylococcus albus. Such recovery, either with or without residual abscess, must be regarded as a rare and fortunate chance. If immediate laparotomy could claim to save even a small percentage of cases, there could be little doubt that it should always be advised. Dr. Cameron found that eight cases admitted in the acute stage were not operated upon before death. In seven of those pleurisy, pneumonia, pericarditis or endocarditis was present, as well as peritonitis. The eighth case died as soon as admitted. Twelve cases were submitted to immediate laparotomy. Nine of those died: four on the day following operation, the remainder

within a few days. Three cases recovered, but in all three the laparotomy performed at the onset of symptoms failed to produce immediate improvement. The patients passed through a long and critical illness, developed on convalescence the signs of abdominal abscess, and recovered after the evacuation of the pus. No case recovered without the formation of residual abscesses and without a second operation being required. It would appear that those cases of pneumococcal peritonitis which recovered were those which passed successfully through the pneumococcal septicæmia. After the termination of the acute septicæmia only a minority of cases died as a result of the failure to secure drainage of the residual collections of pus. That was, however, the cause of death in the case of a little girl, aged 11, who was admitted on Oct. 10th, 1911, with pneumococcal peritonitis, so ill that operation was delayed. She was almost comatose, with incontinence of urine and fæces. She improved greatly for three weeks, when a left subdiaphragmatic abscess was opened. Three further operations had to be performed to drain abscesses. After the last of those, unfortunately, a fæcal fistula formed, and the child gradually sank and died on Dec. 20th. For many weeks it seemed likely that she would recover. That she would have died at once if operated on on the day of admission was, he thought, certain. That was the only case he could find in which the policy of waiting was purposely adopted, but he thought that it was likely that in certain cases it was the right course to pursue. He could find no evidence that establishing drainage by laparotomy, at the onset of the disease, increased the chance of recovery from the septicæmia, or helped to cut short the process in the peritoneal cavity. On the other hand, he thought that there were cases so ill at the onset of the disease that laparotomy might turn the scale against recovery, and he suggested that in those cases it might be wiser to wait until the septicæmia was at an end, and until the disease had become local to the peritoneum, just as was done in dealing with the empyema which followed upon pneumonia. At the same time, he was fully conscious of the complexity of the problem and of the small help which statistics such as his could give in deciding the wisest course of action in any individual case.

SOCIETY OF MEDICAL OFFICERS OF HEALTH.

The Epidemic Grant and School Attendance.

A MEETING of this society was held on Jan. 12th, Professor A. BOSTOCK HILL, the President, occupying the chair.

Dr. WILLIAM BUTLER, in a paper on the Epidemic Grant and School Attendance, said that the withdrawal in 1903 of Article 101* of the Code of the Board of Education at once created difficulties for medical officers of health. The immediate consequence was that the education authorities were deprived of the special grant (which the Board was empowered to make in compensation for loss of actual grant) which would otherwise have been earned if the average attendance had been seriously diminished by what in effect was the advice of the medical officer of health in his attempts to control disease. The conflicting interests thus created had not yet been resolved, in spite of the efforts of the education authorities, who had suffered in purse, and the health officers, who had suffered in popularity. While the epidemic grant articles of the Code were in operation there was no organisation to meet the requirements of medical and health interests which those articles safeguarded. The medical officer of health was not an officer of the education authority, and with few exceptions no arrangement was in force whereby he could keep himself in touch with non-notifiable disease. His only information of the prevalence of, say, measles or whooping-cough was when he officially received the death returns. The epidemic grant was in effect an arrangement enabling the schools to earn their annual grant without diminution from loss of attendance due to the prevalence of infectious disease. Such a result was entirely unjustifiable. Designed as a measure for safeguarding preventive action, Article 101* worked in practice as an instrument of fatalistic non-interference. Not the steps to prevent the spread of disease but its actual prevalence was rewarded under the wrong-headed administration which made an epidemic of measles the ground for earning a grant. After referring to the withdrawal of the epidemic grant in 1903, Dr. Butler suggested that there should be instituted a health grant which should comprehend not merely the claims arising out of the procedure for dealing with epidemics but of all other considerations bearing upon the health of the children attending public elementary schools. A proportion of such a grant sufficient at least to cover the maximum loss due to interference with school attendance arising out of health considerations should be apportioned for this purpose, and should be paid only where the arrangements made for dealing with communicable diseases met with the approval of the Board of Education.

Mr. J. TUBB-THOMAS related his experience of the old epidemic grant and spoke of the many difficulties associated with it.

Dr. SIDNEY DAVIES deprecated the action of school attendance officers and of teachers in urging children to attend school when not in a fit state of health. He considered there was not the need for attendance officers which prevailed in former years.

Dr. W. J. HOWARTH considered that the ordinary grant should be based on general grounds and should not depend on individual attendances.

Dr. A. H. BYGOTT deprecated the giving of prizes for regular attendances. As a result many children went to school when they should remain at home. He spoke approvingly of the appointment of women attendance officers.

Dr. J. M. CLEMENTS and Dr. W. A. BOND regretted the withdrawal of the epidemic grant.

Dr. R. DUDFIELD had found the grant extremely useful, though it suffered from the fault that it paid for sickness rather than for health. He thought it a pity the medical officers of health in London were not more in touch with school work.

Dr. H. FRANKLIN PARSONS pointed out that when the epidemic grant was withdrawn it was thought the money saved could be more usefully spent in other directions. He remarked that with the advent of systematic medical inspection there was not the same difficulty as formerly in ascertaining whether a child was really ill or not.

Dr. P. CALDWELL SMITH considered that the grant in its day did good, but thought there would be little need for any grant at all if children were not admitted to school under six years of age.

Dr. JAMES KERR said that the epidemic grant was intended to be an insurance against infectious disease, and as such it acted very well. It had the effect of preventing children being improperly crowded into the schools by teachers and attendance officers.

Mr. E. H T. NASH felt sure there was no likelihood of the epidemic grant being introduced, and hoped that Dr. Butler's proposal would be pressed forward.

Dr. GERARD C. TAYLOR was of opinion that already there was ample power to exclude children from school attendance for such periods as the medical officer of health thought fit.

The PRESIDENT pointed out that the introduction of medical inspection had complicated the position. He spoke with approval of the institution of a general health grant for large towns, but feared it would not be applicable to rural areas.

LIVERPOOL MEDICAL INSTITUTION.

Rational Treatment of Chronic Suppurative Otitis Media.—Diagnosis and Treatment of Gastro duodenal Ulceration.

A MEETING of this society was held on Jan. 11th, Dr. T. R. BRADSHAW, the President, being in the chair.

Mr. C. A. ADAIR DIGHTON read a note on the Rational Treatment of Chronic Suppurative Otitis Media. This he considered to be the immediate treatment by means of Heath's conservative mastoid procedure in every case uncomplicated by labyrinthine suppuration when first seen. Mr. Dighton reviewed the tremendous advantages of this operation in regard to the restoration of hearing, and contrasted it with other recognised methods of treatment. All of these he considered unsatisfactory, and further was of opinion that the radical operation was unjustifiable except in cases

of labyrinthine suppuration. He considered that by Heath's method the hearing was restored in 75 per cent. of cases, and reported instances in support of this. In one case the patient from inability to hear a watch on contact had improved after the operation so much that he could hear it at 17 inches, which was the normal for that watch.—Mr. THOMAS GUTHRIE said that the so-called Heath's operation was in principle identical with that introduced by Kuster in 1879 and abandoned both by himself and other otologists as a routine operation for chronic disease. Its proved inadequacy for a majority of chronic cases in which the tympanic structures were seriously diseased led to the evolution of the radical operation. For suitable cases, however, the operation was a good one, but these cases were a small minority. Mr. Dighton advised resort to the partial mastoid operation in all cases of chronic suppurative disease, yet it was a matter of common knowledge that in large numbers of these cases healing took place after such measures as removal of adenoids and various forms of intrameatal treatment.—Mr. E. MALCOLM STOCKDALE regretted that Mr. Dighton had dealt with the subject from such a narrow point of view, and emphasised the importance of distinguishing sharply between acute and chronic cases. He agreed with Mr. Guthrie as to the importance of removing adenoids if present. Concerning mastoid disease, the anatomical structure of the mastoid portion of the temporal bone was of the greatest importance. When the antrum communicated freely with air or marrow cells mastoiditis ensued early, and required a post-aural operation. In these cases Mr. Stockdale performed the conservative mastoid operation. When the mastoid antrum had a firm, bony wall, and was small, a post-aural operation was only likely to become necessary in neglected cases, and here the radical or complete post-aural operation was called for. Speaking from a long experience of this operation in this class of case, Mr. Stockdale had usually found the tympanum damaged beyond the hope of useful repair, the malleus, incus, or both, being frequently missing, the incus usually being shed before the malleus. The Eustachian tube should receive attention. In the few exceptional cases of chronic suppurative middle-ear disease where spontaneous arrest of the discharge took place, the ear was commonly rendered very deaf. He could not accept the statement that the operation damaged the hearing in these cases, as by careful observation he had usually found that it resulted in a considerable improvement.—Mr. HUGH E. JONES congratulated Mr. Dighton on his results, but remarked on several fallacies which occurred in his note—e.g., the assumption that the antrum was always diseased in suppurative otitis media; the antrum might be the reservoir for pus or its lining membrane might be inflamed in the early cases, but in the genuinely chronic cases the real bone disease was generally in the tympanum. The statement that the radical mastoid operation destroyed the hearing was not in accord with facts; the resulting state of the hearing whatever operation was performed depended upon the condition of the essential organs before operation. He had done from one to two hundred modified operations in selected cases, but he found that in many of them further and more radical operations had to be performed afterwards.—In reply, Mr. DIGHTON pointed out that Heath's operation was not the same as Kuster's.

Mr. KEITH W. MONSARRAT read a paper on the Diagnosis and Treatment of Gastro-duodenal Ulceration, with an analysis of 50 consecutive cases of simple affections of the stomach submitted to operation. The series included 18 cases of gastric ulcer not at the pylorus, 11 cases of duodenal ulcer, 15 cases of pyloric and duodenal stenosis, and 4 cases of gastric dilatation without stenosis. He tabulated the nature and result of the operation and discussed the differential diagnosis.—Mr. F T. PAUL was not in favour of excising ulcers of the stomach and did not consider the results of gastro-enterostomy very satisfactory for ulcers far removed from the pyloric region apart from hour-glass contractures. On the other hand, pyloric and duodenal ulcers and stenosis were most satisfactorily treated by gastro-enterostomy. He had very slight experience of any ulterior undesirable conditions except such as were directly due to inexcusable faults on the part of the patient Mr. Paul laid stress upon the desirability of closing the pylorus by a silk purse string suture in cases of duodenal ulcer, and it was of especial importance to do this in cases of perforation. He recommended gastro-enterostomy to be done whenever possible in such cases.—Mr. G. P. NEWBOLT considered that the diagnosis between gall-stones and gastro-duodenal ulcer was often most difficult. He had met with a combination of the two diseases. He quoted a case of posterior gastro-enterostomy which was performed for duodenal stenosis and in which the patient died 18 months later from hæmorrhage due to ulceration around the gastro-enterostomy. He believed that a good number of people died directly from hæmorrhage from gastric and duodenal ulcers, although they were led to believe that this was rarely the case. He performed the posterior "no loop" operation, but was not in favour of performing this operation when closing a perforated duodenal ulcer, preferring to do it later if required.—Mr. ARTHUR J. EVANS emphasised the frequency and danger of duodenal ulcers. He had been called upon to operate no less than seven times within the last 12 months for the condition. He questioned the desirability of doing gastro-enterostomy at the time in addition to closure of the perforation and invagination of the ulcer. He had had five recoveries out of the seven in which simple closure had been done. There were both severe shock and peritonitis in these cases, and the addition of gastro-enterostomy under these circumstances would, he thought, add a great risk.—Dr. P. F. TINNE called attention to the great similarity between cases of Henoch's purpura and gastric ulcer with sudden symptoms of perforation. In both there were hæmatemesis, sudden violent abdominal pain, and to all appearances the classical symptoms of perforation. It was not till the following day that the purpuric spots about the joints made their appearance and settled the diagnosis.

EDINBURGH OBSTETRICAL SOCIETY.

Pyosalpinx.

A MEETING of this society was held on Jan. 10th, Dr. J. HAIG FERGUSON, the President, being in the chair.

The PRESIDENT read notes on a case of Pyosalpinx successfully removed by abdominal section during the puerperium. The patient was pregnant with her second child when she experienced pain in the left side during her fifth month of pregnancy. It increased in degree and became almost constant until labour set in. On the sixth day after labour there was severe pain in the left iliac fossa, though her temperature had been raised for three days. On vaginal examination the only abnormality to be detected was a soft, round, exquisitely tender swelling, about the size a small plum, in the left lateral fornix, moveable apart from the uterus. For some days the temperature continued raised and the swelling was observed to have become more diffuse with thickening and fixation of the surrounding parts. After waiting for the subsidence of the more acute symptoms, on the seventeenth day of the puerperium the President operated and found a left pyosalpinx with considerable adhesions in the neighbourhood. Owing to the escape of pus and the presence of a considerable oozing area, drainage by the vagina was decided on. The patient made a satisfactory recovery. The purulent contents of the tube were found to yield a mixture of streptococcus pyogenes and staphylococcus pyogenes aureus. Chronic inflammation was observed in sections of the tube. There was no history of gonorrhœa at any time. It was a point of interest that though the patient had suffered pain from the fifth month of pregnancy and the tube showed signs of chronic inflammation yet she showed no acute and severe symptoms until the fifth day after labour, and the probable explanation was given by the late Dr. R. Milne Murray when he ascribed it to some subtle change in the vital processes or tissue metabolism which follows the passage from the state of pregnancy to the state of the puerperium. In distinguishing a tubal condition from a cellulitis a guide was the height of the swelling in the broad ligament as determined by bimanual examination. The higher it was the more likely was it to be tubal or mainly tubal, though subsequent extension of inflammation might obscure this If the swelling began in the base of the broad ligament and extended upwards and outwards, it was a cellulitis, probably the result of an infection from a cervical tear. The bruising during labour or twisting of a small ovarian cyst might be mistaken for a tubal condition. A blood examination did not give much assistance unless the leucocytosis rose very rapidly.

Dr. A. H F BARBOUR stated that only by abdomina section could one arrive at a certain diagnosis. If the

condition in this patient had continued from mid-term, how did symptoms develop in the puerperium? It was evident that a tubal condition must have begun before pregnancy. The other probability was a septic infection during the puerperium. As regards differential diagnosis he had seen many cases of cellulitis begin high up in the broad ligament and extend along the round ligament and also downwards. The bacteriological report pointed to a recent suppuration in the tube; if it had been an earlier infection he would have expected the pus to be sterile.

Dr. J. LAMOND LACKIE referred to a case which he had seen with Dr. Milne Murray, where the chief feature was the absence of physical signs, nothing being felt through the abdominal wall or in the fornices. As the patient was very ill the abdomen was opened, and an inflamed tube was found from which a very small amount of pus was squeezed out at the abdominal end, which was not closed. The patient's urgent symptoms were immediately relieved.

Dr. F. W. N. HAULTAIN said there should not be much hesitation in opening the abdomen during the puerperium. Some were apt to consider it dangerous. He had opened the abdomen several times during the puerperium, and all the patients had done well. The main feature in pyosalpinx in the puerperium was its mobility and high situation; if there was cellulitis in the broad ligament the mobility was not so great. He would not be inclined to wait so long as the President before operating.

Dr. JAMES RITCHIE raised the question whether in a case of tubal disease recognised during pregnancy it would not be better to operate during the pregnancy as the condition might become worse owing to injury during labour, and after labour there was much more risk of infection.

Dr. B. P. WATSON instanced a case of double pyosalpinx beginning after delivery. The patient was quite well until the tenth day, when her temperature was raised and pulse quickened. Her symptoms were fairly acute for a week, and two cystic swellings, tender and movable, were found in the lateral fornices. The infant developed ophthalmia, and gonococci were found in the discharge from the eyes. It was thought better not to operate in the acute stage. On waiting the patient improved so much that in one month she was perfectly well, all signs of swelling in the tubes having quite disappeared. She had been delivered of another child since then.

Dr. JAMES YOUNG reported a case of pyosalpinx developing one month after a two months' abortion. The patient was operated on four weeks after it began, and the pus in the tube was then found to be sterile.

Dr. N. T. BREWIS said the question was when to interfere. He had found cellulitis an exceedingly rare affection in the puerperium; the swellings were more frequently tubal. There would be no hesitation if one could be sure the condition was sterile. Some required interference, but the majority got well if they were left alone. The proper route for operation was in early cases by opening the abdomen, as the adhesions were not dense and were easily separated, and there was not much chance of infection from the escaping pus. In older cases the vaginal route should be chosen if the tube was fairly adherent, as the adhesions could be more easily separated and the operation more safely accomplished from below. The pus in cases of pyosalpinx became sterile after a time, but there could be a reinfection.

The PRESIDENT, in reply, stated that a swelling in the fornix high and movable was probably tubal. As to the question of operation during pregnancy, the difficulty was the diagnosis, and it was known that operations during pregnancy after the fourth month were apt to be followed by premature labour.

Dr. D. BERRY HART read a paper on Numan, the veterinarian and comparative anatomist of Utrecht, a forgotten observer on the freemartin. Numan's atlas and text were shown and the circumstances of the rediscovery of their existence explained.

WEST LONDON MEDICO-CHIRURGICAL SOCIETY.—A clinical meeting of this society was held on Jan. 5th, Mr. W. McAdam Eccles, the President, being in the chair.—The following cases were shown:—The President: 1. Gummatous Infiltration of the Thigh in a man with no specific history. The patient first noticed a small, hard lump in Scarpa's triangle on the right side; this gradually increased, apparently invading the sartorius sheath, and tracking down to the insertion of the muscle. X rays threw no shadow. On the shin of the right leg were two typical specific patches, and Wassermann's reaction had been positive twice. He was improving under mercury and iodide. 2. Transposition of Viscera in a man. This was a case of complete transposition, including the attachment of the mesentery. The patient had come for treatment for vomiting and hæmatemesis and had a posterior gastro-jejunostomy performed; during the operation it was possible to demonstrate the completeness of the transposition. It was interesting to note that the man was right-handed.—Mr. W. E. Fry: A patient with Two Big Toes on one Foot, with skiagrams.—Dr. T. Grainger Stewart: 1. A case of Myotonia Atrophica in a male aged 39. The wasting involved the sterno-mastoids, biceps and triceps, forearm muscles, and slightly the small hand muscles; also the thigh muscles and muscles below the knee. The patient was unable to close his eyes tightly or to smile. 2 A case of Tremor of the Right Hand on sustained voluntary movement in a male aged 12 A history of headache and vomiting and presence of optic neuritis made clear the presence of intracranial pressure. Corroborative tests had not yet proved the lesion to be tubercular, the seat of the lesion probably being in the hypothalamic region on the left side. 3. A case of Bilateral Involuntary Movements in a male aged 9½. This case was a seven months child; he made no attempt to use his hands until the age of 3, and was unable to walk until the age of 7. He taught himself to write and to feed himself with his toes before he learnt to walk. Involuntary movements were first noticed at the age of 4; these had gradually increased; no fits. There were present athetoid movements of both arms and of facial muscles, much increased by any voluntary innervation—e.g., talking or attempting to move the arms; no spasticity; voluntary movement was almost absent in the arms. Sensation was unimpaired.—Dr. F. G. Crookshank (for Dr. J. M. Bernstein): A case of Cretinism with a goitrous mother. The interesting point in this case was that the child was born in Ealing, the mother in Bethesda in Wales, where endemic goitre was said to occur, and she had an enlarged thyroid. In the Swiss valleys the endemic cretins were born of goitrous parents.—Dr. Arthur Saunders: A case of Subcutaneous Rheumatic Nodules in a child aged 4. This case was shown at a previous meeting of the society, and was again brought up to show the changes in the nodules. Some had completely disappeared, whereas some had increased in size. Photographs taken when the child was shown some three months back and some taken recently showed well the changes mentioned.—Dr. Phineas S. Abraham (for Dr. H. J. Davis): A case of Sessile Papillomata of the Palate, and a case of Lupus of the Larynx.—Mr. Aslett Baldwin: A case of Fracture Dislocation of the Left Elbow treated by operation, and a case of Ruptured Left Tympanic Membrane and Facial Paralysis.—Mr. R. B. Etherington-Smith: A case of Gumma in the Left Biceps Muscle with Paralysis of Muscles of Left Shoulder Girdle.

UNITED SERVICES MEDICAL SOCIETY.—A meeting of this society was held at the Royal Army Medical College on Jan. 10th, Major E. B. Waggett, R.A.M.C. (T.), the President, being in the chair.—Lieutenant-Colonel C. H. Burtchaell, R.A.M.C., delivered a lecture illustrated by magic lantern slides on "The Medical Service with Lord Methuen's Force in the Advance on Kimberley in 1899, with Reference to the Modern Organisation of the Medical Service." Colonel Burtchaell first compared the organisation of field ambulances with that of the bearer companies and field hospitals they had replaced. He showed that the only essential differences were that the former were now divisional units, that the bearer and hospital *personnel* now formed part of one unit which was divisible into three parts, and that while there was an increased number of stretchers and stretcher-bearers under the new arrangement the *personnel* available for dressing stations and so-called hospital purposes was practically the same as formerly in relation to the strength of troops, one tent subdivision of a field ambulance being almost identical with half of a field hospital. He then described in detail the work of the medical services at the four battles which occurred during the advance on Kimberley. Among many interesting points which came out the following were specially noteworthy. The principal medical officer was present at the staff reconnaisance before the battle of Belmont, and, thus made acquainted with the plan of action and the ground, he was able to select places for the dressing

stations, &c., and to forecast the arrangements for succour of the wounded much more effectively than if he had had to rely on second-hand information. At the Modder River the medical units were following close behind the troops when the enemy unexpectedly opened a heavy fire. This determined the position of the dressing stations which were located just out of range of the ememy's guns or in the nearest dead ground available. Ambulance wagons were unable to reach the regimental aid-posts where wounded were collected until after nightfall, when the enemy withdrew. At the battle of Magersfontein the field hospitals accompanying the troops were held in reserve during the first stage of the engagement, and did not open until late in the day, when they moved up to the sites of the dressing stations formed by the bearer companies. One field hospital—i.e., the equivalent of two tent sub-divisions of a field ambulance—remained at Modder River, four miles distant, and there received and entrained over 600 wounded for Orange River and Cape Town. At Orange River difficulties arose because there was no organisation like their present clearing hospital available at that place.—Surgeon-General Sir James Porter, K.C.B., R.N. (who was with the Naval Brigade under Lord Methuen's command), discussed various points mentioned in the lecture and spoke in high terms of the work which the Army Medical Service did during the operations which had been described.

BRIGHTON AND SUSSEX MEDICO-CHIRURGICAL SOCIETY.—A meeting of this society was held on Jan. 4th, Mr. T. H. Ionides being in the chair.—Mr. H. H. Taylor showed a man aged 35, who had complained of failing sight which he had noticed for a few weeks. On examination, vision in the right eye was 6/36, and in the left eye 6/6. The right disc was distinctly white, with clean-cut edges, and normal vessels. The left was pale, but not atrophied. Later a perimetric examination was made, and it was found that in the right eye there was a very restricted area of vision in the temporal field, and no central vision at all. In the left field there was temporal hemiopia. The pupils were so contracted that it was not possible to get Wernicke's sign. There was no tremor or ataxia, and the knee-jerks were normal. There was no sign of acromegaly, and an X ray photograph showed no enlargement of the sella turcica.—Dr. D. G. Hall read notes and showed photographs of a case of Henoch's Purpura in a boy aged 15. The illness began with pyrexia and general pains. The eruption appeared next day on the limbs and gastro-intestinal symptoms a day later. These consisted of hæmorrhage from the bowel, vomiting, and severe abdominal pains. A week later both eyes were occluded by a serous effusion which cleared off in a few days. Three weeks from the initial symptoms he developed a mitral systolic bruit and marked irregularity of pulse. At the same time blood and casts appeared in the urine. At the height of the attack he passed about a dozen stools with some blood in them each day, and from time to time there were various joints affected. Treatment was mainly dietetic and symptomatic, and after some months the boy left Brighton, having made an incomplete recovery.—Dr. L. A. Parry read notes of some cases of Urinary Calculi. He advocated the suprapubic operation in boys unless the operator had had very considerable experience of lithotrity. In women dilatation of the urethra and extraction of the stone was the ideal procedure, and was available for stones up to about 1½ inches in diameter. He referred to a case of a stone in the female bladder, which had formed round a hairpin used for the purpose of procuring abortion. The sharp ends of the pin, which were not covered by the stone, were seized with Spencer Wells forceps and the stone easily withdrawn. A case of stone in the urethra, which gave a negative result with an X ray photograph, but was detected by means of the cystoscope, and subsequently removed, was also recorded.

GLASGOW OBSTETRICAL AND GYNÆCOLOGICAL SOCIETY.—A meeting of this society was held on Dec. 13th, 1911, Dr. A. W. Russell, the President, being in the chair.—Dr. William Ritchie read notes of a case of Stone in the Bladder, with early recurrence. The recurrence took place ten months after cystotomy had been performed. He thought this was due to the site of the calculus not having been sufficiently curetted after removal of the stone. After the first operation the repair of the fistula was not satisfactory; this he attributed to the fact that the fistula had been immediately closed, and that the accompanying cystitis had not been cured by prolonged drainage, as was done at the second operation.—Dr. Nigel Stark read a paper on Uterine Fibrosis and Allied Conditions, with Special Reference to Treatment. He pointed out the want of a standardised and universal nomenclature in gynæcology and the confusion that resulted. Many text-books made no mention of the term "fibrosis," but attributed all the symptoms now ascribed to it to chronic endometritis. By fibrosis was meant increase of fibrous tissue or replacement of muscular by fibrous tissue. It was always accompanied by increase in the size of the uterus. The enlargement might be slight, and on dilating the cervix hardly any mucosa came away on the curette. The clinical features were hæmorrhage, leucorrhœa, dysmenorrhœa, and pain. As regards treatment, removal of the ovaries was recommended by some, but hæmorrhage was not always arrested after this had been done. Hysterectomy had therefore come to be the operation of selection. He considered this too drastic, and advocated the excision of a wedge-shaped portion of the body of the uterus. This operation, "uteroplasty," he had performed on eight occasions.—Dr. G. Balfour Marshall preferred hysterectomy as hæmorrhage had recurred after uteroplasty.—Dr. A. C. McIlroy condemned the removal of the ovaries.—The President said he treated this condition by vaginal hysterectomy.—Dr. A. MacLennan showed a special Instrument for Closing the Utero-vesical Pouch in Ventro-fixation.—Fresh specimens were shown by Dr. McIlroy, Dr. D. Shannon, Dr. Balfour Marshall, the President, and Dr. Nigel Stark.

Reviews and Notices of Books.

Man and Beast in Eastern Ethiopia. By J. BLAND-SUTTON, F.R.C.S. Eng. London: Macmillan and Co., Limited. 1911. Pp. 419. Price 12*s.* net.

THOSE of our readers whose minds can carry them back some 45 years will remember the interest and excitement with which the publication of Sir Samuel Baker's "Albert N'Yanza" was received, and the difficulties and hardships of his journey. Nowadays, however, Uganda and the Uganda Protectorate are so within the bounds of civilisation that they are available for what may be called holiday tours, and Mr. Bland-Sutton's book deals in part with such a tour. Roughly speaking, his travels extended over a district ranging between 5° north and 2° south of the equator, and from Mombasa as far as 30° east, although large portions of this area were naturally left untouched. Starting from Mombasa, he, in company with Dr. Comyns Berkeley, journeyed by the Uganda Railway to Port Florence on the north-western shore of the Victoria Nyanza. Thence they travelled about on the northern shore of the lake and returned by caravan through the Rift Valley, a portion of which is traversed by the railway. Mr. Bland-Sutton gives a vivid, if somewhat impressionistic, description of the various tribes with whom he came into contact, and of the fauna and flora, together with some remarks upon the geological features of the country. Written by one who, though a trained observer, with a wide range of scientific knowledge has done no special work in natural history, the book is of very great interest to non-technical readers, and this interest is enhanced by the admirable illustrations. Some of the observations upon the curious fashions in ear ornaments among the Kikiyu and neighbouring tribes have already appeared in our columns.

The portion of the book which appeals with most novelty is the description of the great Rift Valley, a mighty depression which Mr. Bland-Sutton considers is to be comparable only with the great cañon of the Colorado River in Arizona. The Rift Valley, however, unlike its American congener, exhibits various evidences of volcanic activity in the shape of hot springs, steam holes, and the like

and the valley abounds in bird and animal life. Other chapters are devoted to an account of the various tribes, their dress, manners, and customs, and in addition the fauna and flora are described under the headings of lions, crocodiles, thorns, horns, antelopes, gazelles, beaks, crests, tails, wings, jiggers, ticks, mosquitoes, and flies and sleeping sickness. There is also a chapter upon ivory, which Mr. Bland-Sutton considers, and we think rightly, as "one of the greatest curses of Africa."

Although Mr. Bland-Sutton writes in no way as an explorer, there is a good deal of matter in his lively account of his travels which will be new even to those who have read many reports and books published by other writers and explorers; and those of our readers who will feel stimulated by Mr. Bland-Sutton's account to inquire further into the features of the country will owe him a debt of gratitude for the bibliography given at the end of each chapter, containing the names of works written by experts on the various subjects with which the chapters deal.

Dental Disease in its Relation to General Medicine. By J. F. COLYER, L.R.C.P. Lond., M.R.C.S. Eng., L.D.S. R.C.S. Eng. With the assistance of STANLEY COLYER, M.D. Lond., M.R.C.P. Lond., D.P.H. London: Longmans, Green, and Co. 1911. Pp. 189. Price 4*s.* 6*d.* net.

THIS interesting little book sets out in clear style the relationship that exists between dental and oral and general diseases. The information is badly needed. But scant study is given by the ordinary medical student during hospital work to the mouth and its contents, and afterwards he is inclined to consider their affections unworthy of his earnest consideration. He sedulously treats general systemic disease, but frequently fails to recognise the importance which attaches to oral hygiene. The authorities of the sanatoriums of this country cannot likewise be excluded from the same criticism. Patients are daily lying in the wards of our hospitals whose mouths are in the filthiest condition with obviously grave effects. This book draws earnest attention to the surgical requirements of the mouth and of the teeth, and being written by persons of acknowledged authority its publication should certainly do great good.

Of course, there is a danger lest things which have for years needed saying, when they come to be said, should be said too forcibly. In certain quarters during the last decade the oral cavity has been regarded as a veritable hot-bed of infection—a focus of disease eventually menacing the health and at times the life of its owner. We find this to be an extreme view, and therefore regret that two such experienced and close observers as the authors of this work—especially in the later of the pages before us and in those dealing with "Oral Sepsis and its Influence on the Body"—should appear to adopt it. The evidence adduced to prove that "oral sepsis" is the cause of neurasthenia, cardiac irregularity, "subacute combined degeneration of the spinal cord," infective endocarditis, and other things, is suggestive but not convincing, and perhaps the same might be said of its close association with pernicious anæmia. The authors have spared no pains to collect cases and to narrate the opinions of other writers, but they have not been able to draw convincing conclusions. The entire subject, which is of the utmost importance to the public as well as the medical man, cannot be dealt with within the compass of a small manual; and this has hampered the authors, who would no doubt have preferred to write at far greater length and with full justifying details. It is probably right to believe that gastritis and some of its sequelæ resulting from severe "oral sepsis" are due to the ingestion of pathogenic oral bacteria, but gastric ulceration, for example, cannot yet be definitely attributed to the same cause, and the same must be said of secondary pancreatitis and parotitis. Oral sepsis includes, say the authors, "all chronic inflammatory diseases about the mouth," and the reservation apparently made with regard to what is known as pyorrhœa alveolaris is clearly accidental, for the description given of the condition shows it also to be an oral sepsis. There is a good deal of ambiguity in connexion with the use of the freely-recurring term "periodontal disease," and it is difficult precisely to define its meaning.

It will be gathered that we think that the authors have claimed too much mischief as traceable to the neglected or diseased mouth, but none the less we can recommend their book warmly to the practitioner. It is becoming daily more evident that he should be particularly interested in dental (and oral) disease, whether engaged in the general practice of medicine or as a consultant following some special branch. The wholesale extraction of teeth as opposed to their proper preservation and the due observance of oral hygiene is a serious matter, and as the procedure is growing in popularity the profession ought to consider the logicality of the arguments upon which it is founded.

Diseases of the Nose, Throat, and Ear, Medical and Surgical. By WILLIAM LINCOLN BALLENGER, M.D., Professor of Otology, Rhinology, and Laryngology, College of Physicians and Surgeons, Department of Medicine, University of Illinois. Third edition, revised and enlarged. Illustrated with 506 engravings and 22 plates. London: Henry Kimpton; Glasgow: Alexander Stenhouse. 1911. Pp. 983. Price 28*s.* net.

Professor Ballenger's text-book on diseases of the throat, nose, and ear has reached its third edition, and within three years. The publisher's note states that "the phenomenal demand for three large editions of this work in much less than three years is explained by its combination of utility, completeness, and high authority." Many text-books, as distinct from monographs of original research, are like directories, inasmuch as they hold good only for the year in which they are published. The author in his preface informs us that the general purpose of the work is not changed. It was designed as a text-book for students, as a guide for practitioners, and as a book of reference for the specialist. The contents are no less comprehensive than the general purpose of the work. They include the medical as well as the surgical treatment of the diseases in the entire region of the nose, throat, and ear.

As the text-book has arrived at its third edition, it is necessary to mention only a few of the more important new features which have been introduced. Amongst these we notice a description of a plastic operation for the closure of a recent perforation of the septum of the nose. Briefly stated, in the words of the author, the operation is as follows: "When both mucoperichondria are torn during a submucous operation, thus making it probable that a permanent perforation will follow, the cartilage removed may be reintroduced between the membranes, and thus afford a bridge over which the granulating edges of the mucous membranes may extend and close the perforation." At the meeting of the British Medical Association held at Birmingham last year a paper was read in the Section of Laryngology, Otology, and Rhinology on the Submucous Resection of the Nasal Septum. In the discussion which followed upon the paper more than one speaker expressed the opinion that a perforation of the septum could not be looked upon as a tragedy or disaster.[1] In view of these opinions and also in view of the opinions at times expressed that the perforation of a septum obstructing the nostrils is a distinct advantage to the nose as an organ of respiration, it would seem that this operation for closing a perforation of the

[1] THE LANCET, August 19th, 1911, p. 514.

septum following upon the operation of the submucous resection of the structure is a work of supererogation. Certainly anxiety resulting from the perforation of the septum in the course of an operation to relieve distressing nasal obstruction should be considered unnecessary.

This edition of Professor Ballenger's work shows the prominence achieved by vaccine therapy in the treatment of infectious diseases of the accessory sinuses of the nose, ear, throat, and meninges. In previous editions mention of Vincent's angina has been absent but the subject is now included. The chapter dealing with foreign bodies in the larynx, the trachea, the bronchus, and the œsophagus has been revised by Dr. Chevalier Jackson, whose work and experience in this department of the specialty are well known. In the section dealing with diseases of the ear the functional tests of the vestibular apparatus have been revised by Dr. J. R. Fletcher, and the section on labyrinthine disease and its surgical treatment has been largely rewritten.

We have no hesitation in congratulating Professor Ballenger upon the success of his labours and in endorsing the remark made in his preface that his effort has been to reflect the high character of work being done by laryngologists and otologists all over the world.

Surgery of the Genito-urinary Organs. By J. W. S. GOULEY, M.D. London: Rebman, Limited. New York: Rebman Company. Pp. 531. Price 8*s.* net.

WHEN the medical student becomes qualified and enters on the practice of his profession he finds often that there are departments of surgery in which his knowledge does not come up to his requirements, and he has to supplement it in one way or another. It is perhaps in the diseases of the genito-urinary system that he feels the chief need for more information than is contained in the text-books employed for the purpose of passing his examinations, and for this purpose he cannot have a more convenient book than that before us. It is not too lengthy, and yet it contains all that the average practitioner is likely to want. In it are to be found many of those hints and points which are so valuable in the routine of practice, and yet are so rarely to be found within the covers of a manual. The author's style is easy and readable, and the numerous references to the history of the subject serve to enhance the interest of his work.

Lehrbuch der Chirurgie. Bearbeitet von Prof. KLAPP, Berlin; Prof. KÜTTNER, Breslau; Prof. LANGE, München; Prof. LANZ, Amsterdam; Prof. PAYR, Königsberg; Prof. PERTHES, Tübingen; Prof. POPPERT, Giessen; Prof. PREYSING, Cöln; Prof. DE QUERVAIN, Basel; Prof. J. RIEDINGER, Würzburg; Prof. RITTER, Posen; Prof. ROVSING, Kopenhagen; Prof. SAUERBRUCH, Zürich; Prof. SCHLOFFER, Innsbruck; Prof. TILMANN, Cöln; Prof. WILMS, Heidelberg; Prof. WULLSTEIN, Halle. Herausgegeben von Prof. WULLSTEIN und Prof. WILMS. Second revised edition. In three volumes. Vol. I., pp. 636. Vol. II., pp. 482. Vol. III., p. 602. Jena: Gustav Fischer. Price marks 28.50.

LESS than three years after the appearance of the first edition of this work a second edition has been required; this fact is in itself a proof of the value of the work and its appreciation by the medical public both of German-speaking countries and of other lands. Even in the short interval that has elapsed since the issue of the first edition many important changes have been made in surgery, and the editors have had the work revised so far at least as the short time allowed.

The trustworthiness of such a system of surgery is assured by the names of the contributors, and we may say that the quality of the product is fully equal to what might have been expected. The work is extensive, as may be gathered from the fact that it contains some 700,000 words, but even into so great a space as that it is difficult to compress the whole of surgery, so that here and there we cannot help wishing that a subject might have been treated more fully. We are not complaining of what is given, but we appreciate it so highly that we should like to have more. In a work of this character there must necessarily be numerous subjects on which differences of opinion exist, but a full discussion of these would require an immense amount of space, and, moreover, we must acknowledge that the authors have been very moderate in their articles, and that prominence is given to the various views that are held by different authorities. The illustrations are very good; for the most part they have been taken from photographs of cases, and the reproductions have been successful. The work is in every way a worthy product of German science.

Allen's Commercial Organic Analysis. Volume V. Fourth edition, entirely rewritten. Edited by W. A. DAVIS, B.Sc., A.C.G.I., and SAMUEL S. SADTLER, S.B. London: J. and A. Churchill. 1911. Pp. 704. Price 21*s.* net.

THIS volume deals with a very important group of commercial substances—viz., the tannins, leather, dyes and colouring matters, and inks. Mr. W. P. Dreaper contributes the interesting monograph on tannins, and his intimate acquaintance with the subject is evident from the references to the original work which he has contributed from time to time, chiefly in analytical directions. This section contains a valuable series of tables, and some idea of the multiplicity of tannins is furnished in the fact that no less than nine tables are devoted to recognition tests. The same author contributes the section on the analysis of leather, and it is interesting to note that he includes a water-penetration test and a water-absorption test. "Good sole leather," we are told, "takes about 170 to 250 hours" for water to penetrate it when the experimental piece of leather is tested under conditions described.

By far the larger portion of the volume is devoted to dyes and colouring matters, and if we include the special article on colouring matters in foods no less than 550 pages of the volume out of a total of 704 are occupied with these questions. Mr. Dreaper joins with Mr. E. Feilmann in the writing of the sections on "Dyes and Colouring Matters" and the "Analysis of Colouring Materials," while Dr. J. T. (not J. F., as is printed in two places in the title pages) Hewitt contributes the "Dyestuffs of Groups 6 to 12." These groups have been a special subject of study by Dr. Hewitt, and include the di- and tri-phenylmethane dyes, pyrone, xanthone, and fluoran dyes, indamines and indophenole dyes, azine dyes, oxazine and thiazine dyes, quinoline and acridine dyes, and the thiazole and sulphur dyes. In this section there are again some valuable tables setting out the commercial and scientific name of the dye, general characters, and reactions. The chapter on "Colouring Matters of Natural Origin" is one of the most interesting in the book, and is written by Professor W. M. Gardner, of Leeds, who is an admitted authority on the subject.

The section on the analysis of colouring materials is very carefully done, and analytical chemists will be grateful for the clear account of the methods of testing dye stuffs as well as for the somewhat extended presentation of the general reactions of dyed fibres. Over 80 pages in this section are given to tables of reactions. The chapter on "Colouring Matters in Foods" bears the evidence of American authorship, for one paragraph refers to the examination of "noodles," the meaning of which may not be clear to every English reader. It refers to a breakfast food

classed with spaghetti and macaroni. The section, however, is very complete and the information which it gives as to the colouring matters prohibited from use in foods by the United States authorities should receive careful attention n this country, where little legislative action is taken in regard to this matter. The volume concludes with a short section on "Inks," which affords interesting reading, besides some valuable hints to analysts and others.

We have represented here an immense amount of work, and great care has been taken to collect materials from trustworthy sources; the previous volumes are well succeeded by the present one.

The Diagnosis of Nervous Diseases. By PURVES STEWART, M.A., M.D. Edin., F.R.C.P. Lond., Physician to Outpatients at the Westminster Hospital, &c. Third edition, revised and enlarged. London: Edward Arnold. 1911. Pp. 477. Price 15*s.* net.

THE third edition of this well-known text-book on the diagnosis of nervous disease contains more illustrations and more material than the second edition, as it has been enlarged by about 30 pages. It has been brought thoroughly up to date by the incorporation of the latest information on such topics of present-day importance as pseudo-tumour, spinal anæsthesia, pituitary lesions, and so on. Since the appearance of the second edition three years ago the book has been translated into both French and German, a gratifying proof of the high opinion of its merits that has been formed by continental neurologists. It is not intended to take the place of larger and more ambitious text-books; its purpose is to present to the student and practitioner a compendium of neurological diagnosis, in which symptoms are described and followed out much as they would be in the actual examination of a case. It is written from an eminently practical standpoint; it is concise and readable, and the association of width of view with attention to minuteness of detail is noticeable in every chapter. In this connexion it may be consulted with advantage by the professing neurologist, since there are references to the very latest advances in diagnostic tests and methods. While the reader will not find himself burdened with unimportant and non-essential minutiæ of nervous anatomy and physiology, his perusal of the first two chapters of the book cannot fail to be instructive, for in them the author lays with adequate care just that general foundation of anatomical and physiological knowledge of the nervous system without which its pathology becomes meaningless.

We believe that this volume has been widely adopted as a text-book in different schools. There is none that can be more confidently recommended as fulfilling the requirements of student and practitioner alike, and we warmly welcome its reappearance because both of its attractive form and of its excellent and well-chosen matter.

Analyse des Harns, zum Gebrauch für Mediziner, Chemiker und Pharmazeuten, zugleich elfte Auflage von Neubauer-Huppert's Lehrbuch. Bearbeitet von A. ELLINGER, F. FALK, L. J. HENDERSON, F. N. SCHULZ, K. SPIRO, und W. WIECHOWSKI. Erste Hälfte. Wiesbaden: C. W. Kreidel; Glasgow: F. Bauermeister. Pp. 682. Price 15*s.*

THIS is practically a new book, but it is founded upon the well-known work of Neubauer and Huppert. It is the work of several writers, each of whom has devoted special attention to the branch of the subject which he has undertaken. Henderson, of Boston, has contributed the section on the physical and chemical properties of the urine, including its reaction to polarised light; Spiro, of Strasburg, has written the chapter on the inorganic constituents of urine; Schulz, of Jena, has supplied the chapter on the non-nitrogenous compounds; while Wiechowski and Ellinger are responsible for the account of the substances containing nitrogen. It will thus be seen that this, the first, part of the work deals only with normal constituents of urine, the consideration of the abnormal constituents being reserved for the second part to be subsequently published. This statement will be sufficient to show the very thorough manner in which the book has been written. The processes and tests to be employed in the examination of urine are fully described.

The references to the literature of the subject are numerous, and in most cases are given directly to the original paper in which the method was first described, so though most of them are to German articles and works, some are to English sources. For instance, the reference for the account of Moore's test for sugar in the urine is given to the article in THE LANCET of Sept. 26th, 1844. The work proves to be very complete, and the utmost care has evidently been taken to supply all the information that could be required by workers in this branch of science. When the second part is issued the whole will form the most complete treatise on urinology existing.

Veterinary Bacteriology: A Treatise on the Bacteria, Yeasts, Molds, and Protozoa Pathogenic for Domestic Animals. By ROBERT EARLE BUCHANAN, Ph.D., Professor of Bacteriology in the Iowa State College of Agriculture and Mechanic Arts, Division of Veterinary Medicine; Bacteriologist of the Iowa Agricultural Experiment Station. With 214 Illustrations. London and Philadelphia: W. B. Saunders Company. 1911. Pp. 506. Price 13*s.* net.

THE United States Government departments which correspond roughly to our Board of Agriculture spend large sums of money on researches bearing upon agriculture, and very valuable results have been obtained in their experimental stations. Whether as a result of this encouragement or not the American public appears to take an enlightened interest in the scientific side of agriculture, and a number of works dealing with bacteriology in its relation to the dairy and general agriculture have issued from the American press.

The present work treating of veterinary bacteriology by the bacteriologist to the Iowa agricultural station is a clear, business-like, well-arranged, and accurate presentation of its subject, but will appeal more especially to those whose ideal of education is teaching rather than learning. The volume is based on a course of lectures given to students of veterinary medicine in the Iowa State College, and it casts a curious sidelight on the general education that it should be considered necessary to give the singular forms of such words as septa, hyphæ, exanthemata, and so on.

The author states his aim to be "to put in usable form that fund of knowledge concerning bacteriology which the student of veterinary medicine should master." The matter is divided into six sections, of which the first two deal with general considerations of morphology, classification, cultivation and demonstration. As the author disclaims the intention of making his work a text-book of pathology or a manual of laboratory practice, this disarms criticism of the somewhat sketchy but possibly sufficient treatment of these sections. The third section, in which immunity and the constitution of the various antibodies are discussed, is a clear and praiseworthy exposition of the subject.

The fourth and longest section deals with the pathogenic micro-organisms, exclusive of the protozoa. It is natural to look here for a treatment somewhat different from that adopted in the ordinary medical text-book. It must be confessed, however, that the work would serve almost equally well for the medical as for the veterinary student. The organisms dealt with are for the most part those found in medical text-books, and in a few cases organisms special to man are included. This is in part no doubt due to the fact that it is on work done on human disease that many of the fundamental ideas on immunity, treatment, and diagnosis

are based. We miss, however, any insistence on matters important to the veterinary surgeon in dealing with food-poisoning epidemics, the relation of diphtheria and tubercle to milk, the connexion of human ringworm with similar diseases in animals, and other like matters. Water examination and purification are briefly treated, but there is no section on milk. The statement that T.R. has not come into use should be reconsidered.

The fifth section concerns the pathogenic protozoa, and is of great importance in view of the number and serious character of the animal diseases caused by protozoa, and the frequency with which the animal acts as a carrier for human parasites. The final section deals with diseases produced by ultramicroscopic organisms. A short bibliographical index is appended. The book is well illustrated with blocks, the majority of which are from the Atlas of Fraenkel and Pfeiffer. It is well printed and of good appearance.

Manual of Psychiatry. By J. ROGUES DE FURSAC, M.D. Translated and edited by A. J. ROSANOFF, M.D. New York: John Wiley and Sons. 1911. Pp. 484. Price $2 50.

THIS book is the third American edition translated from the third French edition. The new matter which has been introduced has enlarged the volume by about 80 pages. Much of the fresh material is from the pen of the editor, and includes sections upon the Mendelian hypothesis, psychotherapy, chemical tests for certain abnormal substances in the cerebro-spinal fluid, and a description of the Wassermann reaction. As a handy account of the findings of the psychiatry of to-day the book may be commended. The first part is devoted to general psychiatry, and contains an account of the various symptoms that may be met with, while the second part is composed of an account of the aggregations of symptoms forming the recognised syndromes. It has too often happened in the past that the somatic phenomena which are associated with mental disorder have been disregarded, but in the present work their significance is accentuated. Treatment is so often vitiated by ignoring the physical illness or debility which accompanies mental disorder that it becomes highly desirable that stress should be laid upon the bodily state. The author, while admitting the existence of dementia præcox as a clinical entity, criticises the name. He points out that the dementia present is often very slight in amount and selective in character, so that certain particular faculties may be affected while others are left intact. So far as the adjective "præcox" is concerned, it is certainly not the rule that the disease always runs a rapid course ending in dementia, or that it necessarily occurs at an early age, and there is but little doubt that the name given to the disease has hindered the acceptance of the conception it covers. The description of the Mendelian hypothesis, taken from another work of the editor, is adequate and good.

Handbuch der Vergleichenden Physiologie. Herausgegeben von HANS WINTERSTEIN. 16. Lieferung. Band IV.: *Physiologie der Reizaufnahme, Reizleitung, und Reizbeantwortung.* Erste Hälfte. Bogen 21–30. Jena: Gustav Fischer. 1911. Pp. 321–480. Price 5 marks.

THIS part winds up what Dr. Baglioni has to say about the physiology of the nervous system of insects.[1] Substantially it deals with the physiology of the nervous system of vertebrates, beginning with fishes and, of course, with amphioxus, and then passes on to cartilaginous and osseous fishes. To the average reader the account of the pigmentary or colour changes in soles and other flat fish, a study begun by Pouchet and recently brought into popular prominence by the work of Dr. Francis Ward, of Ipswich, will prove very attractive. The velocity of conduction in the nerves of fish, frog, and man is noted, but the chief interest centres round the effects produced by removal of the cerebral centres, on the one hand, and stimulation of these centres on the other, in different animals. Naturally the author draws largely on the well-known observations on fish of Steiner and of Bethe. The frog, as a typical amphibian, is next considered, and the work of Goltz on the effects of removal of certain parts of the brain is admirably summarised (pp. 352–413), and so is that of Steiner and Schrader on the same subject, as well as the later work of Verworn, the worthy successor of Pflüger in Bonn, on tonic reflexes.

The reptilia (pp. 413–423) are next dealt with, and the work of G. Fano on the results of removal of the brain in the tortoise is summarised. As to snakes, we must go back to the excellent work of Tiegel on the spinal cord, and to that of Luchsinger. The author carries us *gradatim* and historically to Biedermann's work on the chameleon—a subject initiated as well as illustrated by Brücke. Birds and the functions of the "brain centres" and related subjects occupy pp. 424–437, and just at the end Langley's work on the sympathetic system of birds and on the muscles which move the feathers is referred to (1904). This constitutes the fourth chapter.

The fifth chapter deals with mammals, but according to the author the subject is so well treated in the text-books—especially in regard to the nervous system of the dog and ape and localisation—that he confines himself to what is known as to the physiology of the nervous system of bats (pp. 438–440), and then in Part II. of the same chapter (pp. 441–450) he deals with the other mammals. The work of Sherrington should have found a larger place than it occupies.

The bibliography is long, but not complete. Some names are omitted that ought to have been included. The last few pages are occupied by the beginning of the article on Tropisms by Professor Jacques Loeb.

[1] See review of earlier section, THE LANCET, Sept. 16th, 1911, p. 830.

LIBRARY TABLE.

Tropical Hygiene for Anglo-Indians and Indians. By the Honourable Surgeon-General C. P. LUKIS, M.D. Lond., C.S.I., and Major R. J. BLACKHAM, R.A.M.C. Calcutta: Thacker, Spink, and Co. London: W. Thacker and Co. 1911. Price 4*s.* 6*d.* net.—This book has been compiled as a manual of instruction for the senior certificate in home hygiene of the St. John Ambulance Association in India, and is divided into ten chapters corresponding with the ten lectures that form the authorised syllabus of instruction. The first is entitled the Communicable Diseases of the Tropics, and deals shortly with cholera, dysentery, plague, enteric fever, and tuberculosis. In the second chapter malaria is treated somewhat fully, and mention is made of kala-azar and sand-fly fever. Then follow chapters on air, water, food, clothing, houses, and refuse disposal as regards the conditions of hot climates. A full description of tropical insects is given in relation to disease, with numerous illustrations, and finally disinfection is treated briefly but sufficiently. The book is written in a popular style, and the facts are made as easy of comprehension by readers untrained in medical science as the nature of the case admits. The authors advise that cholera stools should be burned or buried; it is not always easy to burn a cholera stool; boiling is the safest and easiest method of disposal if heat is available. Neither in the preventive precautions against cholera or dysentery is any mention made of protecting the abdominal viscera by wearing a flannel belt; this seems to us a real omission. On p. 10 the authors state that in enteric fever the urine and expectoration are equally dangerous with the stools in

spreading infection; this is certainly quite true for the urine, but can hardly be maintained in reference to the sputum. The information as to malaria causation and prevention are excellent; the authors have put it very tersely in the sentence: "In a general way it may be said that when malarial fever occurs in Europeans, the latter have acquired it from mosquitoes that have previously bitten an infected Indian, who is more often than not one of his [their] own servants or a child in the compound." The authors rightly say that the natives of India have not yet realised the importance of fresh air; but the number who die annually in India is not 37,000, as stated on p. 45, but 37 per 1000; the death-rate is now rather lower, and, of course, the slip is obvious. The statement that in a certain hospital, after the ventilation was improved, the deaths were "nine-tenths less than before," which means a reduction of mortality to one-tenth of that previously existing, is significant. Is not allowance of two pints of liquid daily, over and above moisture in food, in temperate climates (p. 47) very small, and would it be generally accepted? We are glad to note that stress is laid on the fact that no filters of the Pasteur-Chamberland or Berkefeld type can be useful in the tropics unless a rough clarifier is attached. More stress might perhaps have been laid on the dangers of milk in tropical countries. Milk pasteurisation might have been described, as it is extremely valuable for use in India. The account of insect parasites is excellent and fully illustrated. We have pointed out several small matters of detail which can readily be corrected. Of the manual as a whole we can speak most favourably. It contains a large amount of information, clearly expressed, and (with the trifling emendations suggested) will admirably serve the purpose for which it has been compiled.

The Canada Year Book, 1910. Second Series. Ottawa: C. H. Parmelee.—In this Year Book, which, though dealing with 1910, and having its preface dated July, 1911, has only just put in a belated appearance, there is a large amount of useful information with regard to Canada, consisting principally of statistics relating to population, agriculture, and manufactures. The population statistics are compiled from the census reports, and give figures for the two decennial periods 1871 to 1901 with regard to such matters as sex, conjugal state, birthplace, race, and religion. The mortality rates for the periods named are also given, as well as the school attendance figures and the status of education. The details with regard to imports and exports have been made more complete than those of previous editions of the book, and there is a brief account of the chief events of the year 1910.

MISCELLANEOUS VOLUMES.

MANY books of varied character, some of them having little connexion with matters medical, save the very remote one that all things which exercise on man even the slightest influence are to that extent the concern of medical science, lie on the editor's table.

The Climate of the Continent of Africa, by ALEXANDER KNOX, B.A. Cantab., F.R.G.S. (Cambridge University Press, 1911. Price 21*s.*), is really a scientific treatise of importance as is evidenced by the fact of the assistance given to the author by the Royal Geographical Society and several other British and foreign geographical, meteorological, and other societies, and by various Government officials and distinguished travellers. Though obviously a marvel of painstaking research, the subject is one that would hardly justify the elaborate pains and the space in our columns necessary to do justice to the book.——The translation of the *Oedipus* of Sophocles into English rhyming verse by Mr. GILBERT MURRAY, LL.D., D.Litt., Regius Professor of Greek in the University of Oxford (London: G. Allen and Sons. 1911. Price, net, paper, 1*s.*; cloth, 2*s.*), has a special interest just now, owing to the production of that great drama in London under the direction of Max Reinhardt, who has already scored a brilliant success with the play in Berlin. The *Oedipus* is pre-eminently a human play, and it is because of its sustained but gradual unfolding of the plot with increasing grip up to the final catastrophe that it will always take a foremost rank in tragedy. Professor Murray's translation is scholarly, especially in the fact that though fairly close to the original it is no mere rendering of words for words, but it carries the reader with it into the original atmosphere of the play.——The *Divine Comedy* has been translated many times into English with varying success. The latest attempt is particularly ambitious because the translator, Mr. C. E. Wheeler, has essayed to render Dante's immortal trilogy into rhymed verse, keeping the triple rhythm of the original. This new translation is published in three convenient little volumes, entitled respectively "Hell," "Purgatory," and "Paradise" (London: J. M. Dent and Sons. 1911. Price 2*s.* 6*d.* each, net). In spite of weaknesses (how should it be otherwise?) Mr. Wheeler's version deserves a place among the better English translations of the *Divine Comedy*, while its size and price place it within the reach of many ordinary readers to whom the standard editions are somewhat inaccessible. The translator acknowledges his debt to the Temple edition, from which he has taken the arguments and notes. It is almost impossible to preserve a uniform level of achievement in a translation which undertakes the double task of reproducing the original meaning, style, and rhythm, and yet of preserving the best features of rhymed English verse. This is not the place to pick out either good lines or bad lines—though we have found many of each—and we will only say that every lover of Dante who appreciates careful, reverent translation and dexterous versification should read Mr. Wheeler's rendering.——In *The King to His People* (London: Williams and Norgate. 1911. Price 5*s.* net) are collected the speeches and messages of His Majesty King George V. as Prince and Sovereign. Naturally they touch on a wide variety of subjects, with only a few of which is the medical profession even indirectly interested. Still, even so, there are subjects, such as the Opening of the National Physical Laboratory, the London Orphan Asylum, The Housing Problem, The Doctor, A Century of Medicine, Fighting the White Plague, Cancer Research, "Bart.'s," The Rule of Science, Homeless Children, Hospital Problems, Boy Scouts, and others, which manifest His Majesty's deeply sympathetic feeling towards the importance of medical affairs in their close relation with human welfare at large.——The high place of Darwin in modern science is, we imagine, too well established to be upset by Mr. Herbert Morse's philosophical and critical study of Darwin's theory of "Natural Selection," in his book, *Where Do We Come From? Is Darwin Correct?* (London: Kegan Paul, Trench, Trübner, and Co., Limited. 1911. Price 7*s.* 6*d.* net). Doubtless much has been discovered since Darwin's time which he would willingly have taken into consideration had the knowledge been then available, and in the light of which he would doubtless have made such modifications in his own views as seemed necessary. The whole history of his life shows that he was far too real a scientist to lay down his theories first and then endeavour to make facts square with them. He was first of all a patient observer, accumulating and classifying facts, then drawing his inferences and establishing his theories as they appeared to emerge from his ordered data. To say that all his conclusions were final would be to claim for him omniscience. Finality is not to be expected in science. Conclusions can hold only until new data appear, which, being unknown or even undreamed of when the conclusions were drawn, could not be taken into account. Science

recognises a process of repeated stocktaking and re-adjustment.

Turning to more strictly medical books, we find a thesis for the Doctorate in Medicine of the University of Venezuela, by P. F. ARREAZA CALATRAVA, on *La Peste en Caracas: Epidemias de 1908-1909-1910* (Caracas: Tipografia Americana. 1911), which discusses its subject with praiseworthy thoroughness from the points of view of the epidemiological data, the etiology and pathological anatomy, the protogenesis and pathogenesis, the clinical forms, the diagnosis and prognosis, the treatment, and concludes with a series of clinical observations and temperature charts. In regard to the treatment of bubonic plague, the author holds that extirpation of the buboes, so gratuitously decried by some and so over enthusiastically praised by others, will undoubtedly become generally accepted as a rational and scientific treatment when its indications can be made more precise by a tranquil and impartial analysis of conditions. The tables of cases in which this operation was performed seem to lend some colour to his expectations.——From epidemic disease to public health is a natural transition, and the *Pocket Notes and Remembrancer for Sanitary Inspectors and all engaged in Public Health Work*, by J. T. COWDEROY, Chief Sanitary Inspector to the Borough of Kidderminster, now in its fourth edition (London: The Sanitary Publishing Co., Limited. 1912. Price 2*s.* net) affords a considerable amount of material that would be useful to those for whom the little book is especially written and also to many practitioners, especially in country districts. It consists of summaries of the various Acts relating to Public Health, Housing of the Working Classes, River Pollution, Infectious Diseases, Sale of Food and Drugs, Sanitary Defects and Nuisances, Slaughter-houses, Canal Boats, Shop Hours, Factories and Workshops, Burial Grounds, and Meat Inspection. There are sections on microscopic stains and methods of staining and on methods of disinfecting clothing, cesspool requirements, technical terms in use in the different professions and trades that come into contact with sanitary work, the Housing and Town Planning Act, and so forth.——In *Health Readings*, by C. J. THOMAS, M.B., B.Sc. Lond., D.P.H. (London: Methuen and Co., Limited. 1911. Price 1*s.* 6*d.*), we begin at the very beginning of the subject. This is "a book all about the body and the things which do it harm and the ways which keep it well," written in the colloquial style, midway between the didactic and the catechetical, calculated to catch the interest of juvenile readers and carry them along in the study of their own natures and physical organisms. Starting with the difference between living and dead things the body is first described in admirable simplicity, and the effect on it of clothing, food, fresh air, housing, cleanliness, exercise, rest, and sleep are so discussed as to impart without any special effort of learning a considerable amount of physiological knowledge. A few simple instructions for the more ordinary accidents conclude the book.——Both sport and the Riviera are mentally associated with health and hygiene, and in *Sport on the Rivieras*, edited by EUSTACE REYNOLDS BALL, F.R.G.S., and C. A. PAYTON, M.V.O. (London: 27, Chancery-lane. 1911. Price 2*s.* 6*d.*), we find an excellent attempt to deal with popular winter resorts from the purely recreative side. Golf, lawn tennis, motoring, cycling, river-, lake-, and sea-fishing are discoursed of in a way to attract the attention of many who have hitherto regarded the Riviera as a collection of places for the invalid or the fashionable world. The list of writers includes, besides the editors, Arthur S. Browne, J. D. E. Loveland, C. N. Williamson, Captain E. D. Miller, D.S.O., A. W. Rumney, H. R. Reynolds, M.A., and "Sarcelle," of *The Field*, all of them authorities in their special fields.

JOURNALS AND MAGAZINES.

The Quarterly Journal of Medicine. Edited by WILLIAM OSLER, J. ROSE BRADFORD, A. E. GARROD, R. HUTCHISON, H. D. ROLLESTON, and W. HALE WHITE. Vol. V., No. 18. January, 1912. Oxford: At the Clarendon Press. Subscription price, 25*s.* per annum. Single numbers, 8*s.* 6*d.* net each.—The contents of this number are: 1. The Adrenal Cortex, its Rests and Tumours; its Relation to other Ductless Glands, and Especially to Sex, by Ernest E. Glynn. The objects of this paper are described as being to classify and describe the commoner adrenal tumours upon a combined clinical and histogenetic basis; to draw attention to the relation between the adrenal cortex and other ductless glands, and especially to its relation to sex characters; and to present new reasons against the hypothesis that renal hypernephromata are derived from adrenal rests. The adrenal cortex is regarded as being specially connected with growth and sex characters; the medulla with blood pressure. Adrenal hypernephromata are associated with sex abnormalities, almost invariably in children, usually in adult females before the menopause, but apparently never in adult females after the menopause nor in adult males. Rests from the adrenal cortex are common in certain localities, especially in infancy, except in the kidney. Various reasons against the hypothesis of Grawitz that the tumours called renal hypernephromata arise from remnants of adrenal cortex are given. The paper has a long list of references and is illustrated by a plate. 2. The Antigen (Vaccine) Treatment of Enteric Fever, by F. J. Sadler. The term vaccine, though generally employed, is considered inappropriate and is used under protest, the alternative of antigen treatment being suggested. Details of a number of observations are given, and the general conclusions arrived at are that the treatment of enteric fever by vaccines makes average cases mild, severe cases average, and that it is only the very worst cases which are not favourably affected. The usual dose given was one of 2,000,000 bacilli to an adult and proportionately less to children. The interval between the injections was reduced in the later observations, and that now advised is about four or five days with an outside limit of six. The dose should also be influenced by the nature of the case. If this is severe, and especially if it is of cerebral type, a dose of 1,000,000 bacilli for an adult and proportionately less for a child is advised. 3. On Myotonia, by T. Wardrop Griffith. Three cases of Thomsen's disease occurring in one family are described, and in two of these the symptoms were of special interest, since in one they were transient and in the other they diminished greatly in severity and ultimately disappeared. Under the name of myotonia atrophica et hypertrophica Dr. Wardrop Griffith describes a case in which there were symptoms of myotonia in a pronounced form accompanied by marked atrophy of some groups of muscles and an enlargement of those of the calves. In the light of his experience Dr. Griffith thinks that the view usually held that the condition never passes off is unduly pessimistic. The paper is illustrated by several plates. 4. The Distribution and Excretion of Radium and its Emanation after Internal Administration, by E. Bellingham Smith. It was found that after giving radium by the mouth or by injection a widespread degree of radio-activity is evident throughout the body, and that the elimination of radium takes place principally and rapidly by the bowel, and in a minor and slower degree by the kidneys. In mice there was no evidence that the liver or skin played any part in excretion. The emanation can be obtained in solution and can be introduced into the body by inhalation, feeding, or injection. It is eliminated chiefly by the lungs and to a very small extent by the kidneys. 5. Two Cases of Paroxysmal Bradycardia (Total), by

E. E. Laslett. In both cases the slow heart beat was paroxysmal and was due to a true or total bradycardia in which both auricles and ventricles participated. The condition was therefore in both distinct from heart-block. 6. Cardio-respiratory Murmurs, by Carey Coombs. The paper is based upon the notes of 180 cases. Two groups are differentiated: in the first the murmur is often associated with pulmonary collapse and is usually heard chiefly or solely at the base of the heart. In the second group it is best heard just outside the apex beat and is associated with pulmonary tuberculosis and nervous excitement. Dr. Coombs agrees with the view that in the second group, at any rate, the murmur is a peculiar type of friction sound. 7. Primary Occlusion of the Ostia of the Hepatic Veins, by Theodore Thompson and Hubert M. Turnbull. Three cases are described with full details of their microscopical characters, and a review of other published cases is given. 8. Critical Review: The Digitalis Preparations employed in Medicine, by W. E. Dixon. The various active principles are individually considered, and Professor Dixon concludes that pharmacological and clinical investigations have not made a clear case for the substitution of "active principles" for galenical preparations of digitalis in the treatment of patients. They are for the most part just as irritant as the infusion or tincture, and are neither more trustworthy and constant in action than a properly standardised tincture, nor are they absorbed more rapidly. The one advantage certain of them possess is that they may be given intravenously without ill-effects.

The Journal of Vaccine Therapy.—The first issue of a new journal, entitled the *Journal of Vaccine Therapy* and dated Jan. 1st, lies before us. It is edited by Dr. R. W. Allen and is published by Mr. H. K. Lewis at the price of 1*s.* per issue, or 10*s.* 6*d.* annually post free. We are informed that it is "founded neither in order to afford a medium for the undue pressing of the claims of Vaccine Therapy to a place in modern therapeutics nor to advertise the merits of any particular brand or brands of vaccines." The present number contains a paper by Dr. R. J. M. Buchanan on the Pathogenesis and Treatment of Rheumatic Fever and Chorea, in which the claim of "rheumatism" is upheld to be an acute specific disease and an infection. After a discussion on the treatment generally used, the author relates his experience, with illustrative cases, of a vaccine made from micrococcus rheumaticus, which he concludes has a definite effect on acute rheumatism when given early in the attack. In two cases it has shown a definite effect on the endocarditis. He does not depreciate the usefulness of the salicylates and other remedies, but considers that cases of rheumatic fever and chorea are assisted beneficially by the vaccine treatment. Dr. F. J. Sadler describes the vaccine treatment of typhoid fever, and Dr. R. W. Allen discusses Acne, its Causation and Treatment. The editor calls special attention to the fact that in reporting cases it is highly important to mention the immunising potency of the vaccines used (which differs materially in different products) as well as the dose given.

The Journal of the London School of Tropical Medicine.—The progress made by the London School of Tropical Medicine, since its establishment on a small scale in 1899, in the opinion of the school committee justifies the publication of a journal devoted to tropical medicine and conducted by the staff, together with the past and present students of the school. At first the journal is to be issued about the middle of each session—that is, three numbers in each year, the numbers to consist of about 100 pages each. The various articles will be arranged under the headings of Clinical Medicine, Pathology, Bacteriology and Hygiene, General Medical Zoology, Protozoology, and Helminthology, the teachers of these several departments at the school having charge of them. The editor-in-chief is Sir Patrick Manson, with Dr. C. W. Daniels as general editor, and Colonel A. Alcock, C.I.E., F.R.S., Professor R. Tanner Hewlett, Dr. R. T. Leiper, Mr. H. B. Newham, and Dr. C. M. Wenyon as sectional editors. It is published by Messrs. Taylor and Francis, Red Lion-court, Fleet-street, E.C., price 3*s.* each number or 7*s.* 6*d.* per annum. In the first issue, dated December, 1911, Colonel Alcock reviews some recent publications relating to medical entomology. Dr. A. Hutton writes on the Morphology of Oxyuris Ambiguus Rud: Type of the Genus Passalurus. Dr. Leiper contributes Notes of Recent and Some New Records of Helminthes in Man, of which there are few records; also a check list of Helminthes Parasitic in Equines, an account of a new Echinostome Parasite in Man, and a method for dealing with Town Wells Infested with Guinea-worm; Dr. F. P. Minett discusses the question of Flies as Leprosy Carriers; Mr. Newham has some Notes on the Examination of Rats for Plague and a consideration of the Leucocytic Variation in Trypanosomiasis; Dr. H. Bayon, Craggs Investigator, London School of Tropical Medicine, writes of Acid-fast and Acid-resisting Germs cultivated from Cases of Human Leprosy and their Determination, the results of his independent research, confirming almost in detail those of Captain T. S. B. Williams, I.M.S., whose work as well as that of Major E. R. Rost, I.M.S., has been already mentioned in our columns[1]; Dr. K. S. Wise deals with the Treatment of Leprosy in British Guiana; Dr. C. W. Daniels reports a series of cases of Trypanosomiasis in England, mainly at the London School of Tropical Medicine. There are in addition under each section abstracts of the more important communications relating to tropical medicine in the various journals.

ROYAL COLLEGE OF SURGEONS OF ENGLAND.

MEETING OF COUNCIL.

A QUARTERLY meeting of the Council was held on Jan. 11th, Mr. RICKMAN J GODLEE, the President, being in the chair.

The SECRETARY reported the death, on Dec. 22nd last, of Professor O. M. Lannelongue, of Paris, an Honorary Fellow of the College. The President was requested to write a letter of condolence to the family.

Mr. R. H. Burne's resignation of the office of Assistant Conservator was accepted, and the best thanks of the Council were given to him for his valuable services to the College during the last 20 years in the offices of Anatomical Assistant in the Museum and Assistant Conservator. Mr. Burne was then appointed Physiological Curator.

The name of a Member of the College was ordered to be removed from the roll of Members; his name had previously been removed from the Medical Register.

The Council appointed Sir W. Watson Cheyne a member of the Court of Governors of the University of Birmingham in the vacancy occasioned by the retirement of Sir Henry T. Butlin.

Mr. Rickman J. Godlee, the President, was appointed Hunterian orator for February, 1913.

A letter was read from the Royal Commission on University Education in London, stating that the Commission would be obliged if the College would submit for its information a statement upon dental education in London and nominate a witness or witnesses to represent the College before the Commission. A committee was appointed.

A committee was appointed to watch the interests of the Fellows and Members under the Insurance Act, with power to confer with other committees formed with similar objects. The committee was instructed to report to the next meeting of the Council.

The PRESIDENT stated that the vacancy on the Court of

[1] See THE LANCET, June 3rd, 1911, p. 1538, and July 8th, 1911, p. 109.

Examiners occasioned by the expiration of the period of office of Mr. J. Ernest Lane would be filled at the ordinary meeting of the Council on Feb. 1st.

The PRESIDENT announced that the Lord Mayor (Sir Thomas B. Crosby, F.R.C.S.) would be the guest of the College at dinner on May 3rd.

BRITISH MEDICAL BENEVOLENT FUND.

AT the December meeting 22 cases were considered, and grants amounting to £161 were made to 18 of the applicants. As the current account was already overdrawn to the extent of £215, the deficit was consequently increased to £376, and the committee earnestly appeals for support to enable it both to pay off this overdraft and to deal with the very distressing and numerous applications which are always received early in the year. Contributions may be sent to the honorary treasurer, Dr. Samuel West, 15, Wimpole-street, London, W. Appended is an abstract of the cases relieved:—

Wife, aged 25, of M.R.C.S., L.S.A. Husband had to be removed to an asylum a few weeks ago, and applicant, who is in very bad health, is practically destitute. One child aged 14 months. Voted £10.

Daughter, aged 27, of late L.R.C.P. Edin. Has been employed as a telephone clerk for the last ten years, but is in feeble health and has therefore decided to endeavour to support herself by letting lodgings. Voted £5.

Widow, aged 65, of L.R.C.P. Edin. Supplements an annuity of £20 by addressing envelopes, &c., but finds increasing difficulty in getting employment. Relieved 14 times, £141. Voted £5.

Widow, aged 53, of L.R.C.P. Edin. Has been deprived of a home by the recent death of a relation, and is dependent on a few shillings a week allowed by her mother-in-law. Relieved four times, £20. Voted £10.

Wife, aged 48, of M.R.C.S. Is separated from her husband through no fault of her own, and endeavours to support herself and six children, aged 17 to 9, by letting lodgings. Relieved twice, £24. Voted £5.

Daughters, aged 57 and 53, of late M.R.C.S. Health indifferent, and attempt to maintain themselves by taking lodgers or boarders, but have had a very bad season. Relieved seven times, £84. Voted £12.

Widow, aged 66, of L.R.C.P. Edin. Only income £20 a year from a small house, of which the lease has nearly expired. Relieved 12 times, £138. Voted £12.

Widow, aged 65, of M.R.C.S., L.S.A. Quite unprovided for at husband's death about 12 months ago, but hopes to support herself by taking a resident patient or boarders. Relieved once, £6. Voted £6.

Widow, aged 52, of L.S.A. No income and entirely dependent on her earnings from needlework, in which she is assisted by the younger of two daughters. Elder daughter, aged 18, earns a few shillings a week by teaching. Relieved five times, £46. Voted £12.

Widow, aged 63, of L.S.A. Only income £12 a year; children unable to give more than slight help. Relieved twice, £24. Voted £12.

Widow, aged 50, of M.R.C.S. No income, and is endeavouring to establish a boarding house. Relieved twice, £20. Voted £10.

Daughter, aged 62, of late M.D. Edin. Used to be a companion, but gave up her post a few years ago to nurse her two elder sisters, who are both chronic invalids. Only income £10 a year allowed by a friend. Relieved six times, £72. Voted £12.

Widow, aged 47, of L.K.Q.C.P.I. Quite unprovided for at husband's death and dependent on letting lodgings and needlework. Relieved once, £5. Voted £5.

Widow, aged 74, of M.R.C.S. Has a small income, but asks for a little help to meet quite unavoidable expenses. Relieved once, £12. Voted £5.

Widow, aged 61, of M.R.C.S. Quite unprovided for at husband's death three years ago, and finds great difficulty in obtaining a suitable post even in exchange for a home. Relieved twice, £26. Voted £12.

Widow, aged 66, of M.R.C.S. Is quite destitute except for small uncertain earnings from needlework. Relieved twice, £24. Voted £12.

Widow, aged 83, of M.R.C.S. Only means of support an annuity of £10 and an old age pension of 5s. a week. Relieved once, £6. Voted £6.

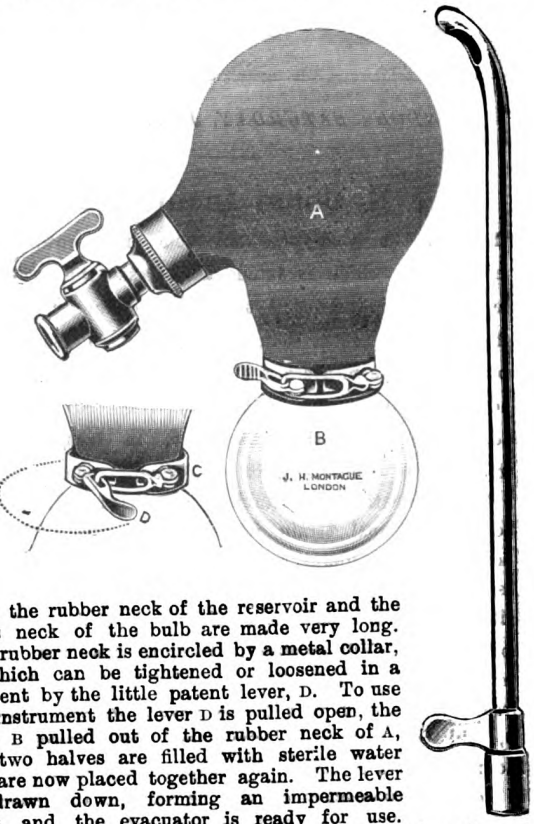
L.S.A., aged 67. Practises in a thickly populated neighbourhood, but finds great difficulty in getting paid, and is in consequence in arrears with his rent. Health very indifferent. Relieved twice, £36. Voted £10.

New Inventions.

A NEW EVACUATOR FOR LITHOLAPAXY.

MOST evacuating bottles used in the operation of lithola-paxy are made with two metal collars, one fixed to the neck of the rubber reservoir, the other fixed by cement to the glass neck of the bottle. The instrument is "assembled" by fixing the glass bulb to the rubber bottle by means of a bayonet joint on the two metal collars. This is a perfectly adequate means of "fastening" the two halves of the evacuator together, but it labours under the grave disadvantage of making it impossible to sterilise the instrument by boiling. After boiling once or twice the cement fixing the metal collar to the glass becomes loose, and the instrument first begins to leak and very shortly the glass and metal come apart. Mr. J. H. Montague, of 69, New Bond-street, London W., has, at my suggestion, made an evacuator which can be boiled again and again without this disadvantage.

The accompanying illustration shows the method adopted. A is the rubber reservoir, B is the glass bulb.



Both the rubber neck of the reservoir and the glass neck of the bulb are made very long. The rubber neck is encircled by a metal collar, C, which can be tightened or loosened in a moment by the little patent lever, D. To use the instrument the lever D is pulled open, the bulb B pulled out of the rubber neck of A, the two halves are filled with sterile water and are now placed together again. The lever is drawn down, forming an impermeable joint, and the evacuator is ready for use. After a certain length of time the rubber where it is embraced by the metal collar tends to perish, but as the rubber neck is very long it is only necessary to cut off the perished portion.

I have now had this instrument in use for a considerable time, and find that it gives me every satisfaction.

London, W. JOHN PARDOE, F.R.C.S. Eng.

SOCIETY FOR RELIEF OF WIDOWS AND ORPHANS OF MEDICAL MEN.—A quarterly court of the directors of the above society was held on Jan. 10th, at 11, Chandos-street, Cavendish-square, W., Dr. Walter Rigden, senior vice-president present, in the chair. Fourteen directors were present, amongst them being Sir Thomas Crosby, Lord Mayor of London, one of the vice-presidents who consented to be nominated as President of the society, to fill the vacancy caused by the death of Dr. G. F. Blandford. Since the last court one of the vice-presidents of the society, Sir Samuel Wilks, has died. Three gentlemen were elected members of the society. The sum of £1288 10s. was voted for the payment of the half-yearly grants to the annuitants of the charity. The grants to the orphans have been increased from £15 per annum to £25. The invested funds of the society now amount to £101,600. Membership is open to any registered medical practitioner who at the time of his election is resident within a 20-mile radius from Charing Cross. The annual subscription is 2 guineas, but life membership may be obtained by the payment of one sum, the amount of which depends on the age of the candidate. Relief is only granted to the widows and orphans of deceased members, and letters are constantly being received from widows of medical men asking for relief, but this has to be refused as their husbands had not been members of the society. Application forms for membership and full particulars may be obtained by application to the secretary at the offices of the society, 11, Chandos street, Cavendish-square, London, W.

THE LANCET.

LONDON: SATURDAY, JANUARY 20, 1912.

The National Insurance Act.

DURING the week the movement has grown among medical men which is intended to resist the working of the National Insurance Act until far stronger and more categorical safeguards than are conveyed to them by the wording of the measure are forthcoming. The protesters find that under the Act they may be overworked and badly paid; that they are, in fact, offered a remuneration which is quite inadequate, when the cost of their education, the anxious nature of their services, and the physical strain involved in those services are taken into consideration. Mr. WILFRID TRAVERS, the business manager of the Reform Committee of the British Medical Association, informs us that the accommodation in Villiers-street, Strand, has not proved commodious enough for the volume of business which has already arisen, and that offices have now been opened at 29, Old Queen-street, Westminster. The Committee, we understand, are receiving wide support to their demand for an Act of Parliament amending the National Insurance Act, in accordance with the declared object of the organisation, as settled at the recent Hammersmith meeting and reported in our columns; and it is to this end that appeal is made to members of the medical profession to join the movement. We trust that the Committee will appreciate the difference between those who join them out of a mere facile adherence to their programme, with the idea that some good must come out of any organised resistance, and those who give definite promises of work to secure the carrying out of that programme.

We cannot ourselves feel sanguine that sufficient influence can be brought to bear upon the Government to obtain an amending Act which shall categorically secure for the medical profession the position laid down by the six cardinal points. The attitude of the Reform Committee in demanding such amendment, however, is entirely logical. A number of members of the medical profession declared, almost as soon as the provisions of the measure were made public, that they would not work under a scheme which did not meet what they maintained to be their just claims to consideration, and these they put in the form of an irreducible minimum. The measure became the law of the land without securing for the medical profession that minimum, although the Council of the British Medical Association were willing to believe that sufficient had been granted, and that the position of medical men under the Act was properly safeguarded. The Reform Committee, representing a large body of practitioners who cannot be persuaded to the same belief, therefore ask for immediate legislation amended in directions which they have declared over and over again to be necessary. But although this demand is, as has been said, entirely logical, the Committee cannot possibly hide from themselves that to enforce it will be very difficult. For our part, while the courage and sincerity of the Reform Committee are undoubted, we cannot help wishing that they had not taken their stand solely upon the six cardinal points, for we believe that their object could have been as well attained by a resolute intention to see that the regulations under which the work will have to be done are just and adequate—are, in fact, such as take our professional position into better consideration than the various sections of the Act appear to. There can be no attempt made to conceal the fact that the massive support of the six cardinal points has been obtained on a coöperative principle, many members of the medical profession having little hope that the most debated one of these points will be granted, and having not much enthusiasm for another point; but, none the less, all, through loyalty to their fellows in the mass, supported the six-fold claim. In these circumstances it certainly seems to us that it is on the regulations that we should keep our attention fixed, for here it is still within the power of a strong and united profession to effect much, and here it is that we can turn from criticism to construction. The resolution not to work under the Act unless these regulations are satisfactory will, in the first case, help the framing of workable regulations, and may, in the second case, lead to the introduction into them of a flexibility which in the present position seems to us necessary. For the Act provides *sickness* benefits and *medical* benefits; and while the former can be paid for in coin of the realm from the same mint, the latter has to be supplied by a service that must be rendered in different places under different conditions. Medical men are one in their aims and one in their training to this extent, that all the medical education of this country is a highly standardised and expensive affair; but while, so far, we are homogeneous, our material interests in the practice of our profession lie in many opposite and sometimes conflicting directions. With a repetition that may be becoming tedious, we must point out that the great fault of the National Insurance Act is the way in which the medical profession, honoured with little attempt at consultation and imperfectly understood in so many ways, has been arbitrarily treated as a section of the community whose methods of gaining a livelihood, being all of one pattern, can at a moment's notice be turned upside down in order to conform to another pattern, without injustice to anyone. We are quite willing to grant that in such a general dislocation of affairs some medical men may benefit in their pockets, and it is possible that some may gain a certain security in their methods of livelihood; but against this must be put the certain fact that many others will be dire sufferers. No regulations of the Commissioners, so far as we can see, can possibly set aright all the wrong that will be done, but undoubtedly the way in which they are framed will prove of enormous importance.

Failing, then, the promotion of a new measure, which

indeed, we find to be a too sanguine expectation, the medical profession will have to bring all its energies to bear upon the securing of proper regulations. And we are perfectly confident that the more a stand is taken upon a professional basis and the less the methods of the trades union are employed, the better will be the result. Already there is much to warrant the belief that this Act, though it is not now treated by its parents as a provisional measure, is none the less regarded by them as open to criticism, indeed as having imperfections to be removed. The Chancellor of the Exchequer has declined to give any pledge with regard to such amendment, but Sir JOHN SIMON, the Solicitor-General, introducing Mr. ORME CLARKE'S exposition of the Act, which we review elsewhere, speaks of amendment as quite certain. The profession would welcome now the intervention of the great medical corporations as guides to a constructive policy.

Imagination in Medical Research.

THE great surgical philosopher of the first two-thirds of the nineteenth century, in the course of a presidential address to the Royal Society, described imagination as the faculty which, "properly controlled by experience and reflection, becomes the noblest attribute of man; the source of poetic genius, the instrument of discovery in science, without which NEWTON would never have invented fluxions, nor DAVY have decomposed the earths and alkalies, nor would COLUMBUS have found another continent." He could not have uttered such words without making a mental application of them alike to the science and art to which his own life was mainly devoted, and also to the kindred pursuits of the physician; and, indeed, it is manifest that imagination, as the parent of hypotheses explanatory of observed phenomena, and themselves capable of being brought to the test of experiment, is the ultimate source of all useful knowledge of the facts of life. Many of us have heard of the two students who reported upon the same patient in competition for a clinical prize. The patient presented, among other symptoms, a remarkable discoloration of a certain area of skin, and the first student described this discoloration with the most careful minuteness. He measured it in different directions and drew a rough sketch of its general outline. The second observed the phenomenon with equal care, but he exercised his imagination and formed a hypothesis which he proceeded to bring to the test of experiment. He asked a nurse for a wet towel, with which he wiped the discoloration away. It is evident that the faculty which he thus brought to bear upon the problem before him would be likely to stand him in good stead in relation to many others of a more complicated character; and that his exercise of the art of diagnosis would be practically immune from the errors incidental to the habit of taking all appearances at their face value. Imagination at once points to the possibility of more than one explanation of any given occurrence, or alleged occurrence, and compels inquiry as to the existence of probable causes beyond the particular one which may at first sight appear to have been in operation. But, as BRODIE said, it must be properly controlled by experience and reflection, lest it should become a source of error by inducing the acceptance of hasty and ill-considered suggestions. When the new Insurance Act comes into practical application, whatever the terms accepted by the medical men may be, those who serve under it will find ample scope for imagination in their endeavours to keep abreast of what may otherwise become a very science of malingering.

In dealing with medical and surgical problems generally, or as they affect communities rather than individuals, imagination must always be the initial factor in the conduct of research, and the chief signpost on the road towards discovery. To take the most important and most conspicuous of modern examples, it was imagination that first pointed to the mosquito as an agent in the conveyance of disease to man. Dr. (now Sir) PATRICK MANSON was in practice at Amoy, and his attention was called to the occasional presence in the blood of the natives of the minute larval filaria which had been discovered by BANCROFT and called after his name. This was seen under the microscope as a motile thread about 0·3 mm. in length by 0·008 mm. in diameter, completely inclosed within a capsule, and present in the blood in millions, but occasioning no apparent symptoms. Dr. MANSON employed Chinese hospital assistants to obtain blood-smears from as many natives as possible in order to ascertain the degree of frequency of the creature among the population. One of his blood collectors was greatly more successful in obtaining the filariæ than others, and inquiry showed that his specimens of blood were taken chiefly in the evening. Further inquiry showed that the filariæ swarmed in the evening in the blood of the superficial vessels of those of their bearers who worked by day and rested at night, and that they swarmed in the morning in the superficial blood of those who reversed this process, such as watchmen and other followers of night industries. A post-mortem examination of a day worker who died suddenly in the morning showed the lungs, the heart and great vessels to contain millions of filariæ, while the superficial vessels were free from them; so that their usually nocturnal migration to the surface was presumably due to changes produced in the blood by fatigue. Why should this migration occur? Dr. MANSON brought his imagination to bear upon the problem, and it suggested to him that the filariæ were parasites requiring the intervention of a second host in order to enable them to reach their next phase of existence, and that their nocturnal migration pointed to this host as being a nocturnal creature of blood-sucking habits. Among such the mosquito presented itself for inquiry, and a Chinaman infested by filariæ was hired to spend a night with a selected company of the insects. In the morning they were captured, gorged with his blood, and by dissections conducted on successive days the filariæ were seen to pass through the next stages of their existence in the muscles of the insect, and to return to the extremity of the sheath of its proboscis, ready to be deposited upon the surface of the next human victim in the immediate vicinity of the puncture, and to make their way through the skin to his lymphatics prepared to undergo complete development into nematoid worms

and to propagate their kind. So far all that was done was to elucidate the growth of the parasites which produce lymphatic varicosities and elephantiasis; but shortly afterwards LAVERAN discovered the parasite of malaria. Dr. MANSON'S imagination at once took fire, and he pointed out that, in all probability, a mosquito was the instrument of its conveyance to mankind. Unable to pursue the investigation himself, he explained his views to Major (now Sir) RONALD ROSS, to whom he also imparted the technique of mosquito dissection which he had himself employed, and who, after much patient and laborious research, was able three years later to confirm what Dr. MANSON had suggested, and thus to establish on a sure basis a discovery which will ultimately lead to the extirpation of a large group of serious or fatal diseases, and may rank with the discovery of anæsthetics or of aseptic surgery.

And, even when we approach the subject of prognosis, the chastened play of the imagination among possibilities should rather be encouraged than restrained. We need its help in order to picture to ourselves the infinite and never-ending struggle between the invading sources of disease and the several "antibodies" which the blood provides for their destruction and the provision of which may be augmented by resources of which medicine is only now beginning to avail herself. We manifestly need its help more when we attempt, by such resources as the microscope and the laboratory will afford, to forecast the issue of the struggle in the case of an individual, or still more, in the case of a disease which has only comparatively lately been brought within the sphere of scientific observation, such as the epidemic poliomyelitis which has recently affected children in many parts of Europe and of America. We have not only to identify the assailants where this is possible, but also to use the ordered play of the imagination in our efforts to establish firmly the lines of defence, and to provide the garrison by which they must be occupied. We have to guard both ourselves and the patients who confide in us against what has been described by an illustrious man as "the bane of half-knowledge," and we can only do this by fearlessly carrying exploration to its farthest possible limits, and by taking account of every circumstance which may affect the accuracy of our forecasts, whether they relate to individuals or to communities. For work of this description the imagination is the motive force of the intellect; and, without the impulse which it affords, our progress would at the best be slow and uncertain, even if it were not altogether arrested. The one thing necessary for its safe employment is that the philosopher should not be too much enamoured of the pictures which it supplies, and should be equally prepared to accept or to reject them as the results of experimentation may require. In other words, he should "love truth better than his system," while recognising that, without a system, his prospects of attaining a knowledge of truth would be very sensibly diminished. JENNER once wrote to JOHN HUNTER that he "thought" so-and-so, and HUNTER replied, "Don't think, try." It would, perhaps, be presumptuous to describe the advice as "bad," but at the best it was, at least, incomplete. Without "thought" there is no room for "trial," and no one knew this better than a finished experimenter like HUNTER. What he meant was clearly, "Don't rest at thinking. Pass your thoughts through the filter of experiment and accept only what the filter retains." In other words, exercise your imagination to the full, but be careful afterwards to correct and to control its operations.

State and Voluntary Sanitary Control of Workshops.

UNWHOLESOME dwellings are the greatest drawbacks to the industrial communities of all nations, but second only to them in sinister influence come unwholesome workshops. There is a formidable array of special trade diseases which can only be checked by the anxious supervision of the premises wherein the trade is pursued, and to this list there must be added ordinary diseases which are accelerated or rendered more frequent or more fatal by the insanitary condition of the factory. In spite of the many statistics published we do not know the full extent of the mischief done by keeping men and women at work in unsuitable premises. Some of the States in America are making notable efforts to thoroughly elucidate the subject, and what is being done is worthy of note, even though we cannot all agree of its practicability. The State of Wisconsin has enacted a law requiring medical practitioners to report to the Board of Health all cases of poisoning due to mercury, lead, arsenic, and phosphorus contracted through the patient's occupation. Cases of illness arising from work done in compressed air, caisson work, and so on, must be notified. Blank forms are sent to all the practitioners so that the reports made may be uniform. The name, address, the place of employment, and nature of the disease have to be inscribed on these forms. The State of Michigan, facing Wisconsin but on the eastern side of the great lake, has a similar law. All medical practitioners in this State are compelled to notify to the State Board of Health every case of disease caused by the work on which the patient is engaged. The name and address must be given, the length of time the patient has been employed, and the duration of the disease. All this information will in the final stage be remitted to the Commissioner of Labour and presumably will be used as a basis for further legislation. Such notification of certain industrial diseases resembles the factory enactments in this country of 1895 and 1901, while the suggestion of a wider notification to include all industrial diseases hardly seems to us workable from the practitioner's point of view—at any rate, as yet. Under our present legislation certain maladies are scheduled as *primâ facie* due to certain employments, but it is always a controversial question, for judicial decision if need be, how far the disease is due to employment and how far to outside conditions. To make the practitioner the referee on such points is to place upon him a very heavy responsibility.

While Michigan and Wisconsin are thus taking steps to extend the scope of legal interference in defence of the health of the workman, a move in the State of New York towards using voluntary organised efforts

to the same end should be noted. A considerable number of employers and employees have agreed to form "a Joint Board of Sanitary Control of the Cloak, Suit, and Skirt industry of New York City." The idea is to define a standard of sanitary conditions to be established and maintained in all the workshops. Both the employers and the workpeople have pledged themselves not to work in cellars or workshops in the rear of houses or attics unless, after examination of the methods of lighting and ventilation, special permission is given. Then the rules accepted give very full details in regard to outside fire ladders and the various means of fire escape, the provision of automatic sprinklers and chemical extinguishers. Special caretakers must be appointed to see that the fire buckets are always full of water, that no doors are locked during work hours, and that no one smokes in the workshops. The ways of exit must be very clearly indicated and the stairs safe to tread, of easy access, and well illuminated. Every workshop must have a large window-space, so that no part shall need artificial light during the daytime. When, in winter, artificial light must be used, incandescent mantles are recommended. The lights must be shaded and placed above and not too near the workers. At least 400 cubic feet of space shall be provided for each worker, and large pieces of furniture or materials must not be included in this space. Before and after the work hours and during the lunch hour all the doors and windows must be opened to give the premises a thorough airing. All floors are to be scrubbed once a week. Separate lavatories for each sex have to be provided, kept clean, well lighted and ventilated. A lunch-room, a dressing-room, and suitable contrivances to hang up the clothes worn in the streets have likewise to be placed at the disposal of the workpeople. It is only when all these rules have been satisfactorily applied that a sanitary certificate is granted by the Joint Board of Sanitary Control.

The success of such a movement must largely depend upon the public. The public-spirited employers who have consented to hamper themselves with all these restrictions, which must add considerably to their working expenses, expect some recognition at the hands of the public. They hope that the purchaser will inquire whether the clothes he proposes to wear have been made up in a workshop that has received the sanitary certificate. If this is done the movement will be of great use to the purchasers and the producers, but if the former will not give themselves the trouble to look after their own interests they cannot expect that tradesmen will long continue to make sacrifices on their behalf. If the "tentative" move on the part of a certain section of a certain industry in New York should be widely taken up great good will follow, but our experience in this country is not very hopeful. There is with us very little pressure of the practical and moral kind that is hoped for, exercised by the purchasers over the manufacturers—even the demand for leadless glazes has been fitful, we believe. Our Home Office is trying earnestly, and for that matter successfully, to get employers and workmen to agree upon structural and other precautions to be observed under the various Acts, and a long and growing list of regulations gives yearly more protection to those engaged in processes which are clearly dangerous. That there should be behind the State in such matters the steady support, not only of public opinion, but public action, is devoutly to be desired.

Annotations.

"Ne quid nimis."

THE EPIDEMIOLOGY OF ACUTE POLIOMYELITIS.

THE occurrence of large epidemics of poliomyelitis in Northern Europe and in America and of small outbreaks in various parts of this country, as well as the discovery of important facts in regard to the causation and spread of the disease, have enormously increased the interest taken in this subject. We have on several recent occasions commented upon various publications on the disease and upon the administrative measures suggested to combat its incidence and spread. In a disease of epidemic nature occurring in children it is natural to inquire what part, if any, is played by schools in its spread. This question is discussed in an interesting and critical manner in a paper read before the Medical Officers of Schools Association on Nov. 8th, 1911, by Dr. Frederick E. Batten,[1] whose researches upon the nature of this disease are well known. Dr. Batten first reviewed the clinical varieties of the disease and the history of the discovery of the virus. He stated that the virus will not grow on any of the ordinary media, and that it has not yet been stained or seen under the highest power of the microscope. It can be shown to be present in the mucous membrane of the nose and in the salivary glands of an infected monkey. It has only been found possible to transmit the disease to monkeys of all the animals which have been inoculated with it; and whether introduced by the brain, the peritoneum, or by intravascular, intraneural, or subcutaneous injection, the disease became established in the spinal cord. The exact period of incubation is as yet uncertain, but in 65 out of 81 monkeys it was under 12 days. The clinical evidence seems to suggest that it is less than six days. The infectivity of the disease appears to be not very great, the proportion of persons exposed to infection who develop the disease being 6 per cent., whereas with scarlet fever and diphtheria it is 22 and 17 per cent. respectively. Dr. Batten, in reviewing the evidence in favour of the spread of infection by schools, described the observations of Wickman in the Swedish epidemic. This observer found that the disease tends to travel along the railways and great thoroughfares, and he cited four instances where there was evidence that the disease was spread by schools. The evidence with Wickman's tables is carefully presented by Dr. Batten. The most important epidemic investigated from this point of view was that at Trästena, a small community of 500 inhabitants, consisting of 132 families living in 102 houses. In rapid succession 49 people were taken ill, the majority being children, and of the 49 cases 26 were paralysed. The relation of these cases to attendance at school is shown in a simple manner by a diagram. Dr. Batten concluded that there is no doubt that the virus was transmitted from person to person and that it was often carried by an intermediate person who was not suffering from the disease. It is also clear that this epidemic was not carried by water or by milk. Other outbreaks in Sweden, Berkshire County, N.Y., and Westmorland are also considered in similar fashion. Dr. Batten next reviewed the evidence against school infection, which is, in brief, that 75 per cent. of the

[1] Medical Officers of Schools Association. Poliomyelitis in Relation to the Spread of Infection by Schools. By Frederick E. Batten, M.A., M.D. Camb., F.R.C.P. Lond. London: J. and A. Churchill. 1911. Pp. 16. Price 1s. net.

cases occur before the age of four years—i.e., before the school age, that it is very rare for the disease to occur in an epidemic form in institutions, and, further, that in hospitals where cases of poliomyelitis are admitted the disease has never been known to spread. Dr. Batten summed up by expressing the opinion that the evidence in favour of the spread of infection by schools is not conclusive, but that it is a possibility which should be borne in mind. He advised that all contacts should be submitted to a period of 14 days' quarantine before returning to school. In infected cases he suggested that they should not return to school until at least a month after the onset of the illness, and only then if convalescence is complete and there is no discharge from the nose. In severe cases the resultant paralysis by itself prevents a return to school for months. We have also received a copy of a report presented to the Health Committee of the City of Carlisle by Mr. Joseph Beard, medical officer of health, upon an epidemic of the disease which occurred in the late summer and early autumn of 1910. There were 38 cases, with seven deaths. At an early period, on the recommendation of Mr. Beard, the Health Committee adopted a system of voluntary notification, which received the sympathy and coöperation of the local practitioners, with the result that useful information was obtained. Mr. Beard strongly urges the importance of universal notification of this disease.

HYGIENE AND THE TUBE BOOKING-CLERK.

IN the scales of legal justice the question of intent or wilfulness is commonly allowed its full weight either for or against the offender, so that, for example, a man charged with inflicting bodily hurt can, if he proves the inadvertence of his act, rely on the leniency of the court. In breaches against the public health, on the other hand, this plea is less satisfying, and rightly so, otherwise the careless householder, for instance, whose insanitary manners have spread an epidemic of infectious disease among his neighbours, might escape the pecuniary responsibility for his sins. Often, moreover, the effects of a dangerously unhygienic act, itself entirely inadvertent, can, if traceable to their origin at all, be linked up to it only with much difficulty, at any rate by a chain of legal proof. Thus a parent may innocently allow his child, while still desquamating from scarlet fever, to attend a gathering of other children many of whom are as susceptible to the disease as straw to a match. As with individuals, so with commercial enterprises. Every year in the London tube railways millions of the public avail themselves of the comforts and conveniences of subterranean travel. Each of these passengers, each time he goes by tube, receives a ticket handed to him by a booking-clerk, whose movements, hidden behind his pigeon-hole, are in most instances not noticed, perhaps not even seen. To the observant, however, the habits of the booking-clerk are of no little hygienic interest. At a first glance it would seem that on the receipt of the appropriate fare he immediately tenders a ticket to the purchaser who carries it in his hand to the liftman to be punched, and then places it safely in his pocket. Looked at more closely, however, the incident gains in significance. It may now be noticed that the clerk, when addressed by the passenger, first inserts one finger (sometimes two) into his mouth, for all the world as though he had burnt his hand, then, withdrawing it rapidly, tenders the requisite ticket. This ticket, now wet with the clerk's saliva, is picked up by the passenger, to whose fingers a portion of the moisture may adhere, is grasped by the ticketman at the lift, whose fingers may also receive a portion, and is finally conveyed to the passenger's pocket, under the warmth of which the remaining portion evaporates, leaving the residual particles to rub against the dark recesses of the lining. This sequence of events, of course, is subject to alteration. The booking-clerk is only human and sometimes he forgets to lick his fingers. Sometimes his occupation is taken from him by an automatic ticket machine or by the system of "strip-tickets"; but often—very often—the passenger, in return for his pence, may find that he is bearing away on his ticket a generous quantity of the booking-clerk's saliva. It may at once be granted that, in all probability, not many of these clerks are consumptive or are infected with any contagious disease. The practice is insanitary. If, as may be the case, it is the outcome of the contrivance by which the tickets are kept ready to hand in the booking-office, and by which an unmoistened finger is placed at a mechanical disadvantage, the difficulty might be met by a damping-pad beside each pigeon-hole. Certainly a progressive and enlightened railway company that not only provides its weary passengers with ozonised air, but exhorts them by public notice and under penalty not to spit, will hardly be backward in putting an end to this gratuitous distribution of their employees' saliva.

ACUTE PHLEGMONOUS GASTRITIS WITH ERYSIPELAS.

ACUTE phlegmonous gastritis is very rare and the number of cases which have been investigated bacteriologically is limited. The organism which has been most often found is the streptococcus, but Mr. J. E. Adams has reported in our columns a case due to the pneumococcus.[1] As erysipelas is due to a streptococcus, the suggestion has been made that phlegmonous gastritis is "erysipelas of the stomach." In the *American Journal of the Medical Sciences* for November last Dr. W. S. Baird has reported a case from the Pathological Laboratory of the Montreal General Hospital in which erysipelas, as well as general infection with the streptococcus, was present. A man, aged 30 years, was admitted on April 26th, 1910, complaining of dyspnœa, swelling of the legs, and vomiting. The pulse was 136, irregular, and of small volume. The heart was enlarged, and an apical systolic murmur transmitted to the axilla was present. There were œdema of the legs and thighs and tenderness over the epigastrium. The tongue was coated, and as soon as food was taken it was vomited. The liver was palpable, but the patient stated that he took only one or two glasses of beer or whisky daily. He was discharged improved on May 14th, but he relapsed and was readmitted on June 9th. In addition to the previous symptoms there was evidence of right pleural effusion, and the abdomen was prominent but not tender or dull in the flanks. The œdema disappeared, but he did not improve, and suffered from pain in the epigastrium and præcordium. Severe hiccough and vomiting developed. On June 16th erysipelas began on the nose and soon spread over the cheeks. The temperature was elevated and the præcordial pain and dyspnœa increased. Delirium followed, and the epigastrium became acutely tender. On June 19th he became much worse and complained of acute sudden pain in the epigastrium; the dyspnœa became much more severe, the pulse failed, and he died. At the necropsy the peritoneum was found covered with a viscid exudate and deeply congested. In the recesses and pelvis were over 300 c.c. of thick, yellowish fluid, smears from which showed Gram-positive cocci in chains. The stomach was greatly distended and dark bluish-red. The right pleura was deeply congested and contained 300 c.c. of turbid yellow fluid, smears from which showed Gram-positive cocci in chains. The heart weighed 500 grammes and was much dilated. Shining through the epicardium of the left ventricle were two round, elevated, light yellow œdematous areas, about 1 centimetre

[1] THE LANCET, Jan. 29th, 1910, p. 292.

in diameter, smears from which showed Gram-positive cocci. The stomach contained thin, yellowish turbid liquid. The mucosa was deep red and velvety in appearance, and was covered with a thin tenacious layer of yellowish mucoid material. The gastric wall for a distance of 15 to 18 centimetres from the œsophageal orifice varied in thickness from 4 to 8 millimetres. This was due to infiltration of the submucosa, which on section exuded drops of thin, yellowish pus. Smears from this showed leucocytes and chains of Gram-positive cocci. Other lesions found were central necrosis of the liver, septic spleen, cellulitis of the left crus of the diaphragm, fat necrosis about the cardia of the stomach, congestion and infarction of the lungs. Cultures from the heart's blood and the walls of the stomach yielded streptococcus pyogenes. Phlegmonous gastritis may be secondary to lesions of the stomach or an acute infection elsewhere in the body, or be part of a general septicæmia. It is often difficult or impossible to determine the primary lesion. In the present case it seemed that the erysipelas was primary and that the other lesions were part of a general septicæmia.

THE HEALTH OF PROFESSOR TRENDELENBURG.

WE publish in another column the oration delivered before the Hunterian Society last week by Mr. C. A. Ballance. In the course of his oration he describes the wonderful operation performed by Professor Trendelenburg in a case of pulmonary embolism, and has since received a letter from Professor Trendelenburg which will be of interest to our readers as telling the early history of the operation for pulmonary embolism. The following is an abstract of the letter, which is dated Jan. 11th, 1912: "I have hitherto had no success with the operation for pulmonary embolism, and must now leave it to others to bring about the first success, for I have been obliged to resign my office on account of ill-health. I have not hitherto published my experiences lest I should discourage others from undertaking what is certainly a rational operation. I am, however, very pleased to communicate to you my cases. The two already published you know about. To them should be added ten cases which have subsequently been operated on in my clinic mostly by my assistants, and of which I give you a list. In all death followed shortly after the operation, which in most was undertaken too late. The two cases already mentioned and that of Krüger in which death did not occur till some days after the operation from suppurative pleurisy, are, up to the present, the most successful. In every case we are convinced that the operation was fairly simple and in favourable circumstances, which, however, can but seldom occur, ought to succeed. It has been stated that the diagnosis of embolism is too difficult and uncertain. This is not the case when we have to do with surgical patients suffering from fractures, operation cases, and so forth, who were previously sound. In all our cases of this nature the emboli in the pulmonary artery were found. We only failed to find the embolus in one case which was sent to me from the medical side moribund, with the diagnosis of pulmonary embolus. I have not included this case in my list. In doubtful cases and in cases of embolus or thrombosis without severe symptoms, we have been accustomed to bring the patients into the operation theatre and to wait. In two such cases the symptoms of embolism subsided and recovery followed. In seven cases the course was so rapid that no question of an operation could arise. After these experiences I believe that in spite of the failure that has hitherto attended it the operation for pulmonary embolism has a future. The resolution to operate has not been in most cases taken sufficiently promptly, and perhaps also improvement in the technique is required." All British surgeons will learn with the deepest sympathy and regret of the illness of Professor Trendelenburg, whose name is so well known and honoured in every surgical clinic. The operation for pulmonary thrombosis is not the only advance in the surgery of the venous system which we owe to him. The brilliantly successful results which have followed ligation of the ovarian veins in puerperal septicæmia will ever be associated with his name. After 45 years of strenuous hospital work it is to be hoped that this noble life will long be preserved to contribute further to the science if not the art of surgery.

A MEDICAL MAN'S BEQUEST.

THE late Dr. Charles Alfred Lee, the senior medical practitioner of Hull, who died, unmarried, on Jan. 13th, has left by his will £155,000 for charitable purposes. The greater part of this munificent bequest is to be devoted to the building and endowment of almshouses for the city of Hull. Throughout his long life Dr. Lee was a generous supporter of local charities, and one of the wards in the Hull Royal Infirmary, as well as a home for sailors' orphans, bear his name. The scheme for the erection of almshouses, which is outlined in the *Eastern Morning News*, is on a very large and comprehensive scale; and one of the last acts of the donor's life was to sign the deed of conveyance of the 4¼ acres chosen by him to be the site of his foundation. The project interested him deeply, and his will gives clear directions for the equipment and maintenance of the institution and for the selection of its inmates. "Lee's Rest Houses," when completed, will stand as a lasting memorial to the charity and public spirit of a medical practitioner.

THE ETIOLOGY OF YELLOW FEVER.

A USEFUL purpose is sometimes served by "taking stock" of the state of our knowledge of a particular disease, and by passing in review the evidence upon which our opinions regarding it have been based. A recent instance of the value of this "stock-taking" is furnished by Dr. Harald Seidelin, the editor of the *Yellow Fever Bureau Bulletin*, who has contributed to the November number of that journal a very thoughtful and suggestive article in which he discusses the evidence upon which the modern etiology of yellow fever is based. He is well qualified for the task seeing that he has had both personal and practical acquaintance with the disease in one of its endemic areas, and has been for some years engaged in scientific research in regard to it. Though apparently a firm believer in the modern doctrine which ascribes the spread of the malady to the agency of a species of mosquito, Dr. Seidelin does not hesitate to criticise freely the evidence which has been adduced in its support, and to indicate the lines on which further investigation ought to proceed. The view that yellow fever infection is conveyed to man by the bites of the stegomyia fasciata is based mainly upon experiments carried out by Reed, Carroll, and Agramonte of the United States Commission more than ten years ago. It is now suggested that these experiments were not conducted altogether under ideal conditions, and that therefore they do not afford absolute and conclusive proofs; Dr. Seidelin contends that the transmission of yellow fever by means of the S. fasciata has not been proved beyond doubt on strict scientific principles in the way that the transmission of malaria by the anophelines has been demonstrated. It is, however, admitted that the arguments adduced in support of the theory are very strong, and that for practical purposes they may after all be accepted. Corroboration, moreover, is found in the fact that prophylactic anti-mosquito measures based

upon the theory have succeeded, when efficiently enforced, in causing the disappearance of the disease in places which were formerly much afflicted by it, as, for instance, at Habana and Rio de Janeiro, where previously other prophylactic methods had been found utterly futile. Other points associated with the modern etiology of yellow fever are also discussed by Dr. Seidelin, and he indicates that although the inferences already drawn regarding them may be perfectly correct, yet the evidence adduced in their support has been quite insufficient. Further confirmation is therefore very desirable before these points can be finally accepted. It has never been shown, for example, that the S. fasciata is the *only* species of mosquito capable of infecting man with yellow fever. Neither has it been definitely proved that the yellow fever parasite undergoes an evolution of 12 days' duration in the body of the stegomyia; nor can it be considered as conclusively demonstrated that the blood of the yellow fever patient is infective only during the first three days of the illness; much less can it be concluded that the yellow fever parasite must be absent from the blood after the expiry of that short period. The proofs of some at least of these points would probably not be very difficult to obtain if further experiments devised for this purpose were carried out by responsible investigators. As these points are of some importance, it is extremely desirable that such experiments should be undertaken without unnecessary delay. The fact that the specific organism of yellow fever has not been satisfactorily isolated has hitherto somewhat hindered arrival at final conclusions. There are now, however, grounds for believing that the disease is caused by a protozoal parasite, the principal forms of which have been discovered and described by Dr. Seidelin, who has found them present in the blood or tissues of about 90 per cent. of the yellow fever cases investigated by him. If these observations are confirmed by other experts a very notable advance will have been made towards the microscopical detection of the disease and the settling of many disputes as to what is, and what is not, true yellow fever, a matter often of great administrative importance. The forms of the parasite found by Dr. Seidelin have hitherto been termed "yellow fever bodies," but he now proposes to call this parasite the Paraplasma flavigenum, and he thinks it probable that it belongs to the family Babesiidæ. It is quite possible that yellow fever may not be exactly the same disease in all the places where its presence is reported; and this might be explained upon the supposition that various forms of paraplasma exist, just as there are varying types of malaria caused by different species of plasmodia. It is possible, therefore, that in the future we may have to consider different varieties of paraplasmosis in the same way that we speak of different babesioses and trypanoses. Our readers are doubtless aware that there is no recognised pathognomonic sign of yellow fever, so that at present it is often impossible to settle definitely the diagnosis of the disease. But assuming that the parasite discovered by Dr. Seidelin is the true cause of yellow fever, there would now seem to be some prospect at last of microscopical confirmation of the diagnosis being obtainable. It is admitted that these "yellow fever bodies" are commonly present in small numbers in the blood of the patients and that they may be very difficult to find unless much time is spent in searching for them. The detection of these "bodies," moreover, requires the employment of the best possible microscopic outfit. Thus it will be seen that there are still some difficulties to be surmounted before we can secure microscopical confirmation of the diagnosis of yellow fever; but further study of the subject may in time evolve an easier method of finding the specific parasite. Though Dr. Seidelin believes that the paraplasma flavigenum is the organism which causes yellow fever, he does not deny that some evidence has been brought forward connecting Sanarelli's bacillus icteroides with the disease, and he is disposed to adopt the view of Dr. J. Guiteras, who has attributed to this bacillus, along with others, responsibility for the hæmorrhagic phenomena met with in attacks of yellow fever. If this should be the case, these phenomena would have to be looked upon as complications only, and not as actual symptoms of the disease. In order that further investigations which are so much needed may be carried out at once the Yellow Fever Bureau has despatched Dr. Seidelin to Merida in Mexico, where an outbreak of yellow fever has recently occurred. If suitable opportunities are afforded to this investigator in pursuance of his inquiries we have no doubt that he will succeed in clearing up much that is at present doubtful, and at the same time obtain the further evidence which appears to be required to place the modern etiology of yellow fever beyond all dispute.

DRUG ARCHITECTURE AND THE ORGANISM.

THE chemistry of synthetic drugs is a subject of rapidly increasing importance, and the modern aspects of it are well presented in a recent volume that has reached us [1] The writer sets out a very interesting sequence of events. The question of the relationship of physiological action to chemical constitution has, of course, received considerable impetus since the introduction of synthetic remedies. The ionic theory also has advanced very considerably our knowledge of the physiological action of drugs. Pharmacology, therefore, far from being as in bygone years an empirical collection of recipes hardly deserving the name of a science, has stepped into the region of exact study. Not only are we adding every day to our means of isolating the active principles of a drug upon which certain physiological effects depend, but we are gradually becoming able to map out the constitution of these principles and to separate them into architectural groups, each possessing a significance of its own, positive or negative in character, as the case may be. It is conceivable that in the treatment of disease by drugs the time may come when structure and the pharmacology of a drug may be so well correlated as to render the practice of prescribing entirely free from empiricism. A consummation of the kind is foreshadowed in the examples given by Mr. May in his very interesting book; but against all attempts to reduce pharmacology to an exact science must be reckoned the extraordinary complication of the human machine and the consideration, further, that there are influences acting upon it which are sometimes psychological. It is doubtful whether idiosyncrasy will be brought under control by the most intimate knowledge of chemical constitution, though that reflection will not deter us from attempting to set up a pharmacological system of cause and effect. When we read in Mr. May's book paragraphs such as the following, it is obvious that the ground is being cleared in the direction indicated: "The influence of the chemical constitution of a substance on its physiological effect can be seen from the fact that definite changes in the chemical constitution of substances belonging to the same class, are usually accompanied by definite changes in the physiological effect, and, further, that the addition of certain molecular groups to differently acting substances can change them into similarly acting or equally inactive bodies." Again, "Morphine has a strong hypnotic effect, and the anchoring group is probably one of the hydroxyl groups. If these are combined with sulphuric

[1] The Chemistry of Synthetic Drugs, by Percy May, B.Sc. Lond., London, Longmans, Green, and Co., 1911, pp. 222, price 7*s.* 6*d.* net.

acid, then the morphine cannot be 'anchored' to the nerve tissues of the central nervous system and the resulting substance has no effect at all. If the hydroxyl is only altered by the entrance of an organic radicle, with the formation of substances such as methyl, ethyl, or acetyl derivatives, then the hypnotic effect is thrust into the background, while the action of the respiratory centres, produced by morphine to a slight extent, becomes much enhanced and dominates the physiological effect (codein, heroin, &c.)." As another example we may quote the following: "In many cases physiologically active compounds show a degradation of the molecule, and these same substances, if they are made so resistant that they no longer suffer any alteration in the organism, then become inactive. For example, xanthine has no tonic action on the heart muscle, but theobromine (dimethyl-xanthine) has a slight tonic action and caffeine (trimethyl-xanthine) has a still more marked tonic action, from which it will be seen that the addition of methyl groups to the nitrogen of xanthine adds a special action on the heart to the ordinary physiological action of xanthine." Mr. May's book is most interesting and suggestive, and the person who reads it carefully will not be left wondering why it is that of synthetic remedies there is no end.

THE DARK AND DAMP DAY.

HUMAN activity undoubtedly receives a check under the dispiriting conditions of the weather which has characterised the British Isles for the last week or so. The absence of direct sunlight is bad enough, but there has been also a dampness in the atmosphere which tends to interfere with the healthy functions of the skin. Normal transpiration is hindered when the air is saturated with moisture. Instead of passing away, perspired products remain as a stickiness which clogs the skin. When it is remembered that the amount of vapour passing from the skin in dry air at normal temperature may amount to 30 ounces per day, while in moist air the amount so transpired may only be from 7 to 8 ounces, it is clear that an important function is considerably hampered by excessive humid conditions. It is well known that human sweat has toxic properties, so that it is not surprising that under these meteorological conditions the vitality gets low and common ailments are prevalent. Amongst these, obscure muscular pains and chronic rheumatism are very generally complained of. The indication is in favour of increasing the application of warm water to the body so as to remove skin exhalations and compensate for the restraint put upon the skin by the continued presence of a humid air. It is, at any rate, a consolation that the absence of the feeling of well-being experienced under the present meteorological conditions is no sign of constitutional ill-health; it is a local disturbance set up by an external physical condition which arrests freedom of action. It is to be hoped that the source of this depression and disturbance, the damp and darkness of the present season, will ere long pass away.

THE ROYAL SANITARY INSTITUTE.

THE fifty-third course of lectures and demonstrations for sanitary officers will be given from January to April at the Royal Sanitary Institute, 90, Buckingham Palace-road, S.W. The course will begin on Monday, Jan. 29th, and will be continued on successive Mondays, Wednesdays, and Fridays till April 19th, at 7 P.M. The fee for the complete course of 33 lectures will be £3 3*s*., or for the first part of the course, consisting of 26 lectures on elementary physics and chemistry, public health statutes, the duties of sanitary inspectors, and municipal hygiene, £2 12*s*. 6*d*. The fee for the second part, dealing with food inspection and analysis, is £1 1*s*. Among the lecturers are the names of Dr. G. F. McCleary, Dr. Charles Porter, and Dr. E. Petronell Manby. The demonstrations include visits to municipal buildings and works, factories and dairy-farms, the Metropolitan Cattle Market, and a knacker's yard. In order to assist school teachers and other students entering for examinations in hygiene in its bearings on school life, and to help women health visitors and school nurses, a course of lectures will commence on Feb. 16th at 7 P.M. and be continued at the same hour on Mondays and Fridays during February, March, and April. The fee for the course, which includes the privilege of attending certain of the lectures given to sanitary officers, will be £1 1*s*., and the subjects treated include general physiology and personal hygiene, the growth and development of the child, the sanitation of school buildings and dwellings, educational methods, and first aid. Among the lecturers are Dr. A. B. Kingsford, Mr. F. N. K. Menzies, Mr. E. H. T. Nash, Dr. Eric Pritchard, and Mrs. Marion Hunter-Vaughan. Full particulars and forms of application for the examination can be obtained at the offices of the Institute, 90, Buckingham Palace-road, S.W.

SIR THOMAS BROWNE AND THE WITCH-TRIALS: A VINDICATION.

PERHAPS the only place where we meet the name of Sir Thomas Browne without pleasurable associations is in the account of the trial of Amy Duny and Rose Callender for witchcraft before Sir Matthew Hale in 1664. It has frequently been stated, and it is widely believed, that Sir Thomas Browne was responsible for the hanging of these two women. He made a statement in open court which is alleged to have carried great weight with the jury and to have influenced the judge against the prisoners, with the result that they were convicted and hanged. This is the view frequently adopted by writers on the subject. One of Sir Thomas Browne's biographers, Mr. Edmund Gosse, goes so far as to state that the blood of the two women was on his head. It is now suggested in two articles published in the *Norfolk Chronicle* of Dec. 23rd and 30th, 1911, that the facts connected with this trial have been greatly misrepresented, and that the suggestion that Sir Thomas Browne was responsible for the death of these two women is not in accordance with the facts of the case as recorded at the time. Mr. Malcolm Letts in the articles referred to examines the account of this incident as related by Sir Thomas Browne's most recent biographer, and compares it with the contemporary report of the trial (taken in court by the judge's marshal and published in 1682), with interesting results. It is shown that Browne had very little to do with the proceedings. He was present in court, and at an early stage he was appealed to by the judge and thereupon made a statement as to his belief in the reality of witchcraft, an expression of belief in which ninety-nine out of every hundred of his educated contemporaries would have concurred, but there is nothing more against him. It is probable that the witches were convicted on the evidence adduced by the prosecution without reference to Sir Thomas Browne's opinion. We recommend all who are interested in the great Norwich physician to read this vindication.

AT the meeting of the Ninth International Otological Congress, which is to be held in the new buildings of the medical department of Harvard University, in Boston, U.S.A., during the week beginning August 12th, 1912, the distribution of three prizes will be awarded by the International Jury to whom the adjudgment has been committed. These are the Lenval prize, the Adam Politzer prize, and the Cozzolino prize; the two former for the best published work on the anatomy, physiology, and pathology of the organ of

hearing, the latter for the best published work on the anatomy and pathology of the organ of hearing, and upon clinical therapeusis. Candidates for these prizes should communicate with the president of the jury, Professor Dr. Adam Politzer, 19, Gonzagagasse, Vienna, and should send to him the work offered in competition, at least six months before the date of the opening of the next congress. Should a sufficient number of valuable works be presented in competition it is in the power of the jury to divide the Lenval prize and the Politzer prize, thus making five prizes for award.

THE mortality from plague in India from Nov. 25th to Dec. 9th, 1911, averaged about 6800 weekly; about one-third of these deaths were in the Bombay Presidency. The actual figures for the week ending Dec. 9th were 8450 seizures and 6583 deaths. Bombay Presidency returned 2367 deaths; Madras, 284; Bengal, 231; United Provinces, 1360; the Punjab, 106; Burma, 23; Central Provinces, 557; and Mysore State, 347. There were no cases reported in Eastern Bengal and Assam. An increase in the plague mortality is reported for the week ending Dec. 16th, the total number of deaths being 8191 as against 6583 reported in the previous week. The provincial figures are: Bombay, 2509; Madras, 321; Bengal, 415; the United Provinces, 1752; the Punjab, 138; Burma, 31; the Central Provinces, 744; Coorg, 7; Mysore, 398; Hyderabad, 1505; Central India, 349; Rajputana, 22.

SANITARY MEASURES IN INDIA.

A COPY of the annual report on sanitary measures in India for the year 1909–10 (Volume XLIII.) as presented to both Houses of Parliament has reached us. It deals with the health of the European and native troops, of prisoners in jails, and of the general population, also with vaccination, medical institutions, including hospitals, dispensaries, and medical schools, with lunatic asylums, and with sanitation. The latter portion of the Blue-book is made up of an abstract of the report of the Sanitary Commissioner with the Government of India for 1909 which has already been somewhat fully reviewed in THE LANCET.[1]

Those portions of the report which relate to the incidence of sickness and mortality amongst the European and native troops, the prisoners in jails, and the general population, as well as the section on vaccination, call for no further remarks than those made in our previous notices, as no new facts are put forward, these sections of the report being on similar lines to that of the Sanitary Commissioner's report for 1909.[2]

Medical Institutions.

Section VI., dealing with medical institutions, which has been contributed by the Director-General of the Indian Medical Service, presents several interesting particulars connected with the civil hospitals and dispensaries of British India which are either entirely supported by the State or aided by local or private funds. No less than 2638 such institutions existed in 1909, an increase of 60 on the previous year. In every province there is need for more, but the lack of funds prevents a more rapid growth of medical relief. The total expenditure amounted to £781,000, an increase of £93,000 on the previous year; but the subscriptions from Indians only amounted to £40,000. The extent to which hospitals are supported by the inhabitants varies very much in different parts of the country.

In the United Provinces the pay and prospects of the civil hospital assistants have been improved and they are now called sub-assistant surgeons. It is hoped that the numerical shortage in this useful class of subordinates will now disappear. In the North-West Frontier Province difficulty still exists in attracting good assistant surgeons, hospital assistants, and compounders. The number of students belonging to this province who are undergoing medical instruction is stated to be very small, and their pay and prospects will have to be improved.

In the Central Provinces the continued prevalence of plague is said to be keeping patients away from the hospitals and dispensaries. In Madras Presidency female patients resort more freely to the hospitals every year, and the employment of trained midwives for cases of labour in the patients' own homes continues to be very popular. In Bombay Presidency the experiment of sending subordinates out into malarial districts to treat cases in their own villages was tried and will be repeated. In Burma 13 new dispensaries were opened, and there has been a marked rise in the number of cases treated. The new general hospital at Rangoon was opened and is doing good work. It is stated that arrangements have been made for an improvement in the nursing staff at headquarters hospitals and for the training of male nurses.

Lunatic Asylums.

The total number of patients of both sexes under treatment in asylums in British India for the year 1909 was 7378, as compared with 7247 for the preceding year; of these, 5883 were males and 1495 females, and they include 2019 criminal lunatics. In Bengal it is noted that the accommodation is barely adequate and the asylums show a much higher sick-rate than those of any other province. Overcrowding is recorded at Dacca and at Tezpur in the Eastern Bengal and Assam administration. In the Punjab there were increased sickness and mortality chiefly from the result of bowel complaints, the etiology of which is under investigation. The difficulty of obtaining suitable attendants is mentioned and an attempt to remedy this by employing ex-soldiers is being made. In Burma overcrowding is also reported, and extensions to the Rangoon asylum are under consideration. In Bombay Presidency the number of deaths was high—130, as compared with 86 and 67 in the previous two years. This was the result of a severe outbreak of cholera at Thana and a minor one at Poona causing 37 deaths. Madras Presidency shows an increase in the asylum population of 25 per cent. in the past decade. The total expenditure on asylums for all India and Burma for the year amounted to £77,500, of which amount £6200 were derived from paying patients.

Medical Schools and Colleges.

In Bengal, the medical college at Calcutta showed a total expenditure of £18,582, the fees received from students amounting to £3516. The average cost of education of a military student (including maintenance) is £84 and of other students £23. There were 465 male pupils, excluding 85 military pupils, and 16 female. Of these, 56 students passed the final L.M.S. or M.B. examinations, 5 military students received a diploma and entered the service, and 28 pupil nurses and 16 *dhais* (native midwives) obtained certificates. The provision of a hostel for civil students is stated to be an urgent necessity, but funds are not available. In the medical schools there was an increase in the number of students admitted to the Temple and Cuttack, but a decrease at the Campbell; 60 male students passed the final examination and 16 entered Government service. These three medical schools together cost £8411, £877 were received as fees, and 495 male and 26 female students were under instruction during the year.

In the United Provinces 258 male and 71 female students attended the medical school at Agra. Of these, 64 males and 18 females appeared for the final examination, and 46 and 13 respectively qualified. Admission to the civil class is now only open to residents of the United Provinces who hold entrance certificates of Allahabad University. In Eastern Bengal and Assam the number of students in the Berry White School at Dibrugarh and the Dacca School was 319. In Burma the medical school at Rangoon showed 28 pupils, of whom 23 receive stipends from Government. The accommodation is stated to be quite inadequate and instruction is handicapped accordingly; the students are said to be markedly below the average as compared with other schools.

In the Punjab we find that the Lahore Medical College and School showed an average number of students of 180 and 207 respectively, as compared with 204 and 193 in the previous year. The reduction in the case of the college is chiefly due to the elimination of the preliminary science classes. Fifty-four students went up for the final L.M.S. or M.B. examination and 25 passed. At the

[1] THE LANCET, May 13th (p. 1300) and 27th (p. 1446), 1911.
[2] See also THE LANCET, Dec. 2nd (p. 1576) and 9th (p. 1651), 1911.

final qualifying examination of the Lahore Medical School 33 passed out of 35 who competed. In Central India the Indore Medical School had 72 students.

In Madras Presidency the strength of the Medical College is increasing steadily. The students numbered 367; 16 passed the M.B. and 13 the L.M.S. The "refresher" courses for sub-assistant surgeons are working satisfactorily, as also are the special classes for sanitary inspectors. The chemist and druggist department is, however, stated to have proved a failure. The Prince of Wales School at Tanjore had 57 students, Royapuram 144, and Vizagapatam 42, of which 5 out of 8, 26 out of 28, and 4 passed the final examinations respectively.

In Bombay Presidency the Grant Medical College had 518 students; 89 passed the final L.M.S. out of 211 who went up. There were 25 women students. A new hostel, lecture theatre, and pathological laboratory have been opened and a physiological laboratory is under construction. At the Poona School there were 127 pupils, of whom 65 were military; at the Ahmedabad School 135 pupils, of whom 67 were military; and at Hyderabad 51 pupils. More tutors in the anatomy department are stated to be required at Ahmedabad, as the practical training in this subject is considered very defective. At Hyderabad the teaching staff consists of only the superintendent and two assistants.

This *résumé* of the medical colleges and schools of British India and Burma is of particular interest in view of the attention that has been attracted recently to the development of what has been termed the "independent medical profession" in India.

Sanitation.

Section VII. of the report deals with the subject of sanitation in the several presidencies and provinces. In Bengal the sanitary board held three meetings during the year. Among the principal subjects of discussion were the Howrah drainage scheme and the Darjeeling water-supply and sewage scheme. Excluding Calcutta, there were 128 municipalities in Bengal that spent in the aggregate 39·67 per cent. of their income on original and recurring sanitary works compared with 39·51 in 1908. The actual sums expended under the three main sanitary headings—namely, conservancy, water-supply, and drainage—were more than in 1908 by about £16,600. In Calcutta satisfactory progress is reported in the construction of the overhead reservoir at Tallah, the reinforced concrete foundations being completed in October, 1909, at a cost of £27,590. The erection of the large steel structure forming the reservoir itself, which is estimated to cost £91,367, was then commenced, and was in its last stages at the end of the year under report. The municipalities in Eastern Bengal and Assam show an increased expenditure on sanitation of nearly £13,500, due mainly to the extension of the Dacca water-supply. The Sanitary Board afforded much useful advice to Government on the numerous schemes of sanitary improvement submitted to it. A conservancy tramway was completed at Dacca, and handed over to the municipality in December, 1909, and the surface drainage of the new civil station was in progress.

Progress in sanitation in the United Provinces continues to be made, and the Sanitary Board, which met nine times during the course of the year, criticised and approved of projects for improving the sanitary conditions of municipalities at an aggregate estimated cost of over £100,000. The total expenditure incurred on sanitary works under the supervision of the sanitary engineer in 1909–10 was £46,200. In March, 1909, Dr. Gilbert Fowler, of Manchester, visited the United Provinces, and furnished a valuable report on the treatment of sullage.

In the Punjab about £28,300 were spent on water-supplies, £16,700 on drainage, and £52,650 on conservancy, road-clearing and watering, and latrines. The hydro-electric scheme for Simla was in progress, and the intramural drainage of several sections of the city of Amritsar was under construction. A valuable improvement was effected in the water-supply at Delhi by the connexion of the wells with the suction at the intake whereby clear water can be drawn from the wells when the river is in flood. In the North-West Frontier Province improvements were effected in the sanitation of Peshawar and Dera Ismail Khan. The municipalities in the Central Provinces spent 46 per cent. of their income on sanitary works. Improvements in the water-works at Nagpur were in progress, and the extension of the water-supply at Harda at an estimated cost of £80,000 was proceeding.

In Madras Presidency £40,880 were spent on water-supplies, £5747 on drainage, and £63,515 on conservancy, including the upkeep of roads, &c. Designs and plans for new works for the main drainage of Madras city, estimated to cost £107,307, were completed. In Bombay Presidency, excluding the city of Bombay, £126,716 were spent on the improvements of water-supplies, drainage, and conservancy. Estimates amounting to £23,633 and £19,733 for water-supply schemes at Nasik and Hyderabad respectively were sanctioned and the works begun. The Pundharpur water-supply was completed, and the distribution of the water-supply at Karachi was extended and the drainage works of that city continued. In Bombay city the works in connexion with the Malabar Hill sectional sewerage scheme were completed during the year. In Burma, £107,994 were spent on water-supplies, £87,459 on conservancy, £41,047 on drainage, and £79,179 on other sanitary works.

The Vacant Post of Sanitary Commissioner.

Since the issue of the report of sanitary measures in India, 1908–09, it has been our sad duty to chronicle the sudden death of Lieutenant-Colonel J. T. W. Leslie, C.I.E., I.M.S., Sanitary Commissioner with the Government of India, in March, 1911. Since this distinguished officer's death the duties of Sanitary Commissioner have been carried on by the Director-General of the Indian Medical Service at the instigation of the Government of India with a view to financial economy in saving the salary of this appointment. In THE LANCET of July 29th, 1911, p. 308, we added a word of warning and protest against this short-sighted policy, which we ventured to remark would be a retrograde one. Since then we are glad to record that the Secretary of State for India, in replying to Lord Curzon in the House of Lords in November, stated that, contrary to the proposal of the Government of India, but in agreement with the views of the Indian Council, he considered that it was desirable to retain the appointment. We stated in THE LANCET of Dec. 30th, 1911, p. 1868, that we felt that Lord Crewe came to the right decision in this matter. There is no doubt, and no one denies, that economy must be practised and that appointments which are not necessary must be abolished; but over and over again it has been shown that expenditure on prevention of disease really results in economy, and unless this department of research is directly represented at headquarters of Government there is danger that due consideration will not be given to its requirements. Up to the present no further official action has been made public, and we sincerely hope that the Government of India will no longer delay its selection and fill the vacancy by appointing a whole-time officer of the Indian Medical Service.

Public Health.

ANNUAL REPORTS OF MEDICAL OFFICERS OF HEALTH.

West Riding of Yorkshire.—This county, with a population of about 1½ millions, comprises as many as 129 urban and 29 rural sanitary districts. Many of the former are "urban" only in name and illustrate the frequent fallacy of assuming that urban districts and towns are synonymous. Eight of them have not so much as 1000 inhabitants, while many have a large area. The urban district of Rishworth, for example, with a population of only 933, is 6551 acres in extent. When consideration is given on the one hand to the nature and limited resources of many of these districts and the small sums which are available for payment of their sanitary officers, and on the other hand to the demands of modern legislation and of Government departments on medical officers of health, it will be seen that it is only by the active participation of the county authorities that public health work can be made at all possible. Dr. J. R. Kaye's report, as usual, shows that much is done in this direction by the department under his charge. Among useful practices for this purpose the county inspections of isolation hospitals and the "nursing exchange" may be mentioned. A county scheme was formulated for a central sanatorium for pulmonary tuberculosis near Pateley Bridge to which different sanitary authorities in the county would contribute. Many authorities refused to participate, but sufficient support was forthcoming to enable the scheme to be pursued. Like all similar schemes, however, it has been suspended until the

distribution of funds under the National Insurance Act has been determined on. Meanwhile fever hospitals are being utilised to a limited extent for tuberculosis in various parts of the county. Stress is laid in the report on the active policy of dealing with bovine tuberculosis which has been followed in the county, and its justification in view of the findings of the Royal Commission. The county authorities examine milk samples for tubercle bacilli, but Dr. Kaye rightly insists on the danger of relying upon sampling milk, as if for the detection of adulteration, where tuberculosis is concerned. Time is necessary for guinea-pig inoculation, and where the result is positive it is often found that no data are available by which to identify the cow or herd which is at fault. To utilise bacteriological testing in the best way veterinary inspection is essential, the samples taken being of known origin and collected for specified reasons. So many instances of poisoning, due to the action of moorland waters on lead, were formerly to be traced in the county, that it is satisfactory to find that the known cases in 1910 were very few, and that practically all the public water-supplies yielding acid water are now subjected to neutralising treatment with more or less satisfactory results. In regard to housing Dr. Kaye refers to several "model villages" which owe their origin to the voluntary action of owners who have laid out their land on a regular system. In competition with any such scheme, however, it is open to any neighbouring owners to build on an entirely different and incompatible arrangement, and the jerry-builder can easily put up houses in the vicinity and reap a considerable advantage over the promoters of the "garden city" by reason of his freedom from the costlier restrictions. Some remedy for this is to be looked for under the town-planning part of the Housing Act of 1909; but, as Dr. Kaye observes, all available land in the South Yorkshire coal-field cannot be scheduled. The procedure under the Act is complicated and slow, and it is to be feared that the proper opportunities are being missed in many districts. In the case of insanitary houses Dr. Kaye refers to the onerous duties placed on medical officers of health under the housing regulations, and the impossibility of systematic inspection being carried out on any reasonable scale in districts where the officers who have to work the Act—the medical officer of health and the sanitary inspector—have neither the time nor the pay which are essential. This consideration is emphasised by many county medical officers of health in recent reports which have come to our notice, and must soon be taken seriously by the central departments concerned if the latest of our housing Acts, of which so much was expected, is to produce, outside large municipalities, any more satisfactory results than its predecessors.

County of Devon.—A "Devonshire stock" is associated with many fine traditions and good physical qualities, and we note with regret a birth-rate in the administrative county which has now fallen to 19·2—or 2 per 1000 less than in 1901. The low figure, as compared with England and Wales as a whole, is no doubt to be connected with the number of elderly people who live at the seaside and health resorts of the county, but there seems to be a very definite fall in the births among the indigenous population. It is clear that an insufficient and unsuitable supply of working-class dwellings contributes materially to this decrease. "The cry still comes from the rural districts concerning the lack of new houses, and the unsatisfactory condition of the old cottages in regard to ventilation, floors, dampness, insufficient window space, and bedroom accommodation." A useful diagram in Mr. G. Adkins's report shows some very marked differences in the tuberculosis death-rate between the several districts in the county, and it is to be hoped that with the advent of notification the circumstances associated with these differences will be further studied. The urban district of Torrington, with a tuberculosis death-rate of 2·7 per 1000, stands high in the list, as was the case in previous years. Personal instruction and advice on the prevention of the disease have been given by the education committee of the county through school lessons and lantern lectures by medical inspectors and agricultural lecturers, and Mr. Adkins anticipates good results from these and similar measures which have been adopted in many places in the county. The report discusses the water-supplies of the different districts, and enumerates a large number of cases in which a new supply or alteration of the existing works is imperative. Many of the summer visitors whose advent does so much for the prosperity of some of these Devonshire villages would welcome an active policy by the local authorities in this and in other respects—notably the provision of hospitals for infectious disease and improved arrangements for removal of refuse—in which this report shows that great deficiency often exists.

VITAL STATISTICS.

HEALTH OF ENGLISH TOWNS.

IN the 94 largest English towns having an estimated population of 17,559,219 persons in the middle of this year, 8745 births and 5172 deaths were registered during the week ending Jan. 13th The annual rate of mortality in the large towns, which had declined from 16·4 to 15·3 in the four preceding weeks, was equal to 15·4 per 1000 last week. During the 13 weeks of the fourth quarter of last year, the mean annual rate of mortality in the 77 large English towns averaged 14·7 per 1000, and was 0·4 per 1000 in excess of the death-rate recorded in London during the same period. The annual death-rates in the several towns ranged from 4·7 in Southend-on-Sea, 8·1 in Swindon, 8·3 in Wimbledon, 8·6 in Hastings, and 8·9 in Walthamstow, to 22·4 in Dewsbury, 22·6 in Stoke-on-Trent, 23·2 in Halifax, 25·9 in Stockton-on-Tees, and 32·6 in Walsall.

The 5172 deaths from all causes in the 94 towns were 20 in excess of the number recorded in the previous week, and included 323 which were referred to the principal epidemic diseases, against 313 in the previous week. These 323 deaths from the principal epidemic diseases included 88 which resulted from whooping-cough, 69 from measles, 69 from diphtheria, 58 from infantile diarrhœa, 20 from enteric fever, and 19 from scarlet fever, but not one from small-pox. The mean annual death-rate from these diseases last week was equal to 1·0, or 0·1 per 1000 in excess of that recorded in the previous week. The highest annual death-rates per 1000 persons living from measles were 1·4 in Nottingham and in Oldham, 1·9 in Burnley, and 3·6 in Warrington; from whooping-cough, 1·1 in St. Helens and in Cardiff, 1·2 in Newport (Mon.), 1·8 in Bury, 1·9 in Merthyr Tydfil, 2·4 in West Hartlepool, and 4·5 in Walsall; and from infantile diarrhœal diseases, 1·5 in Stoke-on-Trent. The 69 deaths attributed to diphtheria, which were 20 in excess of the number in the previous week, included 18 in London and its suburban districts, 6 in Liverpool, 5 in Leeds, 4 in Norwich, 4 in Bradford, and 3 each in Gillingham, in Plymouth, and in Newcastle-on-Tyne.

The number of scarlet fever patients under treatment in the Metropolitan Asylums and in the London Fever Hospital, which had continuously decreased from 2213 to 1845 in the eight preceding weeks, had further declined to 1762 on Saturday last; 165 new cases of this disease were admitted to these institutions during the week, against 182, 162, and 193 in the three preceding weeks. These hospitals also contained on Saturday last 1242 cases of diphtheria, 276 of whooping-cough, 116 of measles, and 52 of enteric fever, but not one of small-pox. The 1259 deaths from all causes in London were 88 fewer than the number in the previous week, and were equal to an annual death-rate of 14·5 per 1000. The deaths referred to diseases of the respiratory system, which had been 332 and 382 in the two preceding weeks, declined to 290 last week, and were 1 fewer than the number registered in the corresponding week of last year.

Of the 5172 deaths in the 94 large towns last week 220 were attributed to different forms of violence, and 449 were the subject of coroners' inquests. The causes of 50, or 1·0 per cent., of the deaths registered in the week under notice were not certified either by a registered medical practitioner or by a coroner after inquest. All the causes of death were duly certified in London and its 14 suburban districts, Leeds, Bristol, Bradford, Nottingham, Portsmouth, Salford, Leicester, and in 45 other smaller towns. The 50 uncertified causes of death last week included 9 in Birmingham, 7 in Liverpool, 4 in Darlington, and 3 in Manchester.

HEALTH OF SCOTCH TOWNS.

In the 18 largest Scotch towns having an estimated population of 2,182,400 persons in the middle of this year, 1111 births and 781 deaths were registered during the week

ending Jan. 13th. The annual rate of mortality in these towns last week was equal to 18·7 per 1000, and was 3 3 per 1000 above that recorded in the 94 English towns. During the fourth quarter of last year the mean annual death-rate in the former eight Scotch towns averaged 16 9 per 1000, or 2·2 per 1000 above that which obtained in the 77 English towns during the same period. The annual death-rates in the several Scotch towns last week ranged from 11·4 in Partick, 12·0 in Kilmarnock, and 12·3 in Paisley, to 20 6 in Greenock, 21·1 in Glasgow, and 21·9 in Aberdeen.

The 781 deaths from all causes in the 18 Scotch towns were 76 in excess of the number in the previous week, and included 82 which were referred to the principal epidemic diseases, against 83 in the previous week. Of these 82 deaths, 41 resulted from measles, 12 from whooping-cough, 10 from diphtheria, 10 from infantile diarrhœal diseases, 6 from scarlet fever, and 3 from enteric fever, but not one from small-pox. These 82 deaths from the principal epidemic diseases were equal to an annual death-rate of 2·0 per 1000, or 1·0 per 1000 above that recorded in the 94 English towns. The 41 deaths attributed to measles were 7 in excess of the number returned in the previous week, and included 23 in Glasgow, 8 in Aberdeen, and 5 in Edinburgh. Of the 10 fatal cases of diphtheria, 3 were registered in Glasgow, 3 in Edinburgh, and 3 in Aberdeen.

The deaths referred to diseases of the respiratory system in the 18 towns numbered 147, and were 13 in excess of the number in the previous week; and 30 deaths were attributed to different forms of violence.

HEALTH OF IRISH TOWNS.

In the 22 town districts of Ireland, having an estimated population of 1,157,014 persons in the middle of this year, 683 births and 450 deaths were registered during the week ending Jan. 13th. The annual rate of mortality in these towns, which had been 18·0 and 18·6 in the two preceding weeks, further rose to 20·3 per 1000 in the week under notice. During the 13 weeks of the fourth quarter of last year the mean annual rate of mortality in these Irish towns averaged 18·4 per 1000; in the 77 English towns during the same period the mean annual death-rate did not exceed 14·7 per 1000, while in the eight Scotch towns it was equal to 16·9 The annual death-rates last week in the several Irish towns were equal to 20 7 in Dublin (against 14·5 in London), 19·5 in Belfast, 25 2 in Cork, 16 6 in Londonderry, 14·9 in Limerick, and 19·0 in Waterford; while in the 16 smallest of these Irish towns the death-rate was equal to 21·3 per 1000.

The 450 deaths from all causes in the 22 Irish towns were 37 in excess of the number in the previous week, and included 28 which were referred to the principal epidemic diseases, against numbers decreasing from 39 to 29 in the three preceding weeks; of these 28 deaths, 11 resulted from whooping-cough, 5 from measles, 4 from diarrhœal diseases, 3 from diphtheria, 2 from enteric fever, 2 from scarlet fever, and 1 from typhus, but not one from small-pox. These 28 deaths from the principal epidemic diseases were equal to an annual rate of 1·3 per 1000; the death-rate from these diseases last week did not exceed 1·0 in the 94 English towns, while in the 18 Scotch towns it was equal to 2·0 per 1000. The deaths attributed to whooping cough, which had declined from 16 to 4 in the three preceding weeks, rose to 11 last week, and included 6 in Belfast and 3 in Dublin. Of the 5 deaths referred to measles, which were equal to the average in the two preceding weeks, 3 were registered in Dublin. The 4 fatal cases of diarrhœa included 2 of infants under two years of age. The 3 deaths from diphtheria and the 2 fatal cases of scarlet fever occurred in Dublin. The 2 deaths from enteric fever were registered in Dublin and Limerick respectively, and that from typhus in Belfast.

The deaths referred to diseases of the respiratory system, which had been 85 and 99 in the two preceding weeks, further rose to 109 last week. Of the 450 deaths from all causes in the 22 Irish towns, 141, or 31 per cent., were recorded in public institutions, and 11 were attributed to different forms of violence. The causes of 10, or 2·2 per cent., of the total deaths in the week under notice were not certified either by a registered medical practitioner or by a coroner after inquest; in the 94 English towns the proportion of uncertified causes of death last week did not exceed 1·0 per cent.

VITAL STATISTICS OF LONDON DURING DECEMBER, 1911.

IN the accompanying table will be found summarised complete statistics relating to sickness and mortality in the City of London and in each of the metropolitan boroughs. With regard to the notified cases of infectious diseases, it appears that the number of persons reported to be suffering from one or other of the ten diseases specified in the table was equal to an annual rate of 6·3 per 1000 of the population, estimated at 4,522,628 persons in the middle of last year. In the three preceding months the rates were 6·9, 8·5, and 7·8 per 1000 respectively. The lowest rates last month were recorded in Chelsea, Holborn, the City of London, Shoreditch, Stepney, and Southwark; and the highest rates in Hackney, Bethnal Green, Deptford, Greenwich, Lewisham, and Woolwich. The prevalence of scarlet fever again showed a decline last month from that recorded in other recent months; the greatest proportional prevalence of this disease last month was recorded in St. Marylebone, Hackney, Deptford, Greenwich, and Woolwich. The Metropolitan Asylums Hospitals contained 1878 scarlet fever patients at the end of December, against 2152 and 2103 at the end of the two preceding months; the weekly admissions averaged 198, against 261, 317, and 254 in the three preceding months. Diphtheria was much less prevalent than it had been in either of the two preceding months; among the several boroughs the greatest proportional prevalence of this disease last month was recorded in Paddington, Hammersmith, Hampstead, the City of London, Wandsworth, Greenwich, Lewisham, and Woolwich. There were 1294 diphtheria patients under treatment in the Metropolitan Asylums Hospitals at the end of last month, against 1143 and 1327 at the end of the two preceding months; the weekly admissions averaged 141, against 168 and 180 in the two preceding months. The prevalence of enteric fever also showed a marked decrease in December, as compared with that in the first and second months of the quarter; this disease was proportionally most prevalent last month in Paddington, Kensington, the City of Westminster, Bethnal Green, Stepney, Poplar, Bermondsey, and Lewisham. The number of enteric fever patients under treatment in the Metropolitan Asylums Hospitals, which had been 160 and 85 at the end of the two preceding months, had declined to 76 at the end of last month; the weekly admissions averaged 35, against 90 and 46 in the two preceding months. Erysipelas was proportionally most prevalent in Hammersmith, St. Pancras, Hackney, Finsbury, Shoreditch, Bethnal Green, Southwark, Battersea, Deptford, and Greenwich. The 29 cases of puerperal fever notified during the month included 5 in Stepney, 4 in St. Pancras, 3 in Lambeth, and 2 each in Kensington, Fulham, Islington, Hackney, and Battersea. Six cases of cerebro-spinal meningitis and 6 of poliomyelitis were notified during the month.

The mortality statistics in the table relate to the deaths of persons actually belonging to the several boroughs, the deaths occurring in institutions having been distributed among the several boroughs in which the deceased persons had previously resided; the death-rates from all causes are further corrected for variations in the sex- and age-constitution of the populations of the several boroughs. During the four weeks ending Dec. 30th the deaths of 5314 London residents were registered, equal to an annual rate of 16·1 per 1000; in the three preceding months the rates had been 16·8, 15·1, and 14·1 per 1000 respectively. The death-rates last month ranged from 10·8 in Hampstead, 12 9 in Stoke Newington, 13·1 in Wandsworth and in Lewisham, 13·3 in Chelsea, and 13·8 in Woolwich, to 19·3 in Southwark, 19 5 in Shoreditch, 19·7 in Deptford, 20·6 in Finsbury and in the City of London, 22·0 in Greenwich, and 24·0 in Holborn. The 5314 deaths from all causes included 50 from measles, 13 from scarlet fever, 61 from diphtheria, 37 from whooping-cough, 12 from enteric fever, and 63 among children under two years of age from diarrhœa and enteritis. The lowest death-rates from these diseases in the aggregate were recorded in Fulham, Chelsea, the City of Westminster, St. Marylebone, and Woolwich; and the highest rates in Holborn, Shoreditch, Poplar, Southwark, Deptford, and Greenwich. The 50 deaths from measles were only one-third of the corrected average number in the corresponding period of the five preceding years; 15 belonged to Deptford, 12 to Greenwich, 4 to Paddington, 4 to Lambeth, 3 to

ANALYSIS OF SICKNESS AND MORTALITY STATISTICS IN LONDON DURING DECEMBER, 1911.

(Specially compiled for THE LANCET.)

CITIES AND BOROUGHS.	Estimated population in the middle of 1911.	NOTIFIED CASES OF INFECTIOUS DISEASE.												DEATHS FROM PRINCIPAL INFECTIOUS DISEASES.‡									Deaths from all causes.	Death-rate per 1000 living.†
		Small-pox.	Scarlet fever.	Diphtheria.*	Typhus fever.	Enteric fever.	Other continued fevers.	Puerperal fever.	Erysipelas.	Cerebro-spinal meningitis.	Poliomyelitis.	Total.	Annual rate per 1000 persons living.	Small-pox.	Measles.	Scarlet fever.	Diphtheria.*	Whooping-cough.	Enteric fever.	Diarrhœa and enteritis (under 2 years).	Total.	Annual rate per 1000 persons living.		
LONDON	4,522,628	—	902	683	—	69	—	29	481	6	6	2176	6·3	—	50	13	61	37	12	63	236	0·7	5314	16·1
West Districts.																								
Paddington	142,541	—	16	28	—	3	—	1	14	—	—	62	5·7	—	4	—	1	—	—	—	5	0·5	153	14·9
Kensington	172,296	—	22	27	—	4	—	2	14	—	1	70	5·3	—	—	1	2	—	1	2	6	0·5	184	15·0
Hammersmith	121,837	—	23	23	—	2	—	1	16	—	1	66	7·1	—	—	1	2	—	—	2	5	0·5	127	14·2
Fulham	153,726	—	28	27	—	1	—	2	13	—	1	72	6·1	—	—	1	3	—	1	—	5	0·4	162	14·3
Chelsea	66,218	—	9	6	—	—	—	—	4	—	1	20	3·9	—	—	—	—	1	—	1	2	0·4	65	13·3
City of Westminster	159,709	—	29	15	—	5	—	—	13	—	—	62	5·1	—	—	1	1	—	—	—	2	0·2	168	15·4
North Districts.																								
St. Marylebone	117,844	—	39	11	—	—	—	—	11	1	—	62	6·9	—	—	1	—	—	—	1	2	0·2	140	16·5
Hampstead	85,599	—	18	21	—	—	—	—	3	—	—	42	6·4	—	—	—	2	—	—	1	3	0·5	63	10·8
St. Pancras	218,031	—	35	32	—	2	—	4	26	—	1	100	6·0	—	—	—	4	1	—	5	10	0·6	261	16·3
Islington	327,234	—	84	46	—	1	—	2	29	—	—	162	6·5	—	1	1	8	1	—	4	15	0·6	376	15·6
Stoke Newington	50,669	—	11	8	—	1	—	—	2	—	—	22	5·7	—	1	—	—	—	1	—	2	0·5	48	12·9
Hackney	222,674	—	75	38	—	2	—	2	29	—	—	146	8·5	—	—	—	4	1	1	4	10	0·6	286	17·4
Central Districts.																								
Holborn	49,084	—	5	4	—	1	—	—	3	—	—	13	3·5	—	1	—	—	1	1	1	4	1·1	84	24·0
Finsbury	87,639	—	12	13	—	1	—	—	19	—	—	45	6·7	—	—	—	2	—	1	1	4	0·6	134	20·6
City of London	19,475	—	—	4	—	1	—	—	1	—	—	6	4·0	—	—	—	1	—	—	—	1	0·7	28	20·6
East Districts.																								
Shoreditch	111,284	—	13	9	—	1	—	—	13	—	—	36	4·2	—	1	—	4	1	—	3	9	1·1	159	19·5
Bethnal Green	128,247	—	27	23	—	3	—	—	27	—	—	80	8·1	—	2	1	1	—	—	2	6	0·6	145	14·8
Stepney	279,560	—	15	30	—	11	—	5	32	1	—	94	4·4	—	—	1	—	4	1	6	12	0·6	356	17·3
Poplar	162,290	—	20	28	—	7	—	1	19	1	—	76	6·1	—	—	—	4	6	2	1	13	1·0	208	17·2
South Districts.																								
Southwark	191,595	—	23	18	—	1	—	—	25	1	—	68	4·6	—	3	—	3	7	—	2	15	1·0	272	19·3
Bermondsey	125,840	—	20	12	—	5	—	1	8	—	—	46	4·8	—	2	—	1	1	—	2	6	0·6	171	18·1
Lambeth	298,032	—	62	28	—	2	—	3	31	—	—	126	5·5	—	4	1	5	5	—	6	21	0·9	367	16·6
Battersea	167,765	—	41	19	—	—	—	2	20	—	1	83	6·4	—	—	—	1	2	—	6	9	0·7	177	14·8
Wandsworth	313,389	—	77	58	—	6	—	1	21	1	—	164	6·8	—	—	2	1	1	1	7	12	0·5	299	13·1
Camberwell	261,407	—	43	33	—	1	—	1	31	—	—	109	5·4	—	3	1	3	—	—	3	10	0·5	291	15·0
Deptford	109,475	—	38	15	—	1	—	1	22	—	—	77	9·2	—	15	—	2	4	1	2	24	2·9	157	19·7
Greenwich	95,982	—	27	38	—	1	—	—	18	—	—	84	11·4	—	12	1	2	—	1	—	16	2·2	158	22·0
Lewisham	161,677	—	45	44	—	4	—	—	10	—	—	103	8·3	—	1	—	3	1	—	1	6	0·5	156	13·1
Woolwich	121,609	—	45	25	—	2	—	—	6	1	—	79	8·5	—	—	—	1	—	—	—	1	0·1	120	13·8
Port of London	—	—	—	—	—	—	—	—	1	—	—	1	—	—	—	—	—	—	—	—	—	—	—	—

* Including membranous croup. † The death-rates are corrected for variations in sex- and age-constitution of the populations of the several boroughs, the population of England and Wales being taken as the standard. ‡ Deaths from "typhus fever" and "other continued fevers" are not now distinguished in the Registrar-General's weekly returns; these two columns are therefore omitted from the Table.

Southwark, 3 to Camberwell, 2 to Bethnal Green, and 2 to Bermondsey. The 13 fatal cases of scarlet fever were also equal to only one-third of the corrected average number; of these 13 deaths, 2 belonged to Wandsworth and 1 to each of eleven other boroughs. The 61 deaths from diphtheria slightly exceeded the corrected average number, and included 8 in Islington, 5 in Lambeth, and 4 each in St. Pancras, Hackney, Shoreditch, and Poplar. The 37 fatal cases of whooping-cough were 31 fewer than the corrected average number; of these 7 belonged to Southwark, 6 to Poplar, 5 to Lambeth, 4 to Stepney, and 4 to Deptford. The 12 deaths from enteric fever, of which 2 belonged to Poplar, showed a decline of 7 from the corrected average number. The greatest proportional mortality from diarrhœa and enteritis among children under two years of age was recorded last month in St. Pancras, Shoreditch, Stepney, Lambeth, Battersea, and Wandsworth. In conclusion, it may be stated that the aggregate mortality in London last month from the principal infectious diseases (excluding diarrhœa) was nearly 49 per cent. below the average.

THE SERVICES.

Royal Army Medical Corps.

Colonel M. W. Kerin, C B., principal medical officer of the Seventh (Meerut) Division, has joined at Meerut Cantonment from Mussooree. Lieutenant-Colonel C. Birt has been appointed a Member of the Army Medical Advisory Board as Expert in Tropical Diseases, vice Colonel Sir David Bruce. Lieutenant-Colonel M. L. Hearn, senior medical officer, Ceylon, has been selected for the higher rate of pay under Article 317 of the Royal Warrant. Lieutenant-Colonel R. L. R Macleod has arrived home from India on completion of his tour of foreign service. Lieutenant-Colonel S. Westcott, C.M.G., lately commanding the station hospital at Chakrata, has been appointed in charge of the Military Hospital at Edinburgh. Lieutenant-Colonel S. Hickson has arrived home from Wynberg. Lieutenant-Colonel T. B. Winter has taken over charge of the Military Hospital at Colchester and command of No. 9 Company, Royal Army Medical Corps. Lieutenant-Colonel F. J. Morgan has been detailed for duty on board the transport s.s. *Plassy* leaving Bombay for Southamptom on March 13th. Lieutenant-Colonel C. C. Reilly has been placed under orders for a tour of service with the Southern Army in India, and on arrival will be appointed to command the Station Hospital at Colaba.

Major F. S. Irvine has been selected to succeed Brevet-Lieutenant-Colonel A. P. Blenkinsop as Assistant Commandant at the Royal Army Medical College, London. Major A. C. Fox has been ordered to join the Irish Command on Feb. 1st, and on arrival will be appointed to the Dublin District for duty. Major W. Hallaran, from Jhansi, has taken over charge of the Station Hospital at Chakrata. Major G. S. McLoughlin, D.S.O., has been selected to hold charge of the Military Hospital, Golden Hill. Major M. Boyle has been posted to Jersey for duty. Major C. S. Smith, from Mullingar, has been placed under orders to embark for a tour of service in India. Major J. C. Jameson has been appointed in charge of the Surgical Division at the Royal Herbert Hospital, Woolwich. Major C. W. H. Whitestone has been transferred from Cherat to Peshawar as Staff Officer of Medical Mobilisation Stores. Major F. J. W. Porter, D.S.O., has taken up duty at Reading. Major H. B. Fawcus has been taken on the strength of the London District on taking up the appointment of Assistant Professor of Hygiene at the Royal Army Medical College, in succession to Major C. F. Wanhill, placed under orders for a tour of service in India. Major J. M. Cuthbert, from Edinburgh, has taken up duty at Leith. Major J. Cowan has been placed under orders to embark for India on Feb. 29th. Major A. J. MacDougall, from Ceylon, has been appointed for duty in the Belfast District.

Captain H. C. Sidgwick, from Jamaica, has been posted to the London District. Captain R. H. MacNichol has taken up duty at the Royal Herbert Hospital, Woolwich, as Specialist in Dermatology and Venereal Diseases. Captain H. T. Stack, serving at Belfast, has been placed under orders to embark for a tour of service in India. Captain V. T. Carruthers has been placed under orders to join the Cork District on Jan. 19th. Captain O. Ievers, from Wynberg, has been appointed to Dublin for duty. Captain F. E. Rowan-Robinson, from Norwich, has embarked for a tour of service in Bermuda. Captain W. C. Nimmo, in charge of the Cantonment General Hospital at Chakrata, has been detailed for duty on board the transport s.s. *Plassy*, which left Bombay for Southampton on Jan. 11th. Captain H. L. Howell, in charge of the Brigade Research Laboratory at Ahmednagar, has been granted eight months' leave of absence home from India. Captain E. W. Powell, from Aden, has been appointed to Cork district for duty. Captain V. H. Symons, from Bloemfontein, has taken up duty at Belfast. Captain A. H. Jacob has been transferred from the Second (Rawal Pindi) Division to the Third (Lahore) Division. Captain W. Egan, from Rangoon, has been granted eight months' leave of absence, with permission to revert to the Home Establishment on expiration thereof.

Lieutenant H. Gall has been transferred from Simla to Ambala for duty at the Station Hospital. Lieutenant O. W. McSheehy and Lieutenant H. F. Joynt have embarked for a tour of service in South Africa. Lieutenant T. J. Hallinan, from Cork, has taken up duty in the Dublin District. Lieutenant J. Gilmour, from Devonport, has taken up special duty under the Foreign Office.

Indian Medical Service.

Colonel F. C. Reeves has arrived home on leave of absence from India. Colonel H. Hendley, principal medical officer of the Sirhind and Jullundur Brigades, Third (Lahore) Division, has taken up duty at Army Headquarters, Simla, as Deputy Principal Medical Officer, His Majesty's Forces in India. Lieutenant-Colonel J. Penny, Bengal Presidency, has returned to India on completion of his furlough. The services of Major W. E. McKechnie have been placed at the permanent disposal of the Government of the United Provinces. Major D. H. F. Cowan has taken up duty as Civil Surgeon at Shahpur. Major C. R. Pearse has been appointed Civil Surgeon at Maymyo during the absence on special military duty of Lieutenant-Colonel A. O. Evans. The services of Major N. P. O'Gorman Lalor have been placed permanently at the disposal of the Government of Burma for employment in the Civil Medical Department. Major C. B. Prall, superintendent of the Central Prison at Bareilly, has been granted 11 months' leave of absence home from India. Major S. Anderson has been permitted to extend his furlough. Major J. Mulvany, on return from leave, has been appointed Superintendent of the Central Jail at Kalighat, Calcutta. Major C. Hudson has been granted 18 months' furlough home from India.

Captain R. T. Wells, officiating civil surgeon at Dera Ghazi Khan, has been appointed Plague Medical Officer at Rohtak, in succession to Captain S. B. Mehta, whose services have been placed at the disposal of the Government of India, Department of Education. Captain S. H. Lee-Abbott, civil surgeon at Dalhousie, has been selected for appointment as Civil Surgeon at Ferozepore. Captain W. W. Jeudwine, officiating civil surgeon at Multan, has taken up duty as Plague Medical Officer at Rawal Pindi. Captain D. N. Anderson has arrived home on leave of absence from India. Captain J. A. Cruikshank has been appointed to the Bacteriological Department and his services placed temporarily at the disposal of the Madras Government. Captain G. C. L. Kerans has taken up duty as Specialist in Ophthalmology to the Eighth (Lucknow) Division. Captain W. D. A. Keys has been appointed to officiate as Civil Surgeon at Karwar. Captain F. W. Sumner, officiating civil surgeon at Shahjahanpur, has been transferred to Fategarh. Captain G. S. Husband has been attached to the Jail Department in the Punjab. Captain J. C. G. Kunhart has been appointed permanently to the Bacteriological Department.

Lieutenant A. L. Sheppard has been appointed to the medical charge of the 122nd Rajputana Infantry. Lieutenant V. P. Norman has arrived home on leave of absence from India. Lieutenant K. K. Mukerji has been appointed Specialist in the Prevention of Disease at Kohat. Lieutenant J. H. T. Morgan has taken up duty at Cawnpore as Officiating Medical Officer to the 9th Hodson's Horse during the absence of Captain C. W. F. Melville, who is on active service with the Abor expedition on the North-East Frontier.

Scale of Fees for Professional Services by Medical Officers in India.

Revised regulations have been promulgated by the Home Department of the Government of India regarding the scale

of fees for professional services to native chiefs and Indian nobles to be charged by medical officers of Government. The following are the more important clauses :—1. An officer is entitled to demand or receive such fees as may be arranged between himself and the person employing him, provided that he does not without the special permission of the local Government, obtained as provided below, demand or receive in addition to his travelling expenses a higher fee than Rs. 500 (£33 6*s.* 8*d.*) a day for the first three days and Rs. 250 (£16 13*s.* 4*d*) a day thereafter, the full daily fee being given for every complete period of 24 hours' absence with a proportionate fee for periods of less than 24 hours. 2. For similar attendance not involving absence from his headquarters a medical officer may demand or receive fees in accordance with the scale which he has fixed for his patients generally. 3 Before accepting or demanding from a ruling chief or Indians of position as referred to in Rule 1 a fee in excess of the rates laid down in Rules 1 and 2 above, a medical officer must report the case confidentially to the local administrative medical officer, who will obtain unofficially and communicate to him the orders of the local Government. When taking the orders of Government the administrative medical officer will be careful not to disclose any of the medical particulars of the case. 4. Local Governments and administrations shall have full power to dispose of all cases so reported to them, but shall be at liberty to consult the Director-General, Indian Medical Service, or to refer any particular case for the orders of the Government of India. 5. Fees for operations and confinements may be accepted equal in amount to those current in similar circumstances in the profession in the United Kingdom. The above revised rules are stated to cancel the Home Department Notification No. 100, dated Feb. 2nd, 1911.

NAVAL MEDICAL SUPPLEMENTAL FUND.

At the quarterly meeting of the Directors of the Naval Medical Supplemental Fund, held on Jan. 9th, Sir W. Graham Greene, K.C.B , in the chair, the sum of £45 was distributed among the several applicants.

Correspondence.

"Audi alteram partem."

THE MEDICAL PROFESSION AND THE NATIONAL INSURANCE ACT.

To the Editor of THE LANCET.

SIR,—Dr. Lauriston E. Shaw, both in his letter to you and in sundry other letters to the *Times*, makes abundantly clear his personal approval of the National Insurance Act. To him and to the majority of the executive of the British Medical Association this Act appears commendable, and its medical arrangement, after all, not so bad. From those who are of that opinion it is not surprising to have the sort of extenuations and apologies put forward that constantly appear in their letters and speeches. Dr. Shaw cannot agree with Sir Alfred Pearce Gould as to the demerits of "contract practice"; and looking at his reasons it is not probable that it would be possible to prove to him that, nevertheless, Sir Alfred Pearce Gould's view is correct, and held by the great majority of the medical practitioners of the country. The latter are not likely to be converted to Dr. Shaw's opinion by the kind of reasoning he seems to delight in: even if they admit that "this principle of payment"—viz., the payment for work done—is absent from the army, the navy, and even if Cabinet ministers scout the payment by fee. I might even add that if Dr. Shaw were to affirm that he himself, if he had his choice, would prefer to be paid by contract, it would not alter their opinion on this point. It may, no doubt, be said *per contra*, that I, and others like me, to whom this Act does not appear commendable, and who regard its medical proposals as bad as they well could be, on our part attack the Act in the same unscrupulous manner as they defend it. I do not think so. Most of us waited loyally till the Bill became an Act; till it was possible to see how far the executive of the Association was able to modify or remove what was almost universally condemned by the whole profession. But now the Act is an accomplished fact, and it is left to the profession to say whether it is satisfied with what has been done, and to decide—without law breaking—whether it will accept or reject the medical duties offered to it. It seems to me the duty of every practitioner to make up his mind which of the two alternatives he is going to choose. The opponents of this Act may be pessimistic, but they interpret its provisions in their ordinary grammatical sense. Above all, they are not so prone to confound *possibilities* with *probabilities*. No doubt, the loose and slovenly drafting of the Act might justify illimitable possibilities, and might grant the profession terms that all might approve of. Indeed, the Commissioners might make quite another Act of it. Well, let us wait and see! This has been called by some the "policy of doing nothing," the "policy of running away," &c. Let us rather call it the policy of "masterly inactivity," waiting to see what our opponents are going to do. In spite of Dr. J. H. Taylor's terrible warning against letting slip the doles ear-marked to us by the provisions of the Act, even if the present condition of medical practice in this country were prolonged for a considerable time longer, as a general practitioner of some years' standing I cannot help thinking that it would be far better to follow the advice of Sir Alfred Pearce Gould and Sir Clifford Allbutt, and even of Dr. F. J. Smith, than be led away by the optimistic and, in my opinion, misleading generalisations of Dr. Shaw and other favourers of this latest outcome of modern democracy.—I am, Sir, yours faithfully,

Jan. 13th, 1912. MAJOR GREENWOOD.

To the Editor of THE LANCET.

SIR,—It would almost appear ungracious on my part, being myself only a guest and not a member of the British Medical Association, to play the part of critic of the proceedings of the new organisation—the Reform Committee—which it was attempted to launch on the medical world at a meeting held last Tuesday, Jan. 9th, at the Hammersmith Town-hall, yet I would contend that it is not only right, but almost a duty, to watch the progress of, and discuss the effects of, any serious movement by any section of the medical profession which would vitally affect the fortunes and interests of us all, both individually and collectively, as the movement there initiated. I make no apology, therefore, for expressing my impressions as an outsider of the meeting, and of what I imagine will be the result. The old motto, "Audi alteram partem," seemed to form no part of the programme of the meeting, and the noisy and by no means pertinent interruptions which greeted expressions of opinion adverse to the scheme must have disappointed, if not disgusted, many of those who looked on at the proceedings from a comparatively dispassionate point of view.

Now as to the possible results of this new revolutionary venture. How is it going to affect the profession? Is it going to bring us any nearer to the attainment of the six cardinal points on which the profession is practically united? It must be remembered there exists a large body of medical men who have not been, or have ceased from various causes to be, members of the British Medical Association. We have been, for the sake of unity, content to let that body assume, as the largest organised body in the medical profession, the rôle of negotiator or bargainer with Mr. Lloyd George in regard to the demands of the profession. Such meetings as took place last Tuesday cannot but help disillusion us of the wisdom of this step, for the more we hear and know of the history of the bargaining that went on, the more we feel convinced that those whom in our innocence we trusted sold our birthright for the proverbial mess of pottage, the more we feel that the reasonable demands of the profession were sacrificed on the altar of political expediency!

It matters little now that the feeling of betrayal is seizing on the members of the Association, and that they wish to turn and rend those who had the direction of the negotiations—viz., the Council of the Association. What we poor practitioners now want, and vainly hoped would be given at the meeting to which we were invited, was a straight lead how to connect up the broken strands of the negotiation where it was broken by Mr. Lloyd George when he informed the Council that most of our reasonable demands could not be inserted into the Bill. What we want now is not

recriminations, but what is the best course under the circumstance to pursue in order to obtain them, and thus be able in as efficient manner as possible to administer to the sick and poor the medical benefit which the originator of the Bill had in his mind. It may be worth while reminding my readers that Mr. Lloyd George stated as one of the chief attractions of his Insurance Bill that he was offering to the insured "good doctoring without doctors' bills" (and, by the way, without coming to terms with the doctors). Now, to my mind "good" doctoring can only be obtained as the result of mutual confidence between doctor and patient—confidence on the part of the patient that he is receiving the best of attention and skill, confidence on the part of the doctor that he is receiving fair and adequate remuneration for services rendered. No system can possibly be good, or can supply a good article, that does not meet these requirements. The doctors laid down six demands as the minimum with which they would be satisfied; the Bill has been passed and the profession's minimum has not been satisfied. To my mind it is as important to the insured as to the doctors that the bargain should be a complete one; how otherwise are they to expect "good" doctoring?

Now I went to the meeting on Tuesday, as I have before remarked, hoping that some course might be devised by which the demands of the profession might have been satisfied. I wanted bread and was offered a stone. The stone was to turn out the Council of the British Medical Association and attempt to induce Mr. Lloyd George to introduce an amending Bill which would include the unsatisfied demands of the profession. What a chimera! What fatuity! Mr. Lloyd George already sees by such meetings as these that the members of the medical profession are already cutting one another's throats, sees that he has only to wait and watch, and the profession will eventually, like the Kilkenny cats, murder one another, and lie, a victim to suicide, in the hollow of his hand. Distrust, disunion, is playing his game; the want of unity, of solidarity, of cohesion, is playing havoc with any chance we have of united action, and hope deferred of a united profession is making the heart of the poor humble practitioner sick. By such meetings as were held on Tuesday we are not likely to be any "forrader," and recrimination is no remedy. We poor practitioners want unity, unity, and again unity; for union alone makes strength.—I am, Sir, yours faithfully,

RICHARD BEVAN, L.R.C.P. Lond., D.P.H.

Girdlers'-road, Brook Green, Jan. 15th, 1912.

THE MORBID DIATHESES.

To the Editor of THE LANCET.

SIR,—In THE LANCET of Jan. 6th Sir Dyce Duckworth, who honoured me by attending my Bradshaw lecture, writes with his usual courtesy in defence of the Morbid Diatheses, which I maintained were gradually disappearing under modern investigation, that had proved various diseases formerly believed to be of constitutional origin to depend on the inroads of external pathogenetic microbes. I could but feel as I was lecturing that I was treading with elephantine weight on many of his inoffensive pedal digits, and I was, therefore, the more gratified to receive from him a cordial appreciation of my lecture, with many points in which I felt sure he was not in agreement.

In the letter addressed to you Sir Dyce Duckworth states that my views on the medical diatheses, though "rather startling," he had reason to believe were shared by "the younger pathologists and surgeons." In this I am inclined to think he is correct; but he goes on to depreciate, in a manner I never dreamed of, the workers of the past or passing generation. "The older physicians are to be regarded as rather unwise men with feeble powers of observation" is a sentence which there is nothing in my lecture to warrant. On the contrary, I spoke of "the giants in observation" who were misled by a predominant theory. I do not deny the influence of *soil*, but I deny that it is essentially a family product, or that it is of "equal importance" with the *seed*, as Sir Dyce Duckworth terms the invading microbes.

To illustrate my position, I will mention a case that was brought under my notice as recently as Saturday last. The head fettler on a local railway, a very strong man, with a healthy wife and a family of five, left his cottage two or three years ago for a larger one, in which the previous occupant and his sister had died from phthisis. Soon after, his second son, a boy of 15 years, was noticed to be ailing and he is now in an advanced incurable stage of consumption. Thus a family, all of whom were previously healthy, by entering an infected cottage were subjected to a tubercular test which picked out the weakest.

I am, Sir, yours faithfully,

Jan. 16th, 1912. R. CLEMENT LUCAS.

To the Editor of THE LANCET.

SIR,—Amidst the many and complex problems of present-day views of mental and physical disease we are not very much nearer the truth than were our forefathers. Certainly, advancing strides have brought about important changes in the line of treatment, but are these not constantly changing in detail? Everyone has some part of his mental or physical side defective. It is our duty to search out these defects on experimental principles and provide a suitable environment. And if we observe closely the environment of the insane, and not least the feeble-minded, we shall recognise progression. Given any pattern of mind and body a suitable environment can invariably be found. It is interesting to note, too, that institutional care and management of mental cripples is preventive of appendicitis. That is to say, it is a physical disease very rarely seen in asylums. But we have no proof that the cæcum and its appendix, nay, the intestinal tract, is of a superior build among the insane than is to be found outside asylum environment.

I am, Sir, yours faithfully,

Alton, Hants, Jan. 12th 1912. JOHN FREDK BRISCOE.

UNICELLULA CANCRI.

To the Editor of THE LANCET.

SIR,—In the two lectures given by Sir Henry Butlin, and which appeared *in extenso* in THE LANCET of Nov. 25th and Dec. 2nd, 1911, the author leads up to the conclusions that the cancer cell is derived from, and in a general way inherits the morphology of, the cells of the part in which it takes its origin; that the "vital difference" between it and the normal cell is that it will survive if implanted whilst the normal cell will die; that the difference in the conduct of the cells is due to the fact that the cancer cell has become "endowed with the gift of life," which constitutes it an independent creature; that the cancer cell is, in short, a new genus of organism vastly removed, phylogenetically, from the complex creature in which it originates.

Practically all students of the cancer problem are agreed that the cancer cell is derived directly from the normal cell, and the great majority of them are satisfied that no parasitic micro-organism plays any essential part in bringing about the change. The explanation of the difference in behaviour, within the body, of the progeny of the cancer cell and the progeny of the normal cell is, at present, the central problem of malignant disease. That cancer cells will survive and that normal cells will not survive when implanted is a generalisation to which there are so many obvious exceptions that it is improbable that such a peculiarity is the actual "vital difference" between the two sorts of cell. The successful transplantation followed by orderly growth of cutaneous epithelium and certain other tissues, and the phenomenon of the implantation cyst, prove that normal cells may survive if transplanted. The constant distinction between normal and malignant cells does not appear to be one of structure, composition, or metabolic activity, but rather one of conduct with respect to environment. The progeny of normal epithelial cells will divide and progress only in a direction away from the connective tissues; the progeny of carcinomatous cells are indifferent as to the direction in which they multiply.

That epithelial tissues are normally restrained and directed in their growth by purely physico-chemical processes has not been proved, yet the anticipation that it will be so proved seems to have engendered in many minds the belief that such is actually the case. This premature conclusion has distracted our attention from the otherwise obvious fact that in every living cell we encounter the incomprehensible phenomena of life and instinct. All the phenomena of the cosmos are not comprised within the domains of the physical sciences.

In my essay on Light, Pigmentation, and New Growth

(July, 1909) I postulated the existence in every normal cell capable of reproducing itself by fission of a psychic element akin to instinct. I opined that it is this element which controls and directs the behaviour of the cell in accordance with the particular "traditions" of its genus; and I gave reasons for my suggestion that the abnormal conduct of cancer cells with respect to their environment is due to an impairment or loss of this psychic principle. It certainly seems more probable that malignant disease is due to the loss of some controlling influence rather than to the accession of a quality novel and little short of supernatural in its character. I say little short of supernatural because it is against the order of nature that a new genus of unicellular animals should be repeatedly springing into existence and that the same genus should on every occasion be entirely exterminated. I am, Sir, yours faithfully,

WILFRED WATKINS-PITCHFORD, M.D. Lond., F.R.C.S. Eng.

The Government Laboratory, Johannesburg, Dec. 24th, 1911.

A PRESCRIPTION FOR COLITIS.

To the Editor of THE LANCET.

SIR,—Although I am not now in practice perhaps you will permit me to offer the profession through your courtesy a piece of therapeutic information that I have gained.

Many years ago I had a patient whom I generally attended on a midnight summons, suffering from abdominal pain, vomiting, and constipation. There was a history of diffuse peritonitis in childhood, and my diagnosis was a peritoneal adhesion which became inflamed by diet, chill, &c. I sent him to a distinguished surgeon, who said that he undoubtedly had appendicitis, and proposed an operation. This, however, the patient would not submit to.

In this case, of course, careful attention had to be bestowed upon the action of the bowels, and I tried many laxatives with more or less success. It finally struck me that a local emollient would be an excellent treatment and I wrote the following prescription:—

℞ P. gum. acaciæ ℥iv.
Syr. cascaræ sag. ℥ii.
Terrol. ℥ii.
Ft. pasta. ℥ii.

This kept my friend for ten years perfectly comfortable; he ceased taking it about one year ago as he does not now require any treatment. It was known as "Falkiner's table varnish" among our inner circle.

The other day I saw an old patient and friend of mine who is the widow of a distinguished London surgeon whom I conceived to be suffering from colitis, and sent the prescription to her, and being a great sufferer myself from the latter complaint when asking the chemist to send the copy of the prescription ordered a bottle for myself. I have only been using it for three days, but I have almost complete ease from the wearying sensation of colitis, which is so exhausting physically and mentally, and I also find that the hydrocarbon acts as a powerful intestinal disinfectant and deodoriser, and that it reduces the production of gases. Trusting that my experience may be of utility and enable many of my professional brothers to give relief in troublesome cases,

I am, Sir, yours faithfully,

Dublin, Jan. 10th, 1912. NINIAN M. FALKINER.

THE ACTION OF RADIUM ON MALIGNANT GROWTHS.

To the Editor of THE LANCET.

SIR,—My attention has been drawn to a letter which appeared in THE LANCET of Jan. 6th under the above title by Dr. F. L. de Verteuil, Surgeon, R.N. (retired), who, in referring to the different theories that have been advanced on the essential therapeutics of such radio-active agencies as radium and the X rays, ascribes priority in regard to one of them to Mr. Deane Butcher—namely, that of the induction of auto-vaccination by the X rays, as revealed by a series of independent estimations of the opsonic index against the particular pathogenic micro-organism concerned in those infectious maladies in which the lymphatic glands become involved. As Dr. de Verteuil is, in this respect, under a slight misapprehension, I beg leave to refer him to a contribution made by me to THE LANCET in 1907 (Vol. I., p. 215), as well as to the *Archives of the Roentgen Ray* for June, 1910, p. 2, where Mr. Deane Butcher urges a plea for the pressing requirement of a continuance and repetition of the line of research previously adopted by me.

I find that, up to date, my observations and experiments in the afebrile types of tuberculosis have been repeated independently by Dr. Lawrence and Dr. Crane, of the United States, both of whom corroborated and confirmed them. Also by Messrs. Paoli and Nuncioni, of Italy, who applied the X rays to the lymphatic glands involved in primary syphilis, confirming my views. In this country this fascinating research has been neglected, partly because radiologists or radiographers are more concerned with the electro-mechanics of apparatus construction, and the getting of mere results, than they are with pathology or clinical medicine. The loose and unscientific use of the term "vaccination" in the above reference is, in my opinion, calculated to give offence to the intelligence of both pathologists and clinicians.

Surely the term "vaccination," in its modern acceptation, connotes the introduction into the human organism of a certain number of killed and sterilised pathogenic micro-organisms, which specifically pertain to a particular malady, for the purpose of producing an increased resisting power against that particular micro-organism by evoking one or more precise physiological reactions in place of the pathological reactions, manifestations of which exist at the site of the lesion and in the system. By the term "auto-vaccination" it was intended to connote the further development or completion of the physiological process, consequent upon an infection, in conformity with the protective mechanisms of the organism, it being recognised that a pathological manifestation resulted from an incoördination in the chain of processes taking place during a reaction.

To speak of the X rays causing a "vaccination" or of "producing antitoxins" by stimulating leucocytes, can never appeal to the pathologist, and at the meeting of the annual congress of the British Medical Association held at the Imperial Institute, 1910, I felt obliged to make a gentle protest in this reference. On that occasion an instructive paper was read by Dr. W. S. Lazarus-Barlow, entitled "Radiation and Biological Processes; with Some Reference to the Skotographic Action of Animal Tissue." Dr. Lazarus-Barlow is, above all other things, a pathologist, and his observations are highly interesting as regards those minute finer changes in protoplasm which are more of a molecular nature than of a mere chemical change. I would recommend this paper and its study to Dr. de Verteuil, who seems to be attracted by the tertiary grosser changes of the tissues. These finer changes are far beyond the power of any microscope to reveal. I am, Sir, yours faithfully,

Wimpole-street, W., Jan. 9th, 1912. H. D. MCCULLOCH.

LOCAL REACTION IN TUBERCULIN TREATMENT.

To the Editor of THE LANCET.

SIR,—In THE LANCET of Dec. 30th, 1911, Dr. E. E. Prest contributes a letter on Some Points in the Treatment of Pulmonary Tuberculosis. Dr. Prest states he noticed "that cases in which there is a well-marked local reaction to an injection of tuberculin have relatively a favourable prognosis."

With reference to this statement, it is noteworthy that as long ago as 1897 Dr. Carl Spengler, of Davos, emphasised the high importance of local reactions in the administration of tuberculin. He showed that the bactericidal action, indirectly induced by tuberculin, varies with the intensity of the local reactions. Further, from his extensive researches he pointed out that the intensity of the local reaction at the seat of injection corresponds with the intensity of the local reaction at the foci of disease. (See Carl Spengler's article, "Über Tuberkulinbehandlung," published in 1897 by F. Schuler, Chur.) Obviously, the intensity of the local reactions must be carefully regulated.

When Carl Spengler in 1904 introduced the use of tuberculin derived from bovine tubercle bacilli, the importance of local reactions became even more evident. Without attention to these the wrong kind of tuberculin must often be used. Of course many cases are unsuitable for tuberculin

treatment, but those that are suitable should be treated correctly.

Although it is true that Dr. Spengler now uses his "Immune Substances (I.K) Treatment" in preference to tuberculin, because, in his opinion, the treatment when used correctly gives better results than tuberculin treatment, yet in these days, when tuberculin is so much discussed, it seems important that Spengler's work on the subject should be carefully studied.—I am, Sir, yours faithfully,

H. WM. GODFREY, M.B. Aberd.

Frinton-on-Sea, Jan. 16th, 1912.

THE MEETING OF THE CANADIAN PUBLIC HEALTH ASSOCIATION IN MONTREAL.

(FROM OUR SPECIAL CORRESPONDENT.)

(Concluded from p. 126.)

PERHAPS the most important, as well as the most genuinely interesting, of all the meetings was that of the second general session, when a symposium on Town-planning and Housing was held.

Town Planning and Housing.

Dr. CHAS. A. HODGETTS (Ottawa), medical adviser to the Commission on Conservation, read the first paper, which dealt with town-planning and housing. Dr. Hodgetts was by no means complimentary to the manner in which most of the towns of Canada are planned or built. He said that the lumber town of 40 years ago was still a lumber town. It had not risen to a realisation of its importance or to the dignity of its position as the Federal capital of a great and growing nation. He also adversely criticised the planning and housing facilities of Montreal.

Dr. J. E. LABERGE, assistant city medical health officer of Montreal, discussed the matter from the hygienic standpoint.

Dr. CHAS. J. C. O. HASTINGS, medical officer of health of Toronto, read a paper on housing problems in which he described the insanitary conditions existing in the slum districts of New York, Milwaukee, and Toronto. He pointed out that Toronto had its slums, and it was of no avail to attempt to disguise the fact. They must wake up, as other cities were waking up, to prevailing conditions and not live in a "fool's paradise." In Toronto, he said, there were 919 families living under distinctly insanitary conditions, some only in one-room tenements or in cellars. Tenement houses he declared to be nothing more or less than mere human "packing houses," and he concluded by urging the securing of transport facilities to districts on the outside of cities, where people could be properly housed in individual homes in beautiful garden cities.

Mr. W. D. LIGHTALL, K.C., spoke on the subject of Re-housing in Canada, and severely censured the apathetic attitude of municipalities and citizens towards the disgraceful conditions with regard to housing that prevail in many cities of Canada.

Ventilation of Private Houses.

In the Section of Sanitary Engineers and Architects among several papers of interest read was one by Mr. T. W. LUDLOW, Professor of Architecture, McGill University, on Natural Ventilation Applied to Private Houses. Professor Ludlow said that it was no unusual thing in Montreal and elsewhere in Canada to find the houses sealed against all possible ventilation by double windows screwed tightly to the inner sash. The so-called ventilating devices were worse than useless, especially when they were carefully covered over with strips of paper. Since the advent of the radiator-heating system ventilation had become a negligible quantity in dwellings owing to the absence of the old-fashioned open fire-place with a chimney for each room.

Conditions in Canadian Cities.

In the same section Mr. RAWSON GARDNER, President of the Architects' Association of Montreal, discussed conditions existing or arising in Canadian cities. Mr. Gardner said that the invasion of Canada by such a multitude of foreigners tended to create congestion and slums, a tendency that was augmented by the cold winters experienced in Canada. But light and air were a *sine quâ non* for each individual. He suggested that houses should be built around four sides of a block, with an inner courtyard for a playground and for flowers. He also thought that there should be a beautiful driveway extending along the bank of the St. Lawrence, from the rapids to the Victoria Bridge, connecting with the proposed boulevard along the aqueduct, and this in turn should be linked with the Mount Royal Park Boulevard. There was no necessity for any shack town on the edges of the city, and he looked forward to the establishment of garden cities about Montreal similar to those in England and Germany.

Biological Sewage Disposal.

The last general session of the meeting was the most instructive from a scientific standpoint, being devoted to a symposium on Biological Sewage Disposal.

Dr. P. H. BRYCE (Ottawa), chief medical officer of the Department of the Interior, dealt with the physical and economic aspects of biological sewage disposal.

Mr. T. AIRD MURRAY (Toronto), in treating of the engineering problems involved in biological methods of sewage disposal, described the mode of sewage disposal designed by himself at Lethbridge in order to secure the maximum removal of suspended solids, and said that the most that had been done was to secure an effluent that could easily and economically be rendered non-pathogenic.

Dr. J. A. AMYOT, Professor of Hygiene at Toronto University, discussed the bacterial problems involved in biological methods of sewage disposal. He said that two methods were ordinarily employed for this purpose, the anaerobic and the oxidation, of which the oxidation method was by far more satisfactory, but even with it it was utterly impossible to secure any system in the results. The engineer must decide the exact way in which the system should be worked. Dr. Amyot said that slow sand filtration was not enough to depend on. Disinfection also must be employed.

Dr. G. G. NASMYTH (Toronto) read a paper on the Chemical Principles of Sewage Disposal Methods. He said he believed that the trickling filter system from the point of view of economy and success had come to stay, as this system was in line with the methods of nature.

Election of Officers.—Success of the Meeting.

The new officers elected are as follows: President, Dr. C. A. Hodgetts (Ottawa); Vice-Presidents, Dr. M. M. Seymour (Regina, Saskatchewan), Dr. J. W. S. McCullough (Toronto), Dr. E. Bayard Fisher (Fredericton); general secretary, Major Lorne Drum (Ottawa); treasurer, Dr. G. D. Porter (Toronto). As before, the Executive Council is composed of eminent health officers from every part of the Dominion. The next place of meeting will be Toronto.

The Public Health Association has begun in most favourable circumstances and its future success seems to be assured. From scientific, practical, and social view-points this meeting was successful in a high degree, largely owing to the forethought and energy displayed by its late President, Dr. Starkey, and by the general secretary, Major Lorne Drum, and to the fact that His Royal Highness the Governor-General took such a keen interest in the proceedings from beginning to end. As an example of the concern for the success of the meeting, His Royal Highness on the morning of Dec. 14th paid an informal visit to the medical building of the McGill University, in which the meetings of the sections were held, by the courtesy of the Dean and Faculty of the University, and visited all the sections. It may also be said that membership of the Canadian Public Health Association is not confined to medical men: members of the laity are welcomed, as it is recognised that for such an association to do efficient work it must have the intelligent coöperation of the community at large.

LONDON (ROYAL FREE HOSPITAL) SCHOOL OF MEDICINE FOR WOMEN (UNIVERSITY OF LONDON).—The council has appointed Dr. Frederick Ransom internal examiner in pharmacology for the University of Cambridge, late assistant to Professor Behring and Professor Hans Meyer, to be lecturer and head of the Department of Pharmacology.—The examination for entrance scholarships will be held on May 28th and two days following. Forms of entrance and all particulars can be obtained on application to the secretary and warden.

MANCHESTER.

(FROM OUR OWN CORRESPONDENT.)

Appeal of the Royal Infirmary against Assessment of its Glanydon Premises.

THE board of management of the Royal Infirmary has appealed against the assessment by the Conway Union regarding Glanydon Convalescent House. The case was heard at the Denbighshire Quarter Sessions at Ruthin and judgment was delivered on Jan. 6th. There were two lots of premises concerned in the appeal—those of Old Glanydon and those of New Glanydon. As regards Old Glanydon, these were originally assessed at £230 gross and £184 net, but these figures were afterwards reduced by the assessment committee to £200 and £160. On this part of their case the appellants failed. In the case of New Glanydon, there was, said the chairman, an important principle in question. The respondents contended that the cost of construction must be the measure by which the amount of assessment should be arrived at. The court was unable to adopt that view. It was quite impossible to apply the principle universally. There had been extra cost in order not to destroy the amenities of the locality. In other cases considerable expenditure had been incurred in buildings of this kind in order to conform with local by-laws. The appellants' case was that the original cost of construction must be entirely left out and that the court was only concerned with what rent a hypothetical tenant would be willing to pay for the premises. The court, again, could not adopt that view. They took, however, the original cost of the premises as a starting point, and with the other evidence to guide them endeavoured to arrive at a fair and reasonable assessment. The appellants succeeded and the assessment was reduced from £800 gross to £545, and from £640 net to £436. The court also decided that the respondents must pay the appellents' costs in the appeal, excluding such costs as related solely to Old Glanydon.

The Need for School Clinics.

Attempts are being made around Manchester to arouse interest in the question of the need for school clinics. At a meeting of the Women's Labour League recently held in Middleton a resolution was passed calling upon the Government to set aside a grant of £1,000,000 for the establishment of school clinics.

Charitable Bequests amounting to £26,000.

The late Mr. James Wilcock, of Blackburn, the chairman of the Refuge Assurance Committee, who died a few days ago, left £26,050 to charities as follows: Endowment fund of Blackburn branch of the new Charity Organisation Society, £5000; Imperial Cancer Research Fund (to which he gave £1000 in his lifetime), £4000; Blackburn and East Lancashire Infirmary, £2000; Blackburn Orphanage, £2000; Edgworth Home for Children, £2000; Blackburn and District Nursing Association, £2000; Müller's Orphanage, Bristol, £2000; Blackburn Ragged School, £1000; and lesser sums to a large number of other deserving charities.

Workmen's Compensation: Dependency of Fathers and Brothers: Important Case.

Judge Mellor, K.C., in the Manchester county court on Jan. 12th, gave an important decision on a somewhat novel case under the Workmen's Compensation Act. A painter, resident at Withington, while working on a ladder was thrown to the ground through the ladder slipping. His skull was fractured and he died immediately. Under this Act his father, mother, and five brothers and sisters all sought compensation from the employer on the ground that they had been partially dependent upon the earnings of the deceased. Of the 3 guineas that constituted the total income of the family per week, the deceased contributed regularly £1. It was contended that as the father was 54 years of age, and could not get work so readily, the family was really more dependent on the deceased than upon the father. It appears that a decision given by the Scottish courts held that those members of a family who were not working must be regarded as dependent on those who did earn wages, and it was therefore contended that in this case the father and some of the children were not legally entitled to compensation. The judge said that the question of total or partial dependency was a matter of fact and not of law. Each case had to be decided entirely on its own merits. He found that there was partial dependency in the case of each claimant, and assessed the compensation at £80, with costs on the higher (B) scale.

Prosecution under the Post Office Act: Improper Circulars.

An important prosecution under the Post Office Act was brought before the Manchester city stipendiary on Jan. 11th, when a young married couple who lived at Bugsworth, Derbyshire, were charged with sending an indecent print through the post on Dec. 21st. Mr. Pearce, who prosecuted on behalf of the Public Prosecutor, said it was alleged that the accused had sent through the post a circular relating to a certain article. The circular he handed to the bench. It was not alleged by the prosecution that there was anything indecent in regard to the mere selling of the article; the prosecution was taken because the circular, which was sent out broadcast, was in its terms improper. The method of conducting the business was an undesirable one. It was alleged that to get in touch with the persons to whom the articles were to be submitted the accused searched for announcements of engagements, and in addition for announcements of births. The allegation was that they sent to the two persons named in the announcements either a letter or one of the circulars produced. For the defence it was not denied that the communications had been sent through the post by the defendants, but it was contended that the circular was not improper. The stipendiary magistrate imposed a fine of £20 and 10 guineas costs on the male defendant, and £10 without costs on the female defendant, and in doing so he said the public ought to be protected from having their breakfast tables contaminated in the way described. He was satisfied that the defendants had been sending out the circulars, uninvited, to unmarried men and women. He had no power to send defendants to prison, though he was not at all sure that prison was not the proper penalty for an offence of that kind.

Jan. 16th.

LIVERPOOL.

(FROM OUR OWN CORRESPONDENT.)

Hospital Sunday in Liverpool.

ON Sunday, Jan. 14th, the collections in the various places of worship on behalf of the Hospital Sunday Fund took place. The weather, as in the past few years, was most unpropitious, wet and fog prevailing. The result was very disappointing, nearly all the collections showing a marked decrease. The Ullet-road Unitarian Church heads the list with a total of £575, as against £687 last year. Sefton Park Presbyterian Church comes second with £358, compared with £528 last year. Decreases all round were unfortunately experienced. The problem which confronts the Hospital Sunday Committee arises from the fact that, whilst the requirements of the hospitals are ever increasing, the annual church collections appear to be gradually shrinking. At all events, this has been the case during the last four years. This year an innovation has been made in the mode of collection. Some 6000 small "Red Cross envelopes" have been issued to facilitate the receipt of contributions from those who were sick or who for other reasons were unable to attend the churches on the day of collection. The result of this new arrangement may improve matters somewhat; at least, the committee has hopes of an improvement later, when the envelopes are returned.

Death of Mr. James Taylor, F.R.C.S.

The death occurred of Mr. James Taylor, of Chester, on Jan. 14th, at the age of 72 years. The deceased was highly esteemed in Chester, where he had been in practice since the "seventies." He was formerly honorary surgeon to the Chester General Infirmary, and held many honorary offices in connexion with his profession. He was an ex-President of the Lancashire and Cheshire Branch of the British Medical Association, and also held honorary offices in connexion with the North of England Obstetrical and Gynæcological Society. He obtained the Fellowship of the Royal College of Surgeons of England in 1882. He was also a justice of the peace for the city of Chester, of which he was a prominent citizen. The funeral took place on

Wednesday at Chester Cemetery, the first part of the service being held at St. John's Church. It was characteristic of his thought for others that on the morning of the day of his death he expressed the wish that if the day of his funeral should be cold or wet any friends who stood round the grave-side should be told to keep their hats on.

Jan. 16th.

BRISTOL AND THE WESTERN COUNTIES.

(FROM OUR OWN CORRESPONDENTS.)

University Colston Society, Bristol.

THE thirteenth annual dinner, presided over by Sir Isambard Owen, Vice-Chancellor, took place on Jan. 15th in the large hall of the University. The chairman, in proposing "The Pious Memory of Edward Colston," said that the support of research, a task which the society has lately adopted as its chief *raison d'être*, would have commended itself highly to Colston, for research was the very life of a modern university. He said that if the relative narrowness of the available funds were considered, the output of research in Britain was very satisfactory, and the amount of original work being done in Bristol equally so. The treasurer announced that the amount collected during the year was £450. The toast of "The Guest," proposed by Mr. Cyril Norwood, headmaster of Bristol Grammar School, called forth a most interesting speech in reply from Sir A. T. Quiller-Couch. He said he would consider only that side of the University life on which he could speak with knowledge—the romantic side. The University had its charter; let it add one syllable to this, and acquire a character—something to mark off Bristol by itself among the nations. To achieve this a wide outlook was necessary. They must be in line with the general culture of Europe. The formation of hostels, where students might meet to discuss beliefs and disbeliefs, would encourage this diffusion of thought. He said that Bristol had one great asset as a seat of learning—its spirit of romance. He spoke of Bristol as the most romantic city in England, next to Oxford and, perhaps, Cambridge. But antiquity was not the whole secret. They must attract youth, and encourage the free and joyful spirit of youth. Professor Lloyd Morgan, who followed with the toast of "The City of Bristol," made an interesting allusion to the neighbouring Druidical circle at Stanton Drew as a proof that Bristol was a very ancient seat of learning. Mr. Palliser Martin, president of the Chamber of Commerce, pleaded for the establishment of a faculty of commerce; and the Right Hon. Henry Hobhouse, Pro-Chancellor, spoke of the urgent need of encouragement for research in agriculture, such as Bristol University has undertaken, quoting from a letter by Sir William Ramsay in support of his plea. Mr. Hobhouse made the important statement that the Board of Agriculture had undertaken to provide the University with a capital sum of £5000 and an annual income of £3500 to build and endow a department of agriculture, provided a capital sum of £5000 was raised locally. The new president, Mr. Henry H. Wills, was introduced to the chair, and the proceedings came to an end.

Bristol Dispensary.

At the annual meeting of the Bristol Dispensary held recently at the central premises of the institution, an increase of work was recorded, the total number of new patients during 1911 being 13,086, an advance of 1412 on 1910. The midwifery notes, of which 728 were used, also showed an increase of 40 over the preceding year. Medical aid had been necessary in 40 confinement cases. The number of subscribers was larger by a considerable margin than in previous years, and this, together with an increase in the sale of notes and several substantial legacies and donations, has placed the dispensary in a satisfactory financial position. Mr. Fenwick Richards, the chairman, in commenting on the secretary's report, said that some falling off in the subscription list would be almost inevitable in 1912, owing to the introduction of the Insurance Act.

Bristol Medical Charities.

During 1911 the employees of Messrs. J. S. Fry and Sons collected £703 for the various medical charities of Bristol. The employees of Messrs. W. D. and H. O. Wills's branch of the Imperial Tobacco Company, Limited, at Bedminster, during 1911 collected £785 for the Bristol medical charities.

Sanitary Inspectors' Association.

A meeting of the South-Western branch of the Sanitary Inspectors' Association was held at the Guildhall, Bristol, on Jan. 13th. There was a good attendance. Mr. T. J. Crofts read a paper on Public Administration and its Problems. Mr. G. H. Gibson, in a paper on Housing and Overcrowding in the Smaller Districts, stated that the evils of overcrowding are as acute and far-reaching in smaller districts as they are in the slums of the great cities.

The Proposed Memorial Hospital to the late Sir Charles Dilke.

A meeting was recently held at Cinderford in connexion with the proposed memorial hospital to the late Sir Charles Dilke, and a subcommittee was appointed to prepare a practical scheme. Since then an admirer of the deceased baronet, who is anxious that the original proposal of a hospital should be carried out, has offered to defray half the cost of the erection of such an institution provided that the other half is raised by subscription. This practically settles the form that the memorial should take. About £1500 have been already subscribed, and as there has long been a desire locally for the provision of a general hospital in the Forest of Dean, there is no doubt but that the necessary sum will soon be obtained.

Refusal to Form an Insurance Panel.

At a meeting held under the auspices of the South-Western Branch of the British Medical Association at Exeter on Jan. 11th, attended by nearly 100 members of the medical profession practising in Devon and Cornwall, it was unanimously resolved to refuse to form a panel under the Insurance Act unless the six cardinal points are guaranteed by the Insurance Commissioners.

Proposed Crèche for Plymouth.

At a meeting convened last week by the Mayor and Mayoress of Plymouth it was decided to formulate a scheme for the installation of a day-nursery where poor mothers could leave their children when they went out to work. A provisional committee was appointed, and about £200 were contributed for the object.

The Question of Free Medical Treatment of School Children.

At the last meeting of the Salisbury Education Committee it was suggested that a "full-time" medical officer should be employed to treat the school children at the public expense. The vice-chairman, in reply, stated that in Salisbury there had been formed "care committees," and when a child was reported by the school medical officer to be in bad health steps were taken to impress on the parents the desirability of providing medical treatment. The results obtained had been most satisfactory, and the proposed appointment was unnecessary. The vice-chairman added that neither the Wilts County Committee nor the Salisbury Education Committee had as yet decided to provide free treatment for ailments reported upon in the course of medical inspection.

Whole-time Medical Appointments.

At a meeting of the St. Austell (Cornwall) board of guardians, held on Jan. 12th, much discussion took place over the recommendation from the general purposes committee and the district council that a whole-time medical officer should be appointed to perform the duties of medical officer to the workhouse and scattered homes, medical officer for the seventh district, and medical officer of health for the St. Austell urban and rural districts. The proposed appointment was to be for three years, at a salary of £400 per annum, exclusive of travelling expenses and drugs. Eventually it was decided to adjourn the question. The clerk stated that the Local Government Board was in favour of the appointment of a medical officer of health who was not engaged in private practice.

Death of Mr. Francis William Stowe Wicksteed, M.R.C.S. Eng., L.S.A.

Mr. Francis W. S. Wicksteed died at 3, Royal-terrace, Weston-super-Mare, on Jan. 8th, in his 71st year, from pneumonia, after a short illness. Mr. Wicksteed was the son of the late Mr. Henry Wicksteed, of Maidstone, and received his medical education at St. Bartholomew's Hospital, London, qualifying as M.R.C.S. Eng. and L.S.A. in 1863.

He went to Weston-super-Mare and was for some time in partnership with the late Dr. E. Martin. He had an extensive practice there and was extremely popular, being always a generous supporter of any movement for improvement. He was the first to promote a fine art exhibition in the town. Mr. Wicksteed was formerly consulting surgeon to the local hospital and was at one time the representative of the ratepayers on the old board of town commissioners. He was also an ardent Freemason and a large subscriber to Masonic charities. A good sportsman, he was in his earlier days a follower of the foxhounds. He was one of the first officers of the Royal Naval Reserve to be accepted for service at the front during the Boer war, but a serious attack of pneumonia prevented him from going to South Africa. Mr. Wicksteed retired from practice about 17 years ago and went to live in London, but he never lost interest in Weston-super-Mare, and visited the town frequently. Only a few days before his death he was at the banquet marking the installation of Dr. H. S. Ballance as Worshipful Master of St. Kew Lodge of Freemasons. Much sympathy is felt at Weston-super-Mare for his widow and five children. The funeral took place at Weston-super-Mare on Jan. 12th, the majority of the local members of the medical profession being present.

Jan. 16th.

SCOTLAND.

(FROM OUR OWN CORRESPONDENTS.)

The National Insurance Act: the Scottish Central Committee.

IT is hoped that there will soon be a conference between representatives of the medical corporations, representatives of the Universities, and representatives of the Scottish Committee of the British Medical Association, the object being that some common line of policy for the medical profession may be recommended for adoption. I understand that the conference may take place on Saturday next, and that its general object will be, as already stated in these columns, to form a Central Committee to deal with the Act in Scotland. For this purpose the Scottish Committee of the British Medical Association has been given autonomy.

Food Adulteration.

The annual report of the analytical chemist of the corporation of Glasgow has just been issued, and contains much that is interesting from the public point of view. Dealing with the Sale of Food and Drugs Act some commendable suggestions are made in the report. It is stated that owing to the new and ingenious methods of food manipulation that are constantly coming to light the task of the conscientious analyst is one of ever-increasing difficulty. In the United States, the British Colonies, and continental countries an authoritative opinion is soon obtainable as to new methods of food manipulation and the procedure to be followed, but this is not the case in Great Britain. During the *régime* of the present President of the Local Government Board a more enlightened policy was inaugurated, resulting in the publication of exhaustive and instructive reports, many of which suggested permissible limits for foreign matter in certain classes of foodstuffs. Unfortunately these recommendations were rendered ineffective because they lacked the official imprimatur either of the Government or the Local Government Board, and consequently in the law courts were regarded only as an expression of opinion. What is urgently needed, according to the report, is to establish a board of reference, thoroughly representative of the scientific and commercial interests involved, whose decisions should, after due notice, become law. This procedure was recommended by a Select Committee on Food Adulteration as far back as 1896, and has been endorsed and advocated time and again by all classes of the community interested in this important question. Apart altogether from the uniformity in procedure which would result from the establishment of such a board, an inestimable advantage would be the early notification of new forms of adulteration, which, under existing conditions, are often in operation a considerable time before their presence is even suspected by the analyst, much less detected.

Royal Samaritan Hospital for Women, Glasgow.

Last week new buildings in connexion with this hospital were opened by the Hon. Elsie Corbett, daughter of Lord Rowallan, chairman of the governing body. The new buildings consist of a heating and power adjunct and a laundry. Lord Rowallan, who presided, stated that the new buildings, which cost £5000, had been opened free of debt through the kindness of friends. The directors are asking for £10,000 for further necessary extension of the hospital, including a pathological laboratory.

Insanity Statistics in Glasgow.

According to the report of Mr. John Carswell, certifying physician in lunacy to Glasgow parish council, during the past year there were certified as insane in the city 330 males and 293 females. Only in the year 1907, when 332 males were certified, has this number of males been exceeded, while the number of females is the highest on record. Of the total, however, there were 179 who had previously been under certificate. This means that 444 were certified for the first time, and this gives the true estimate of the occurrence of insanity. This number is very slightly over the number for the past three years. The proportion per 100,000 of the population is 76 9, which is the highest recorded, though it has varied but slightly since 1907, when it was 73·6. Investigations into the question of age show that the occurrence of insanity between 15 and 45 is not increasing, whereas at ages over 45 it shows a tendency to increase.

Gray's Hospital, Elgin.

About a year ago Lord Mount Stephen promised a donation of £5000 to the Gray's Hospital, Elgin, on condition that a like sum was collected by the hospital trustees. Up to date £3434 19*s.* 8*d.* of this sum have been subscribed.

Medical Inspection of School Children in Banffshire.

At a meeting of the secondary education committee of the County of Banff, held in Banff on Jan. 15th, Dr. Alexander Grant was appointed medical inspector of school children for the county.

Aberdeen Royal Infirmary: Hospital Sunday Collections.

The annual church collections on behalf of the Aberdeen Royal Infirmary were made on Jan. 7th in most of the churches in Aberdeen. The total amount collected was over £820. The sum collected in the Established churches amounted to very nearly £400 and in the United Free churches to nearly £350. A few churches have not as yet sent in their returns and in several churches the collection was not taken. So far as results go, they appear to be very much on a level with those of last year.

Aberdeen Royal Infirmary and Asylum Managers.

A statutory joint meeting of the Aberdeen Royal Infirmary and Royal Asylum Boards was held on Jan. 12th. The clerk read a summary showing that in the course of the past year 27 life managers had died and 92 had been admitted. The roll for the current year consists of 32 managers (*ex-officiis*), 933 life managers, 36 nominees of congregations, 20 nominees of employees in public works, &c., 59 nominees of districts and parishes, 10 nominees of presbyteries, &c., 61 annual subscribers (exclusive of those who are life managers), making the total membership of the corporation 1151.

Death of the Matron of Aberdeen Royal Infirmary.

The death took place on Jan. 6th of Miss Grace Macnaughton, matron of the Aberdeen Royal Infirmary. Miss Macnaughton was born in Crieff and received her training as a nurse at the Edinburgh Royal Infirmary. For a time she acted as sister in the ward of Professor W. S. Greenfield. In April, 1898, she was appointed matron of the Aberdeen Royal Infirmary, and the duties of that office she faithfully discharged until within a short time of her death. The funeral took place on Jan. 10th.

Jan. 16th.

GUARDIANS AND DISTRICT MEDICAL OFFICERS.—The Horiton (Devon) board of guardians at a recent meeting discussed some alleged complaint against one of their district medical officers, when one of the members is reported to have said: "The board when appointing medical men should lay it down that they must attend urgent cases without an order, and without a patient being necessarily a pauper"

IRELAND.

(FROM OUR OWN CORRESPONDENTS.)

Irish Emigration.

THE emigrants who left Irish ports in 1911 were 1884 fewer in number than those of the preceding year, the numbers being 32,457 in 1910 and 30,573 in 1911.

The Women's National Health Association and the Insurance Act.

The latest development in connexion with the Insurance Act in Ireland has arisen from the action of the Women's National Health Association. It seems than on Jan. 6th, at an important meeting convened by the Women's National Health Association of Ireland and held at Ely House, Dublin, it was unanimously decided to form a section to be known as "The National Health Insurance Society," which should be competent to become an approved society under the Insurance Act. It was also decided to recommend all the branches of the association to organise meetings locally, to which delegates would be sent for the purpose of explaining the provisions of the Act. It was pointed out that this insurance section would carry on its operations quite apart from the ordinary work of the Women's National Health Association, and would have its own offices and agents. The honorary members of the branches would not have this work thrown on them, and they and the branch committees were asked only to help in organising preliminary meetings and circulating literature which contained correct information regarding the Act, and to obtain the insuranee of as many men and women as possible for the Women's National Health Association Insurance Section. By so doing the position and influence of the association would be greatly improved, and if the new section should obtain large funds by the adhesion of many thousands of members, it would be in a position to give contributions to the Women's National Health Association, in addition to giving extra benefits to its members. It was further pointed out that it would be to the advantage of the society to get as many strong and healthy people to join as possible. So far back as May, 1911, an advisory committee consisting of Sir J. B. Dougherty, Mr. T. W. Russell, M.P., Sir Henry Robinson, the Earl of Carrick, Sir John Lynch, Mr. W. M. Murphy, Mr. G. Dougherty, and Sir William J. Thompson, the Registrar-General for Ireland, was appointed at a council meeting of the Women's National Health Association to give counsel as to what course it should take with regard to its relations to the Insurance Bill, and this committee forwarded to the Women's National Health Association the following resolution which had been passed unanimously :—

That we recommend that the Women's National Health Association should take steps to form an approved society under the Act, provided that it is found, upon inquiry, through the various branches of the association, that a sufficient number of insured persons can be obtained to qualify as an independent society under Section 38, Subsection 1, of the Bill, as introduced into the House of Lords.

The subject was consequently brought before the annual meeting of the Clonmel branch of the Women's National Health Asscciation on Jan. 9th, when by 17 votes to 4 it was decided to leave the matter alone altogether, the feeling being that there were many benefit societies in Clonmel which the people might join if they liked, and that if the association launched into another undertaking it would drift away from what it was originally established for. At a meeting of the Belfast branch held on Jan. 13th a resolution was passed by a large majority not to take any action in relation to the Insurance Act, the branch being only a health organisation. On Jan. 12th, at Queenstown, the branch of the Women's National Health Association, by a considerable majority, decided to keep to their health work and not to touch the Insurance Act; while at the Cork branch, the matter was discussed, but was adjourned for further consideration.

The Belfast Medical Guild.

At a meeting held in the Medical Institute on Dec. 7th, 1911, it was decided to form an association, to be called "The Belfast Medical Guild," and a committee was appointed to draw up a constitution and submit the same for approval or amendment at the next general meeting. This has been now done, and a general meeting will be held in the Medical Institute, Belfast, on Wednesday next, Jan. 24th, to approve or to amend the draft of the constitution which has now been circulated amongst the medical practitioners of Belfast. The committee who have drawn up the constitution and by-laws of this new medical association have, they say in a covering letter to their medical brethren, been much impressed with the serious position in which general practitioners are now placed by the passing of the Insurance Act, and all feel that disastrous results can be averted only by a firm determination to combine and to stick loyally together to the end. It is only by such united action that they can have the slightest chance of fair play in the contest with the forces that seem now to be united against the members of the medical profession.

Typhoid Fever in Omagh.

There are at present 18 cases of typhoid fever in the Omagh fever hospital, seven having been admitted during the week ending Jan 13th.

Jan. 16th.

PARIS.

(FROM OUR OWN CORRESPONDENT.)

The Will of Professor Lannelongue.

Professor Lannelongue, whose death I notified a fortnight ago, in his will appoints M. Armand Fallières, President of the French Republic, his executor. The sum of 700,000 francs is left to the Institution for the Protection and Rehabilitation of Young Girls, in addition to the legacies already made, to come into operation after the death of Madame Lannelongue. To the local society of medical men of Gers an annuity of 1500 francs has been left for physicians in distress or for their widows. This disposition completes a donation, made by Professor Lannelongue during his life, to the General Association of French Medical Men, of which for many years he was President. To the University of Paris Professor Lannelongue leaves an annual sum of 500 francs to be used as the council shall decide. To the Faculty of Medicine of Paris he leaves a like annual sum of 500 francs for medical students in necessitous circumstances. To each of the "bureaux de bienfaisance" of Auch, Condom, and Castera-Verduzan, he leaves an annuity of 1200 francs. The commune of Castera-Verduzan benefits also by numerous legacies to assist the completion of the work undertaken by its mayor. The impetus given by Professor Lannelongue to the thermal springs of this locality is well known, springs that in the time of the Romans enjoyed considerable repute. All the professor's residuary fortune, after the payment of bequests, legacies, and charges, is to be devoted to the establishment in France of some important international or national work of a social or scientific character.

Treatment of the Oriental Boil (Bouton d'Orient) by Methylene Blue.

At the last meeting of the Society of Tropical Pathology M. Cardamatis and M. Melissidis recommended the use of methylene blue in Oriental boil in the following manner: Morning and evening a thick layer of methylene blue ointment is applied. This treatment is continued for from 15 to 20 or even (exceptionally) 30 days. At the outset of the treatment a slight irritation of the boil covered with the pomade is observed, as well as an increase in the amount of fluid secreted by the ulcerated surface. After 15 days of this treatment the boils are washed with soap-and-water and the patient is kept under observation for from 15 to 20 days further until the cure is complete. Only three cases have been thus treated so far, but according to the authors the results have been remarkable. The boils were cured completely and the resulting scars covered with sound skin. The first signs of cure were manifested about 10 days after the commencement of the treatment, and consisted in a diminution of the inflammatory zone surrounding each boil, subsidence of the swelling, and detachment of the scab from the periphery. After the shedding or accidental detachment of the scab a small superficial ulceration remains, secreting a serous liquid, which cicatrises speedily without the help of the methylene blue ointment. The scars are not

deep and are of a light rose colour, which distinguishes them from those resulting from other treatments.

Gift to the Paris Faculty of Medicine.

The council of the Faculty of Medicine has acknowledged and unanimously accepted a gift of 100,000 francs made to its dean. The donor is a medical man who has preserved the strictest anonymity. The proceeds of the 100,000 francs invested in the State Three per Cents. are to be expended in the best interests of the students of the Faculty of Medicine of the University of Paris. The distribution is to be made yearly, in a lump sum or divided, according to the candidature, among: students distinguished for their devotion to patients as shown by conduct in epidemics or on missions; students distinguished in medicine by discoveries, invention of clinical or laboratory methods, &c.; poor and deserving students, to whom exhibitions are to be given to defray the expense of curriculum, examinations, instruments, apparatus, journeys of scientific education in France or abroad, and so forth.

Reports on Public Health and the Hygiene of Dwellings.

On Jan. 9th the Academy of Medicine heard a communication from M. Mesureur, who is a candidate for the chair left vacant by the death of M. Henri Monod, late Director-General of Public Assistance. M. Mesureur discussed the public health reports and the hygiene of dwellings. He thinks that the insanitation of towns depends largely on that of the dwelling houses, and he adds that if the labouring class especially occupy unhealthy lodgings in so many cases it is because there are no others for them, as the population is increasing more rapidly than the building of dwellings. In 15 years the proportion, which in Paris was formerly one dwelling for 2·90 inhabitants, is now one for 4. According to M. Bertillon, out of 1,664,000 inhabitants of this class, 340,000 occupy dwellings actually infected. M. Mesureur proposes the demolition of all unhealthy dwellings and the development of building societies for workmen's dwellings. The Public Assistance has largely taken up these enterprises, which return an annual revenue of 3·25 per cent. M. Mesureur also proposes the establishment of a kind of sanitary council before which the tenants and the medical man should be called on to give their opinion.

The Rising of the Seine.

For some days the level of the Seine has again risen, and although there is no immediate reason for inquietude, nevertheless the recollection of the floods of two years ago gives rise to some apprehension as to the future. Already the Parisian boats are unable to continue their complete service, the banks of the Seine are covered with water, and in the suburbs the inhabitants have water in their cellars. In Paris itself many cellars are flooded, and some of the attendant evils are making themselves felt, for telephonic communication is difficult on certain lines on account of the flooding of the cellars of the Guttenberg Exchange. The swollen affluents of the Seine, it is feared, will for a few days yet continue to augment the river, but with fine weather the maximum may be reached without any serious consequences.

Jan. 16th.

UNITED STATES OF AMERICA.

(FROM OUR OWN CORRESPONDENTS.)

Crime and Suicide in the United States.

NEWSPAPER reports of crime in 23 States during a period of 30 days have been recently analysed and classified. The total population of these States was 51,179,015. In this population in one month 470 violent crimes had been committed, which is 1 in every 108,286, or approximately 9·5 to the million. Taking murders alone, the total of 245 gave in the population 1 in every 208,893, or approximately 4·8 to the million. On a yearly basis this would give 57·6 murders and 114 violent crimes to the million. In this consideration, however, cities like Chicago, Philadelphia, Cleveland, Cincinnati, Boston, and St. Louis were, as far as possible, left out. Mr. Andrew D. White set the murder-rate of the United States for 1910 at 126 to the million. According to the American *Spectator*, the combined suicide-rate of 100 American cities, which was 21·8 per 100,000 population in 1908 and 21 in 1909, fell to 19·7 in 1910. The rate for the City of New York was 18·9. San Francisco had the highest suicide-rate, the yearly average being 52 per 100,000 inhabitants for the period of 1900 to 1909. Suicide has been most frequent during the past 10 years in five cities of California and in Hoboken, N.J., which has a rate of 35 per 100,000.

Increase of Railroad Accidents.

The Public Service Commission has reported that for the month of October last there was a considerable increase in railroad accidents, but a decrease in the number of deaths and serious injuries as compared with the corresponding period of last year. The accidents numbered 5488, against 5302 in October, 1910, and 4447 in October, 1909. There were 19 persons killed and 139 seriously injured, while in 1910 27 were killed and 226 seriously injured.

New Surgeon-General of the Public Health and Marine Hospital Service.

Dr. Rupert Blue and Dr. J. H. White have been named as candidates for the Surgeon-Generalship of the United States Public Health and Marine Hospital Service, vacant by the death of Dr. Wyman. Dr. Blue, who is at present stationed in Hawaii, will be remembered for his great work in San Francisco during the campaign against plague there. Dr. White is at the present time in New Orleans, where he did excellent work a few years back in the yellow fever epidemic. It is said that the appointment has been offered to Dr. Blue.

The American Association for the Conservation of Vision.

This association is an organised and conscious movement complementary to the National Committee on the Prevention of Blindness in the United States, which has developed since the formation of the first definite effort by the appointment of the New York Association for the Blind on June 1st, 1908. Other States that have taken up the matter by the formation of commissions and societies for the prevention of blindness are Maryland, Ohio, Massachusetts, Kentucky, Pennsylvania, Wisconsin, and California. The Russell Sage Foundation created a committee and a national committee on the prevention of blindness to systematise and coördinate the efforts being made in various parts of the country to this end. But a new note was introduced into the work in respect of the many conditions causing impairment of eyesight without necessarily inducing blindness, of which defective illumination and certain industrial processes were the most common. The Association for the Conservation of Vision, which arose to meet these ends, endeavours to secure legislation for better standards of factory illumination, for better protection of the eyes of school children, and so forth. It has inaugurated a general campaign of public education through the magazine and newspaper press.

The New York Medical Journal.

The editorship in chief of the *New York Medical Journal*, vacant by the death of Dr. Frank P. Foster, has been filled by the appointment of Dr. C. E. de M. Sajous, of Philadelphia, as supervising editor, the remainder of the editorial staff remaining unchanged. Dr. Sajous has had a wide editorial experience, and his "Annual of the Universal Medical Sciences," later the "Cyclopædia of Practical Medicine," is well known. Dr. Sajous spent the six years from 1891 in original research work in Paris, of which the outcome was his recently published two volumes on the Internal Secretions and the Principles of Medicine. He will doubtless continue the honourable traditions so long and worthily sustained by the late Dr. Foster and maintain the *New York Medical Journal* in the first rank of American medical journalism.

Action by a Typhoid Carrier against the City of New York.

The cook known throughout America as "Typhoid Mary," it is said, is about to bring an action against the city of New York and the Health Department, claiming damages for being kept in confinement for three years. "Typhoid Mary" was first heard of in 1906, when six members of a household in which she was cook were stricken with typhoid fever. Careful investigations by Dr. Soper as to the cause of the outbreak showed that water and food were not responsible. Dr. Soper, finding that the family had changed cooks about three weeks before, investigated the antecedents of the cook, Mary Mallon. It was found that in almost every house in which she had

worked typhoid fever had broken out, and 26 cases of the disease were laid at her door, although Dr. Soper was able to trace only fragments of her history during ten years. The Health Department could not learn that the woman had ever had typhoid fever, and she was described as a robust, heavily built person. She declares that she never had typhoid fever, and objected strongly to being confined. On the complaint of the Health Department, however, she was incarcerated as a menace to the community, and was released only in February last on the plea of Dr. Lederle that she had been shut up long enough to learn the necessity for taking precautions. Mary Mallon now brings action on the ground that she was unjustly held prisoner, and that since her release she has been unable to follow her trade of cooking, and that her chances of making a living have been greatly reduced. This action gives rise to a very nice point of law: Can a person be properly imprisoned, or rather isolated, on the authority of the health officers on the ground that he is a menace to the community as a probable disseminator of disease? On the principle that the public welfare is the highest law this would appear to be sound practice; yet scarcely enough is known regarding the menace of a "disease-carrier" to make the case of Mary Mallon a desirable precedent. The whole matter will doubtless be thoroughly threshed out in the courts.

The Health Officer of the Port of New York.

As is known to readers of these letters, by a singular flaw in legislation, the health officer of this important port is a State appointed and not a Federal official, although the water highways of the nation are generally under central control. As the annual salary of the post is £2400 it has always been one of great interest to the political "bosses." Dr. Alvah H. Doty has been health officer for over 12 years, and has given universal satisfaction to the public and to his fellow practitioners, but that has not placated his political opponents. Dr. Doty's term expired on Feb. 28th last, and on May 30th following the Governor of the State appointed a commissioner to investigate the methods of the administration. This report has just been issued after an absurd investigation, in which ignorant immigrants were invited to testify concerning methods of treatment. A sample of their testimony was their protest against the "cruelty" of putting young babies out of doors in the coldest weather during their sleeping hours. A meeting was called at the Academy of Medicine on Dec. 13th last of the practitioners of New York to protest against this report, and several hundred attended. Resolutions of confidence in Dr. Doty were adopted and a petition to the Governor of New York State to maintain him in office was prepared. The Governor, however, has required Dr. Doty's resignation.

Rabies in New York City.

Interesting statistics have been compiled by the Department of Health, which show that the number of persons recommended for the Pasteur treatment after examination by the department was 182 in 1909, 262 in 1910, and 312 for the first eight months of 1911. There were more persons bitten than shown by these figures, since a large number call at the laboratory of their own volition whose cases are investigated but who are not advised to take the Pasteur treatment because the animals that bit them were not rabid. For the months of April, May, June, July, and August of 1911 the number of cases of this character was 236. The New York Pasteur Institute furnishes the information that for the year ending August 1st, 1910, there were 952 consultations for bites inflicted by dogs and cats, while the figures for the ensuing year were 1010. In 1910 377 such animals were examined and 152 positive cases of rabies were found. For the first seven months of the past year 349 animals were examined with 173 positive results. Of the total number of 2462 persons bitten 1743 were children.

War on Infantile Poliomyelitis.

As it is now believed by many observers that infantile paralysis is an infectious disease, communicated in the dust of the sick-room by an ultra-microscopic organism, the Department of Health has taken measures to combat its spread by the appointment of inspectors to all orthopædic hospitals and dispensaries to ensure complete reports of all cases presented. Cases will probably be isolated in the future, and other children in the family will be kept from school. Circulars will be issued giving a summary of our present knowledge of the disease and its treatment, and a minimum quarantine period of six weeks will be instituted. Bedding will be disinfected, and houses in which cases occur will be renovated or fumigated. Physicians will hence-forward be compelled to report all cases coming under the r notice.

Pensions for Nurses.

Mount Sinai Hospital has established a precedent in raising a fund of £12,000 for the use of nurses who have graduated from its training school and have subsequently supported themselves for at least 20 years by their profession. The fund will be administered by a committee of the Alumnæ Association, and it is understood that the latter will not be too strict in its rulings and may occasionally give relief where the full 20 years have not expired.

The City's Pure Food Policy.

The numerous cases of adulteration by retail dealers of common articles of food, as often reported in these letters, have drawn a statement from Health Commissioner Lederle to the effect that the municipal department, together with the State authorities, will never succeed in their efforts till they are empowered to supplement the work of the Federal officials. If this power is not conferred the Federal power will eventually become supreme. The city commissioner has ceased the mere confiscation of the adulterated food and has instituted criminal proceedings in all cases. This has struck fear into violators of the ordinances, who cannot suffer imprisonment without serious financial loss.

An Effort to Fight Insanity.

The State Charities Aid Association has recently issued a booklet, "Why Should Anyone Go Insane?" The sending out of this work is part of a campaign for the purpose of educating the public in the knowledge that insanity is preventable; 24,845 letters have been posted to clergymen, educators, teachers, and others, explaining the causes and prevention of insanity. There are 32,657 insane in the State hospitals, or 1 in every 20 of the adult population. It is hoped to develop the campaign along the lines so successfully followed in the fight against tuberculosis.

The Army Canteen.

Some years ago Congress abolished the army canteen under pressure from an immense number of amiable *a priori* thinkers who maintained that it was wrong for "Uncle Sam to be in the liquor business." A letter has been prepared by Dr. W. W. Keen, of Philadelphia, himself a total abstainer and non-smoker, and signed by 275 of the most prominent practitioners in the country, praying Congress to restore the soldiers' club. Nothing stronger than lager beer was ever sold at the canteen, together with tobacco and certain food delicacies. The profits were applied to the soldiers' mess. Since the abolition of the canteen drunkenness, desertions, and especially venereal disease, have been extremely prevalent and constitute a serious menace to the army. The canteen was immediately replaced by a circle of "dives" of the worst description, where adulterated whisky was sold to the men, who were then robbed by the diseased females who haunted these places. According to the report of Surgeon-Genera Torrey, the disease peril has come to outweigh in importance any other sanitary question which now confronts the army, and neither our national optimism nor the Anglo-Saxon disposition to ignore a subject which is offensive to the public can longer excuse us from facing the problem.

Dr. C. H. Mayo's Health.

Dr. Charles H. Mayo, one of the well-known Mayo brothers, whose surgical clinic at Rochester, Minnesota, has become a veritable Mecca for medical pilgrims of all nationalities, has had to undergo abdominal section twice within a week. On Dec. 15th last he was taken suddenly ill in New York with appendicitis and was operated on at the Presbyterian Hospital by Dr. Joseph A. Blake, a gangrenous appendix being removed. On the 22nd symptoms of acute cholecystitis set in, and he was again operated on and a number of gall-stones were removed. He has progressed favourably.

Jan. 6th.

THE NATIONAL INSURANCE ACT.

THE COUNCIL OF THE BRITISH MEDICAL ASSOCIATION.

A SPECIAL meeting of the Council of the British Medical Association was held at 429, Strand, London, on Wednesday afternoon, Jan. 17th. A largely signed requisition was before them from the members of the Association that an extraordinary general meeting of the whole constituency should be held to consider the position of the profession under the National Insurance Act. It is well known that the authorities of the Association consider that such an extraordinary general meeting of the whole body would be out of order on the particular proposition, but no definite statement as to the decision of the Council has been made public.

BRITISH MEDICAL ASSOCIATION REFORM COMMITTEE.

The Reform Committee, which came into being on Jan. 9th at the meeting of medical men in the Hammersmith Town-hall, has issued the following manifesto:—

To the Members of the Medical Profession in General and of the British Medical Association in Particular,—

The Provisional Executive of the British Medical Association Reform Committee, appointed by resolution at a public meeting of the profession held at the Hammersmith Town-hall on Tuesday, Jan. 9th, 1912, wishes to publish the following as an outline of its objects and policy.

1. This Committee exists solely for the purpose of enforcing the avowed policy of the British Medical Association in contra-distinction to the weakened version thereof expressed in the circular letter to Representatives under date Dec. 9th, 1911, which was signed by the chairman of Representative Meeting and chairman of Council, and will only continue to exist until the interests of the medical profession under the National Insurance Act, 1911, are adequately safeguarded without evasion, equivocation, or mental reservation of any kind.

2. The Committee is of opinion that the best method of obtaining this end is by the promotion of an Act of Parliament, through the British Medical Association, amending the National Insurance Act, 1911, in such a manner as will embody as a minimum the six-point programme of the British Medical Association. This opinion of the Committee is directly opposed to that of the existing Council of the British Medical Association—namely, that matters may now be left in the hands of the Commissioners to be dealt with in their regulations.

3. The Committee is of opinion that in its recent negotiations with the Government the existing Council of the Association has allowed itself to be too much influenced by political considerations, and by so doing have endangered the interests of the medical profession, and the Committee is further of opinion that the "ending or mending" of the present Council is the only method by which the confidence of the members of the British Medical Association in their official leaders can be restored.

4. In order to reform the existing Council the Committee suggests the enrolment in the Reform Committee of sufficient members in each division and branch as to ensure that a Representative be returned either to the Representative Body or to the Council who shall be in sympathy with, and will pledge himself to vote for, the policy laid down in the foregoing paragraphs. It also suggests the establishment of an Executive Committee in London composed of delegates of divisions to control the business and finances of the Reform Committee.

5. The Provisional Executive suggests that the Reform Committee should confer as soon as possible with all or any of the present medical organisations which have been formed for the purpose of dealing with the situation created by the Act, with a view to union.

6. The Committee is of opinion that every member of the profession should be a member of the British Medical Association, and urges every member of the Reform Committee to use their best endeavours to obtain new members and to persuade existing members to continue their membership.

The Reform Committee invites members of the British Medical Association who are in sympathy with the policy as set forth above to assist in the establishment of branches of the committee in their divisions and to lose no time in communicating with the Honorary Secretary, Provisional Executive Committee, at its offices, 29, Old Queen-street, Westminster, S.W. (Telephone, 1775 Victoria). The chairman is Dr. F. J. Smith, Mr. P. C. Raiment is honorary secretary, and Mr. Wilfrid Travers business manager.

TWO EXPOSITIONS OF THE ACT.

The National Insurance Act, 1911. Being a Treatise on the Scheme of National Health Insurance and Insurance against Unemployment created by that Act, with the Incorporated Enactments, full Explanatory Notes, Tables, and Examples. By ORME CLARKE, of the Inner Temple and Western Circuit, Barrister-at-law. With an Introduction by Sir JOHN SIMON, K.C.V.O., M.P., Solicitor-General. London, Sydney, and Calcutta: Butterworth and Co. 1912. Pp. 491. Price 12*s.* 6*d.*—Mr. Orme Clarke is very early in the field with an informing and lawyer-like commentary upon the National Insurance Act, and his book should before long be in the hands of everyone whose duties or inclinations impel him, we will not say to master so large and complex a subject, but to acquire accurate knowledge of those portions of the Act which immediately concern him. Mr. Clarke admits that the task of writing his treatise in the circumstances in which the Act was passed, and in view of the necessity for early publication, was no easy one, but we hope that, as he suggests, *olim meminisse juvabit.* No doubt when he has supplemented his recent labours by a similar exposition of the regulations now being pondered by the Commissioners he will be able to look back with satisfaction upon what he has accomplished—and decide whether a second edition should wait for the passing of an amending Act. Mr. Clarke acknowledges indebtedness for assistance to a legal colleague, Mr. Colin Smith, and has secured appreciation of his work by the Solicitor-General, who contributes a pregnant introductory note. The form of the book is that familiar to lawyers, and is also one convenient for laymen. An introduction is followed by the Act itself set out in full, with a full explanatory note, distinguished in the printing by a different type, following each section. The usual Tables of Cases and Statutes are inserted at the beginning, and material portions of the Interpretation Act, 1889, will be found at the end. Passing over the introductory summary, which is brief, but which makes tolerably clear the general scope of the Act in case this may have been forgotten, we naturally turn, in a work of this kind, to renew our acquaintance with those sections of the new statute which directly affect the medical profession, and none can do so without being struck at once by the meagreness of the information which they afford, and by the scanty consideration which Parliament was allowed to give to the case of the profession without whose coöperation the Act must remain unworkable. Section 15, which deals with medical benefits, manages to suggest a possible difficulty for which it provides no apparent solution. Insurance committees, as all are aware, are to adopt a system which will secure the right of the insured to select a medical practitioner from a panel to treat him, subject to the consent of the practitioner so selected. But what is to happen when a prospective patient is declined by a practitioner, and when he meets with a similar refusal from all the other members of the panel? According to the section, the system to be adopted must secure "the distribution amongst, and so far as practicable under arrangements made by, the several practitioners whose names are on the lists, of the insured persons who after due notice have failed to make any selection, or who have been refused by the practitioner whom they have selected." Mr. Clarke thus illustrates and speculates upon the situation. "A, B, and C are the practitioners on the list in a given area; D, an insured person in that area, has selected A as his practitioner, but A has refused to have him. Similarly, B and C refuse to have him, and A, B, and C are unable to arrange between themselves who is to take D. D would be one of the persons who would have to be distributed, and in the absence of arrangement between A, B, and C it is submitted that D's right to select would revive, and he would be allocated to A, who in fact had previously refused to have him. It is submitted that the exercise by a practitioner of his right to be placed on the list must carry with it the possibility of the abrogation of his right to refuse to treat any given

patient. *Sed quære* whether in such a case the practitioner is not entitled to persist in his refusal to treat the person in question. If so, *quære* whether the Commissioners may use their powers under the proviso and suspend the person's right to medical benefit?" We venture to question the soundness of Mr. Clarke's first two submissions, and lean rather to his latter two, but the case imagined has been left apparently not provided for, whether by design or owing to the manner in which the Act was passed, and it is one which adds weight to the arguments of those who insist upon a system of payment by fees for work done. The refusals to treat individual cases under a system of payment *per capita* would naturally be more numerous than under the other. However, "*quære*" and "*semble*" are words which the author finds himself frequently obliged to employ in his notes of explanation, and he raises under them a good many interesting questions for meditation and discussion. It may be mentioned that Sir John Simon, in his introduction, makes a very good point in favour of the inclusion of sickness and unemployment insurance in one Act. He says that as capacity to work is a condition without which unemployment benefit is not to be enjoyed, and as incapacity to work is equally a qualification necessary for those seeking sickness benefit, to have passed one half of the Act without the other would have meant either the claiming of unemployment benefit by those whose condition was due to physical incapacity, or the claiming of sick benefit by those in fact unemployed, according to which half of the Act had been allowed to take precedence of the other. The soundness of the argument is what might be expected from the able lawyer who puts it forward, although it must be recollected that Part II. of the Act only applies to certain groups of trades.

Everybody's Guide to the Insurance Act. By THOMAS SMITH, Barrister-at-Law, of the Inner Temple; Joint Author of "Points for Guardians and their Officers." London: Charles Knight and Co., Limited. Pp. 304. Price 1*s.* net.—The enormous number of persons directly affected by the Insurance Act renders the publication of a popular introduction to its provisions opportune, and Mr. Smith's work is, as its title implies, a guide of a popular nature rather than a legal text-book. In form it consists of a series of explanatory articles paraphrasing and commenting upon the Act, with references to the sections dealt with, the Act itself being printed in full without notes at the end of the book. In effect it is calculated to give a good general idea of the new law and of some of the difficulties likely to arise under it, and reference to, and comparison with, the text of the Act will generally show how far the author's version of its provisions is justified. Something more in the nature of a legal treatise will be required by those who desire to get as near to unimpeachable accuracy in their appreciation of details as the complexity of the subject will permit. It is not easy to paraphrase a section or sections of an Act of Parliament and to preserve at the same time their full meaning, especially if condensation is attempted at the same time. Mr. Smith sets out the following as one of three main principles upon which the Insurance Act is founded: "(1) It is founded on compulsion. So far as is possible, all employed persons who do not earn salaries or remuneration exceeding £160 a year are brought within the scheme." This may be correct as far as it goes, but the inclusion of employed persons earning more than £160 a year by manual labour is left to be gathered from the following page. Again, the case of persons refused by the medical practitioner whom they have selected is dealt with by saying "such persons will be distributed as far as possible amongst the medical practitioners on the list." Here "as far as possible" seems to be the author's version of "so far as practicable" in Section 15, Subsection 2 (A), words which there do not govern the distribution, but the making of arrangements for it by the several medical practitioners on the lists. Again, the words "the regulations may provide" occur at the commencement of what we take to be the author's version of Section 15, Subsection 4, which begins "the regulations shall provide." In dealing with the same section the author, we notice, characterises the provisions of Subsection 3 as "effecting a compromise which was apparently acceptable to the medical profession," a statement from which we should differ, even taking into consideration the qualifying adverb "apparently." Nevertheless, as a popular guide or as an introduction to a closer study of the Act Mr. Smith's work should be found useful.

INSURANCE COMMISSIONERS.

For the convenience of our readers we print the full lists of Insurance Commissioners officially appointed by the Treasury:—

English Insurance Commissioners.

Sir Robert L. Morant, K.C.B., chairman.
Mr. J. Smith Whitaker, deputy chairman.
Mr. John Swanwick Bradbury, C.B.
Mr. David James Shackleton.
Mr. James Lister Stead.
Mr. Thomas Neill.
Miss Mona Wilson.
The Chief Registrar of Friendly Societies.

Scottish Insurance Commissioners.

Mr. James Leishman, chairman.
Dr. John Christie McVail, LL.D., deputy chairman.
Mr. John M'Nicol.
Miss Mary Muirhead Paterson.
The Chief Registrar of Friendly Societies.

Irish Insurance Commissioners.

Mr. Joseph Aloysius Glynn, chairman.
Mr. Walter Samuel Kinnear, deputy chairman.
Dr. William Joseph Maguire.
Mrs. Marie Louise Dickie.
The Chief Registrar of Friendly Societies.

Welsh Insurance Commissioners.

Mr. Thomas John Hughes, chairman.
Dr. Harold Meredith Richards, deputy chairman.
Mr. John Rowland, M.V.O.
The Hon. Violet Douglas-Pennant.
The Chief Registrar of Friendly Societies.

Joint Committee.

The Lords Commissioners of the Treasury have also appointed a Joint Committee of the several bodies of Insurance Commissioners as follows:—

Mr. C. F. G. Masterman, M.P., chairman.
Sir Robert Morant, K.C.B., vice-chairman.
The chairmen for the time being of the several bodies of Commissioners *ex officio* members of Committee.
Mr. J. Smith Whitaker.
Mr. J. S. Bradbury, C.B., Chief Registrar of Friendly Societies.
Sir John Struthers, K.C.B.
Mrs. Louise Creighton.

The Joint Committee of Commissioners under the Act have appointed Mr. W. J. Braithwaite secretary and Mr. A. W. Watson chief actuary to the Joint Committee.

Obituary.

EDMUND DOWNES, M.D. BRUX., F.R.C.S. EDIN.

THE death is announced of Dr. Edmund Downes, which occurred at Eastbourne on Jan. 11th. He came of an old Northamptonshire family, and was born at Horton 68 years ago. After leaving school he entered upon a military career, obtaining a commission in the Royal Artillery and served for a few years. The study of medicine, however, had greater attractions for him, and in 1876 he took the M.D. degree at Brussels, and the L.R.C.P. diploma in London. He then offered himself to the Church Missionary Society, and was for some years engaged in the society's Kashmir Medical Mission. In 1882 at Calcutta he read a paper on the subject of the mission at the Decennial Missionary Conference. His health, however, broke down, and he was compelled to return to England. In 1884 he became a Fellow of the Royal College of Surgeons of Edinburgh, and in the same year settled at Eastbourne, where he soon had an extensive practice. While at the Sussex seaside town he centred his principal activities, apart from his profession, in the advancement of religious and philanthropic works. He was very fond of swimming and for 20 years was President of the Eastbourne Swimming Club. It was through ill-health that he retired from this position in December, 1909, and the

members presented him with an artistic illuminated address appreciative of his generous help. Of late years his health completely broke down, and his last serious illness extended over five months. In the early "eighties" Dr. Downes was a frequent contributor to THE LANCET, among his papers being, "Treatment of Acute Osteitis" in 1881; "Operation and Cure of Complete Congenital Occlusion of Os Uteri," in 1882; and "The Use of the Catgut Ligature," in 1883.

DEATHS OF EMINENT FOREIGN MEDICAL MEN.—The deaths of the following eminent foreign medical men are announced:—Dr. Julius Weil, of the Schlachtensee Sanatorium, aged 42.—Dr. Bernhard Schuchardt, for many years chief of the Medical Department of the Ducal Government of Gotha, aged 88. He was a voluminous writer on many subjects—hygiene, geographical pathology, the history of medicine, pharmacology, &c. His son, Karl August Schuchardt, was director of the Stettin Hospital, and had attained to considerable eminence as a surgeon before his death many years ago.—Dr. Kroemer, of Conradstein, Medical Privy Councillor.

Medical News.

EXAMINING BOARD IN ENGLAND BY THE ROYAL COLLEGES OF PHYSICIANS OF LONDON AND SURGEONS OF ENGLAND.—At the Second Professional Examination in Anatomy and Physiology, held on Jan. 4th, 5th, 8th, and 9th, 94 candidates presented themselves, of whom 49 were approved and 45 were rejected. The following are the names of the successful candidates:—

John Paul Adock, Bristol University and University College; Carl Frederick Anthonisz, Ceylon Medical College and Middlesex Hospital; Mary Elizabeth Ashton, L.M.S. Calcutta, Medical College, Calcutta; Narayan Krishna Bal, L.M.S. Bombay, Bombay University; Percy William Barnden, London Hospital; Zaki Mikhail Bishara, Cairo and London Hospital; Norman Briggs, Leeds University; Marcus Thomas Gonzalez Clegg, B.A. Cantab., Cambridge University; Subramanya Doraisamy, Madras University and Middlesex Hospital; Herman Gerald Dresing, Guy's Hospital; Charles Theodore James Drobig, St. Mary's Hospital; James Angel Durante, London Hospital; Ahmed Fahmi El-Hakim, Cairo and London Hospital; Frederick Ernest Feilden, Middlesex Hospital; Hassell Dyer Field, St. Thomas's Hospital; George Cowley Gell, Middlesex Hospital; Lionel Augustine Graham, Guy's Hospital; Alfred Risdon Hacker, Westminster Hospital and King's College; Arthur Herbert Harkness, Guy's Hospital; Frank Cecil Harrison, Sheffield University; Abdel Halim Hilmy, Cairo and St. Thomas's Hospital; Tom Jones, B.A. Cantab., Cambridge University; Charles George Gordon Keane, St. Mary's Hospital; Merlin Kingsley, L.M.S. Calcutta, Calcutta Medical College; Felix Edward Ricardo Laborda, Guy's Hospital; James Arthur Liley, London Hospital; Kambeeranda Cariapa Mandana, Madras University and Middlesex Hospital; Alwyne Harold Manfield, London Hospital; Bhamini Mohan Mitra, Calcutta Medical College and Middlesex Hospital; Newman Frederick Norman, Cambridge University and St. Bartholomew's Hospital; Guy William Parry, St. Bartholomew's Hospital; John Meredydd Parry, University College, Cardiff; Owen Guy Parry-Jones, B.A. Oxon., Guy's Hospital; William Linnell Partridge, Guy's Hospital; Haydu Peters, Middlesex Hospital; Gabriel Francis Rodrigues, Madras University and University College; Harold Arthur Rowell, St. Thomas's Hospital; Adrian St. Johnston, St. Thomas's Hospital; John Thomas Samuel, University College, Cardiff; Noel Humphrey Wykeham Saw, Guy's Hospital; Frederick Gilbert Laughton Scott, B.A. Oxon., Oxford University; William Goodman Shakespeare, King's College; Gerald Davenant Shann, St. George's Hospital and King's College; Edward Benjamin Sunderland, University College; Leonard Hankinson Terry, St. Bartholomew's Hospital; Richard Roland Htoon Oo Tha, University College; Myles Denison Boswell Tonks, London Hospital; Cedric Norman Vaisey, Bristol University; and John Rollo Noel Warburton, St. Thomas's Hospital.

At the quarterly examination in Practical Pharmacy, held on Jan. 11th, the following gentlemen were approved:—

George William Macbeath Andrew, Cambridge University and Guy's Hospital; Louis David Cohen, London Hospital; Alfred Beuthin Danby, Guy's Hospital; William Everard Sherard Digby, Guy's Hospital; George Eldridge Dyas, B.A. Cantab., Cambridge University and St. Bartholomew's Hospital; William Kelsey Fry, Guy's Hospital; Norman Grellier, L.D.S. Eng., Charing Cross Hospital; Harry James Hoby, New Zealand University and Guy's Hospital; James Evelyn Thoresby Jones, University College Hospital; Arthur Wellington Matthew, London Hospital; Edward Jocelyn Nangle, B.A. Cantab., Cambridge University and St. Mary's Hospital; Leonard Robert Pickett, Guy's Hospital; Arthur Starkie Plant, Manchester University; Frank Pearce Pocock, King's College and Westminster Hospital; Pierre Roux, London Hospital; Ahmad Hussein Samy, St. Bartholomew's Hospital; Alexander Stanger Seabrooke, B.A. Cantab., Cambridge University and Guy's Hospital; Percy Ward, Sheffield University; Clement Arthur Webster, Manchester University; Charles Alexander Weller, B.A. Cantab., Cambridge University and St. Bartholomew's Hospital; and Stanley Wickenden, Guy's Hospital.

FOREIGN UNIVERSITY INTELLIGENCE.—*Berlin:* Dr. Uhthoff, of Breslau, has been appointed Professor of Ophthalmology, in succession to the late Dr. Michel. Dr. Oskar Huber, Director of the Medical Side of the Augusta Victoria Hospital in Schöneberg, has been granted the title of Professor. An Honorary Professorship has also been conferred on Dr. August von Wassermann, of the Institute of Infectious Diseases, who is so well known in connexion with blood tests.—*Breslau:* Dr. Uhtoff, who has accepted a chair of Ophthalmology in Berlin, has decided to remain in Breslau. Dr. Herman Coenen, Oberarzt of the University Surgical Clinic; and Dr. Alexander Bittorf, Oberarzt of the University Medical Clinic, have been granted the title of Professor.—*Brussels:* Professor Thiriar, the eminent surgeon, is retiring. His post as Director of the First Surgical Clinic has been conferred upon Professor A. Delpage, Dr. J. Verhoogen becoming Director of the Second Surgical Clinic.—*Freiburg:* Dr. Mangold, of Greifswald, has been recognised as *privat-docent* of Physiology.—*Göttingen:* Dr. Werner Rosenthal, *privat-docent* of Hygiene, has been granted the title of Professor; Dr. Eugen Muthmann has been recognised as *privat-docent* of Anatomy.—*Greifswald:* Dr. Martin Kochmann, *privat-docent* of Pharmacology, has been granted the title of Professor.—*Heidelberg:* Dr. Franz Lust has been appointed Oberarzt of the University Children's Clinic in succession to Dr. Tobler.—*Kharkoff:* Dr. Poliakoff, Professor at Dorpat (Iurieff), has been appointed to the chair of Histology.—*Kiel:* Dr. H. Schlecht has been recognised as *privat-docent* of Medicine.—*Königsberg:* The title of Professor has been granted to Dr. Isfried Hofbauer, *privat-docent* of Gynæcology; Dr. Max Draudt and Dr. Rudolf Haecker, Oberärzte of the Surgical Clinic; and Dr. Oskar Ehrhardt, *privat-docent* of Surgery.—*Leipsic:* Dr. Ewald Hering, professor of physiology, has been made a Knight of the Bavarian Maximilian Order.—*Lemberg:* Dr. Stanislas Opolski has been appointed Extraordinary Professor of Chemistry in the Medical Faculty.—*Magdeburg:* Dr. W. Thom, an eminent gynæcologist, has been granted the title of Professor.—*Modena:* Dr. Giovanni Quadri has been recognised as *privat-docent* of Medical Pathology.—*Strasburg:* Dr. Paul Asch, *privat-docent* of Urology, has been granted the title of Professor.—*Wiesbaden:* Dr. Peter Hackenbruch, an eminent surgeon, has been granted the title of Professor.—*Würzburg:* Dr. Ernst Magnus-Alsleben, who followed his chief, Professor D. Gerhardt, from Basle, has been recognised as *privat-docent* of Medicine.

LONGEVITY.—Mr. Edgar Jones, M.R.C.S., of Great Burstead, Essex, who has recently entered his 103rd year, was born at Bristol, and his brother, the late Alderman John Averay Jones, was a former mayor of that city.

OYSTERS AND ENTERIC FEVER.—At the last meeting of the Kingswood (Gloucestershire) urban council the medical officer of health, Mr. C. J. Perrott, reported that two cases of enteric fever, probably due to eating oysters, had been recently reported.

PRESENTATION TO A MEDICAL PRACTITIONER.—At a meeting of members of the Teignmouth (Devon) Corps of the St. John Ambulance Brigade, held on Jan. 11th, Mr. George Herbert Johnson, L.R.C.P., L.M.Edin., M.R.C.S. Eng., was presented with a silver smoker's table-lamp, suitably inscribed, in appreciation of his services as honorary instructor.

WE are informed by the Jeyes' Sanitary Compounds Company, Limited, 64, Cannon-street, E.C., that Dr. E. Klein has accepted the appointment of scientific adviser to the company, and that the coefficient values (by the Rideal-Walker test) of all disinfectants manufactured by them (Jeyes' fluid, cyllin, and corporation fluids) are tested and certified before the goods leave the works.

A SURGEON'S HONORARIUM.—The Brighton guardians recently advertised for a consulting and operating surgeon to the Workhouse Infirmary at an honorarium of 50 guineas per annum. This sum was considered by many medical men to be inadequate for the services required, and a meeting of the local division of the British Medical Association was held on Jan. 12th to consider the position. As no candidate has applied for the post the guardians have now agreed to receive a deputation.

UNIVERSITY COLLEGE, LONDON.—The Page May Memorial Lectures will be delivered this year at University College by Dr. Henry Head, F.R.S., on Fridays, at 5 P.M., beginning on Jan. 26th. The subject will be "The Afferent Nervous System," and the lectures will be open without fee to internal students of the University of London and to other persons interested in the lectures who obtain tickets from the secretary of University College.

DONATIONS AND BEQUESTS.—Under the will of the late Mr. James Lawes Perrin the testator left £2500 to the Bristol Benevolent Institution, and £500 each to the Bristol General Hospital, Bristol Royal Infirmary, Bristol Dispensary, Bristol Hospital for Women, Bristol Eye Hospital, Bristol Deaf and Dumb Institution, Royal Ear Hospital, London, and Swansea Hospital.

MEDICAL BATHS AT TORQUAY.—At the last meeting of the Torquay town council the provision of medical baths, including a swimming bath, was discussed, and it was eventually decided to erect these under expert direction at the Bath Saloons, at an estimated cost of about £15,000.

BOOKS, ETC., RECEIVED.

ARNOLD, EDWARD, 41 and 43, Maddox-street, Bond-street, London, W.
The Chemistry of Breadmaking. By James Grant, M.Sc. Tech., F.I.C., F.C.S., Head of the Fermentation Industries Department in the Municipal School of Technology, Manchester. Price 5s. net.

BAILLIÈRE, TINDALL, AND COX, London.
Studies in Pulmonary Tuberculosis, its Dissemination, Specific Diagnosis and Treatment, and Some Points in its Pathology. By Frederick Guy Griffiths, B.A., M.D., Ch.M., Honorary Pathologist and Honorary Assistant Physician, Royal North Shore Hospital of Sydney, and sometime Honorary Acting Pathologist, Sydney Hospital. Price 5s. net.

BALE (JOHN), SONS, AND DANIELSSON, LIMITED, London.
Some Factors Influencing Health in Tropical and Sub-Tropical Countries. By T. Gerald Garry, M.D., M.A.O., M.Ch. R.U.I. Price 2s. 6d. net.

BRYCE, WILLIAM, 54 and 54A, Lothian-street, Edinburgh.
Surgical Tables. 1911. Price 1s. 6d. net.

CHURCHILL, J. AND A., London.
Diseases of the Stomach, with Special Reference to Treatment. By Charles D. Aaron, Sc.D., M.D., Professor of Gastroenterology and Adjunct Professor of Dietetics in the Detroit College of Medicine. Price 21s. net.
Microbiology. For Agricultural and Domestic Science Students. Edited by Charles E. Marshall, East Lansing, Michigan, Professor of Bacteriology and Hygiene, Michigan Agricultural College. Price 10s. 6d. net.

GREEN, WILLIAM, AND SONS, 2 and 4, St. Giles-street, Edinburgh.
The Law relating to Medical Practitioners and Dentists in Great Britain. By J. N. Morton, M.A., Solicitor, Secretary of the Western Medical School, Glasgow. With an Appendix of Statutes. Price 7s. 6d. net.

HEINEMANN, WILLIAM, 21, Bedford-street, London, W.C.
The Individualisation of Punishment. By Raymond Saleilles, Professor of Comparative Law in the University of Paris and in the College of Social Science. With an Introduction by Gabriel Tarde, late Magistrate in Picardy and Professor of Philosophy in the College of France. Translated from the second French edition by Rachel Szold Jastrow. With an Introduction by Roscoe Pound, Professor of Law in Harvard University. Cash price in Great Britain and Ireland, 16s. net.
A New Logic. By Charles Mercier, M.D., F.R.C.P., F.R.C.S., Physician for Mental Diseases at Charing Cross Hospital; Examiner in Mental Diseases and Psychology in the University of London. Price 10s. net.

KNIGHT, CHARLES, AND CO., LIMITED, 227-229, Tooley-street, London, S.E.
Everybody's Guide to the Insurance Act. By Thomas Smith, Barrister-at-Law, of the Inner Temple; Joint Author of "Points for Guardians and their Officers." Price 1s. net.

LEONARD, W. M., 101, Tremont-street, Boston, U.S.A.
Case Histories in Medicine Illustrating the Diagnosis, Prognosis, and Treatment of Disease. By Richard C. Cabot, M.D., Assistant Professor of Clinical Medicine, Harvard Medical School. Second edition, revised and enlarged. Price $3.00

LONGMANS, GREEN, AND CO., London, New York, Bombay, and Calcutta.
The Significance of Existence. By I. Harris, M.D. Koenigsberg, L.R.C.P. and S. Price 6s. net.

METHUEN AND CO., LIMITED, 36, Essex-street, London, W.C.
The Alphabet of the National Insurance Act, 1911. By C. G. Moran, of the Inner Temple, Barrister-at-Law. Price 1s. net.

WRIGHT, JOHN, AND SONS, LIMITED, Bristol. SIMPKIN, MARSHALL, HAMILTON, KENT, AND CO., LIMITED, London.
"First Aid" to the Injured and Sick. An Advanced Ambulance Handbook. By F. J. Warwick, B.A., M.B. Cantab., M.R.C.S., L.S.A., A.K.C. Lond., Major, R.A.M.C. (T.), and A. C. Tunstall, M.D., C.M., F.R.C.S., L.R.C.P. Ed., Major, R.A.M.C. (T.) Rtd. Seventh edition, revised. Sixtieth thousand. Price, paper, 1s. net; leather, 2s. 6d. net.
Wright's Improved Physicians' and Surgeons' and Consultants' Visiting List. Compiled by Robert Simpson, L.R.C.P., L.R.C.S. Form A. 1912. Nineteenth edition. Prices from 5s. to 7s. (according to number of patients, 40, 80, 120, 160, 200, 240).

Appointments.

Successful applicants for Vacancies, Secretaries of Public Institutions, and others possessing information suitable for this column, are invited to forward to THE LANCET *Office, directed to the Sub-Editor, not later than 9 o'clock on the Thursday morning of each week, such information for gratuitous publication.*

BURD, GEORGE VANHOUSE, L.R.C.P., L.M. Edin., M.R.C.S., has been reappointed Medical Officer of Health for the Northlew District by the Okehampton (Devon) Board of Guardians.

DAWSON, GUY DE H., M.R.C.S., L.R.C.P. Lond., has been appointed House Surgeon at the Evelina Hospital for Children.

DINGLE, PERCIVAL A., M.R.C.S., L.R.C.P. Lond., has been appointed District Surgeon, Sandakan, British North Borneo.

HARSTON, L. DE C. E., L.R.C.P. Edin., F.R.C.S. Edin., M.R.C.S., has been appointed Certifying Surgeon under the Factory and Workshop Act for the Kingsbridge District of the county of Devon.

HOPPS, HUGH JAMES, M.B., Ch.B. Edin., has been appointed Assistant House Surgeon at the Gloucestershire Royal Infirmary and Eye Institution.

HOSFORD, J. STROUD, F.R.C.S. Edin., has been appointed Honorary Surgeon to the Royal Eye Hospital.

PIGGOTT, F. CECIL H., M.D., B.C. Cantab., has been appointed Medical Officer to the Post Office at Teignmouth.

RANSOM, F., M.D. Edin., has been appointed Lecturer and Head of the Department of Pharmacology in the London School of Medicine for Women.

WILSON, J. DYKES, M.B., Ch.B. Edin., has been appointed House Physician at the Sunderland Infirmary.

Vacancies.

For further information regarding each vacancy reference should made to the advertisement (see Index).

BARROW-IN-FURNESS, NORTH LONSDALE HOSPITAL.—House Surgeon. Salary £100 per annum, with board and lodging.

BIRMINGHAM AND MIDLAND EYE HOSPITAL.—Resident Surgical Officer. Salary £100 per annum, with apartments, board, and attendance.

BRENTFORD UNION.—Medical Officer for Hounslow District. Salary £175 per annum.

BRISTOL ROYAL INFIRMARY.—House Physician. Salary £100 per annum. Also Obstetric and Ophthalmic House Surgeon. Salary £75 per annum. Also Resident Casualty Officer for six months. Salary at rate of £50 per annum. Each with apartments, board, and laundry.

CAPE TOWN, SOMERSET HOSPITAL.—Assistant Medical Officer. Salary £200 per annum.

CITY OF LONDON HOSPITAL FOR DISEASES OF THE CHEST, Victoria Park, E.—House Physician for six months. Salary at rate of £75 per annum, with board and washing.

COLCHESTER, ESSEX AND COLCHESTER LUNATIC ASYLUM.—Medical Superintendent. Salary £800 per annum, with house, coals, gas, washing, stabling, &c.

CROYDON COUNTY BOROUGH.—Medical Officer of Health. Salary £600 per annum.

CROYDON GENERAL HOSPITAL.—Junior House Surgeon. Salary £75 per annum, with board, laundry, and residence.

DONCASTER, ROYAL INFIRMARY AND DISPENSARY.—Assistant House Surgeon. Salary £80 per annum, with board, residence, and laundry.

EASTERN DISPENSARY, Leman-street, E.—Gynæcologist and Ophthalmic Surgeon. Salary in each case £25 per annum.

EDMONTON UNION.—Waltham Abbey District: Medical Officer and Public Vaccinator. Salary £87 10s. per annum. Also District Medical Officer and Public Vaccinator for Winchmore Hill District. Salary £25 per annum.

EPSOM, LONDON COUNTY ASYLUM, Horton.—Junior Assistant Medical Officer, unmarried. Salary £170 per annum, with board, apartments, and washing.

EVELINA HOSPITAL FOR SICK CHILDREN, Southwark, London, S.E.—Second Anæsthetist. Salary 12 guineas per annum. Also Surgeon to Out-patients.

GLOUCESTER COUNTY ASYLUMS.—Assistant Medical Officer, unmarried. Salary £150 per annum, with rooms, rations, laundry, and attendance.

GUILDFORD, ROYAL SURREY COUNTY HOSPITAL.—House Surgeon. Salary £75 per annum, with board, residence, and laundry.

HARTSHILL, STOKE-ON-TRENT, NORTH STAFFORDSHIRE INFIRMARY.—House Surgeon. Salary £100 per annum, with apartments, board, and washing.

HITHER GREEN, S.E., PARK HOSPITAL FOR CHILDREN.—Senior Assistant Medical Officer. Salary £250 per annum, with board, lodging, and washing.

KENSINGTON AND FULHAM GENERAL HOSPITAL, Earl's Court, S.W.—Anæsthetist.

KILMARNOCK INFIRMARY.—House Surgeon. Salary £80 per annum, with board, &c.

LEAMINGTON SPA, WARNEFORD, LEAMINGTON, AND SOUTH WARWICKSHIRE GENERAL HOSPITAL.—House Physician. Salary £85 per annum, with residence, board, and laundry.

LEEDS GENERAL INFIRMARY.—Resident Ophthalmic Officer. Salary £100 per annum. Resident Aural Officer. Salary £100 per annum. Resident Ophthalmic and Aural House Surgeon. Salary £50 per annum. With board, residence, and washing.

LEICESTER INFIRMARY.—Assistant House Surgeon for six months. Salary at rate of £80 per annum, with board, apartments, and washing.

MACCLESFIELD GENERAL INFIRMARY.—Junior House Surgeon. Salary £60 per annum, with board and residence.

MIDDLESEX HOSPITAL, W.—Physician to the Hospital and Physician to Department for Diseases of the Nervous System. Also Two Assistant Physicians.

NATIONAL HOSPITAL FOR THE PARALYSED AND EPILEPTIC, Queen-square, Bloomsbury.—Resident Medical Officer. Salary £100 per annum, with board and residence.

OXFORD COUNTY ASYLUM, Littlemore, near Oxford.—Junior Assistant Medical Officer, unmarried. Salary £150 per annum, with quarters, board, and laundry.

POPLAR HOSPITAL FOR ACCIDENTS, Poplar, E.—Assistant House Surgeon for six months. Salary at rate of £80 per annum, with board and residence.

PRINCE OF WALES'S GENERAL HOSPITAL, Tottenham, N.—Honorary Dental Surgeon.

QUEEN'S HOSPITAL FOR CHILDREN, Hackney-road, Bethnal Green, N.E.—House Surgeon, for six months. Salary at rate of £80 per annum, with board, residence, and washing.

ROYAL LONDON OPHTHALMIC HOSPITAL, City-road, E.C.—Senior House Surgeon. Salary at rate of £100 per annum, with board and residence.

ROYAL WATERLOO HOSPITAL FOR CHILDREN AND WOMEN, S.E.—Junior Resident Medical Officer. Salary at rate of £50 per annum, with board and washing. Also Honorary Surgeon to the Throat, Nose, and Ear Department. Also Honorary Clinical Assistants to the Out-patient Staff.

ST. PETER'S HOSPITAL FOR STONE, &c., Henrietta-street, Covent Garden, W.C.—Junior House Surgeon for six months. Salary at rate of £50 per annum, with board, lodging, and washing.

SALFORD ROYAL HOSPITAL.—Casualty House Surgeon. Salary at rate of £50 per annum, with board and residence.

SALISBURY INFIRMARY.—Assistant House Surgeon, unmarried. Salary £50 per annum, with apartments, board, lodging, and washing.

SCARBOROUGH HOSPITAL AND DISPENSARY.—Junior House Surgeon. Salary £80 per annum, with board, residence, &c.

SHEFFIELD ROYAL INFIRMARY.—Junior Resident Medical Officer. Salary £60 per annum.

SHERWOOD FOREST, RANSOM SANATORIUM FOR CONSUMPTIVES, near Mansfield, Notts.—Resident Medical Officer (female). Salary £100 per annum, with board, residence, and washing.

SHOREDITCH AND FINSBURY TUBERCULOSIS DISPENSARY.—Medical Officer. Salary £250 per annum.

SUNDERLAND CHILDREN'S HOSPITAL.—Resident Medical Officer for six months. Salary £80 per annum, with board, residence, and laundry.

SUNDERLAND ROYAL INFIRMARY.—Junior House Surgeon for six months. Salary £80 per annum, with board, residence, and laundry.

TRURO, ROYAL CORNWALL INFIRMARY.—House Surgeon, unmarried. Salary £100 per annum, with rooms, board, and washing.

VICTORIA HOSPITAL FOR CHILDREN, Tite-street, Chelsea, S.W.—House Physician and House Surgeon for six months. Salary £40, with board, lodging, and laundry.

WEST HAM AND EASTERN GENERAL HOSPITAL, Stratford.—Junior House Surgeon. Salary at rate of £75 per annum, with board, residence, and washing.

WESTERN DISPENSARY, Rochester-row, Westminster.—Resident Medical Officer. Salary 100 guineas per annum, with fire, light, apartments, and attendance.

WINCHESTER, ROYAL HAMPSHIRE COUNTY HOSPITAL.—House Surgeon. Salary £30 per annum.

WORCESTER GENERAL INFIRMARY.—House Surgeon. Salary £100 per annum, with board, residence, and washing.

WORKINGTON, BOROUGH OF, AND FEVER HOSPITAL.—Medical Officer of Health and Superintendent of Fever Hospital. Salary for the former £150 per annum, and the latter £50 per annum.

ZANZIBAR PUBLIC HEALTH DEPARTMENT.—Health and Quarantine Officer. Salary £600 per annum.

THE Chief Inspector of Factories, Home Office, London, S.W., gives notice of vacancies as Certifying Surgeons under the Factory and Workshop Act at Bedale, in the county of Yorkshire, North Riding; at Crondall, in the county of Hampshire; at Foxford, in the county of Mayo; at Newcastle, in the county of Limerick; and at St. Mary's, Scilly Isles, in the county of Cornwall.

THE Secretary of State for the Home Department, Whitehall, S.W., gives notice of a vacancy for a Medical Referee under the Workmen's Compensation Act, 1906, for County Court Circuit No. 1 (attached more particularly to Morpeth and Blyth, North Shields, Newcastle, Gateshead, Hexham, and Bellingham County Courts).

Births, Marriages, and Deaths.

BIRTHS.

BOYD.—On Jan. 10th, at Belsize Park-gardens, the wife of Sidney Boyd, M.S., F.R.C.S., of New Cavendish-street, W., of a daughter.

POLSON.—On Jan. 11th, at Seaborough, Highcliffe, Hants, the wife of J. Ronald Polson, M.D., of a daughter.

PRYN.—On Jan. 13th, at Royal Naval Hospital, Haslar, the wife of Deputy-Surgeon-General Pryn, R.N., of a son.

MARRIAGES.

CAMPBELL—RUXTON.—On Jan. 11th, at the Church of St. Joseph and St. Francis Xavier, Richmond, Yorkshire, Basil Patrick Campbell, F.R.C.S. Edin., to Mildred Agnes, younger daughter of the late Rev. Frederick Dashwood Ruxton and of Mrs. Ruxton, of Westfield House, Richmond, Yorkshire.

CRICHTON-BROWNE—BULWER.—On Jan. 16th, at Holy Trinity Church, Sloane-street, Sir James Crichton-Browne, M.D., F.R.S., to Audrey Emily, eldest daughter of the late General Sir Edward Bulwer, G.C.B.

WARREN—JENKIN.—On Jan. 10th, at St. Paul's Church, Ramsgate, by the Rev. G. P. Haydon, uncle of the bridegroom, Richard Warren, F.R.C.S., M.Ch., of 29, Weymouth-street, W., younger son of General Sir Charles Warren, G.C.M.G., J.P., to Violet Irené, eldest daughter of A. C. Jenkin, Esq., of Rose Cottage, Heamoor, Cornwall.

N.B.—A fee of 5s. is charged for the insertion of Notices of Births, Marriages, and Deaths.

Notes, Short Comments, and Answers to Correspondents.

THE HEALTH AND SANITATION OF TRINIDAD.

A REPORT on the Blue-Book of the Colony of Trinidad and Tobago for the year ended March 31st, 1911, has been received at the Colonial Office and laid before Parliament. It states, *inter alia*, that the present estimated population is 368,014, as compared with 273,899 ten years ago. The birth-rate for the year, calculated on the mean estimated population, was 31·8 per 1000, and the death-rate similarly computed was 20·5 per 1000. The principal causes of mortality during the year were: diarrhœa, 601; fevers, 674; phthisis, 840; enteritis, 305; bronchitis, 351; pneumonia, 367.

The reports of the district medical officers show steady improvement in the health conditions of their respective districts. No special anti-malarial works are recorded, but educational efforts have been continued, and the diminished prevalence, more especially of the graver forms of malaria, indicates a more general and intelligent appreciation of the subject of malarial prophylaxis and treatment. Many of the district medical officers direct special attention to the increasing prevalence of ankylostomiasis and to the high infantile mortality. An Ordinance has been introduced into the Legislative Council containing provisions intended to give larger powers for controlling the spread of the former disease, and a scheme for providing nurse-midwives in certain districts with the object of dealing with the latter condition is under consideration. Twelve cases of bubonic plague occurred during the year. In addition to disinfection, special scavenging, and rat destruction, inoculation with anti-plague vaccines was extensively performed. Two fatal cases of yellow fever occurred; in each case the person attacked had recently arrived in the colony. Throughout the year anti-mosquito regulations were enforced; 473 informations were laid on account of the presence of mosquito larvæ on premises, and fines amounting to £115 were recovered. In Port-of-Spain a new abattoir was opened, and a filtration plant had been added to the waterworks. No case of infectious disease was introduced into the colony from outside. A Clayton disinfector, brought into use in 1910, has been found to work satisfactorily in the fumigation of large steamers from infected ports. The death-rate of the colony shows that the climate cannot be considered unhealthy, and for the most part European residents who take ordinary precautions enjoy as good health as in colder climates, but in certain malarial districts special precautions are requisite. Observations taken at 72 different stations in Trinidad during 1910 showed a mean rainfall for the year of 82·65 inches, the average in the preceding 20 years having been only 65·9. The mean temperature for the year was 77·9°.

The two principal hospitals are in Port-of-Spain and San Fernando respectively. At the former the admissions during the year numbered 5796, the discharges 5027, and the deaths 742, the daily average of patients in hospital being 287. Of the 5027 discharged, 2195 had been cured, 2674 had been relieved, and 158 showed no improvement when discharged. At San Fernando the admissions numbered 3107, the number discharged was 2747 (614 cured, 1993 relieved, and 140 not improved), the deaths 341, and the daily average of patients 108. There are seven district hospitals maintained by the Government in the districts of Arima, St. Joseph, Tacarigua, Couva, Princestown, Cedros, and Scarborough (Tobago). Temporary hospitals are also provided at Chaguanas, Sangre Grande, and Mayaro for use when occasion requires; and two hospitals for the special treatment of patients suffering from yaws are maintained, one at Scarborough (Tobago), with 79 inmates on March 31st last, and the other at St. Augustine (Trinidad), with 135 inmates at the same date. With regard to the latter, it is noted that in consequence of the treatment of the disease by means of "salvarsan," introduced during the year, the number of the inmates, which was 212 on March 31st, 1910, had been reduced to 135 on March 31st, 1911.

The leper asylum, which is situated about two miles to the west of Port-of-Spain, contained 273 inmates on March 31st, 1911. During the year the admissions numbered 65, the discharges 31, and the deaths 34.

THE SERVANT PROBLEM.

ONE of the commonest subjects of general and plaintive discussion at the present day is the difficulties of the "servant problem." There are few indeed who have not suffered under it, and it is admittedly becoming more and more acute. One great point is almost universally lost sight of in considering the servant problem, and that is the great change in the outlook and point of view of every man, woman, and child in the country, that has gradually been coming about as a consequence of the social change resulting from the introduction of increased facilities of locomotion and communication. In olden times the times "when servants were servants," communities were more or less circumscribed, there was a smaller proportion of people able or desiring to "keep a servant," or servants, and the supply was consequently very largely drawn from local sources. The girls, as they

grew up with domestic service before them, knew at least by repute all about their prospective employers. The employer also knew, or could easily find out, all about the character, tastes, ability, and disposition of the prospective maid. In her evenings off the girl had her parents and village friends handy, and the latter, being known to "the family," had facilities afforded them for keeping up social intercourse with their womenkind in domestic service. But all this is changed. The girl who goes out to service goes away for the most part far from home and friends. She enters a household of the personalities composing which she knows nothing and has no opportunity of learning anything before making the experiment at her own risk. Other occupations now opened up to young women of the poor offer to them a release from this difficulty. As a consequence, moreover, of the very different training children of all classes now undergo, and the consequently different ideals with which they grow up, any restraint, such as is inevitable in domestic service, becomes altogether repellent. It is idle to attempt to change the conditions of domestic service to suit this latter class, but it is of the utmost importance that a well-planned endeavour should be made so to readjust them that those whose outlook on life has not materially changed may find an attractive broadening and enlarging of their own possibilities in the sphere of domestic work. Such an attempt, it appears to us, is being made by the Women's Industrial Council (Incorporated), of which the Countess of Aberdeen is President, in its Inquiry into the Conditions of Domestic Service, "the largest single industry in this country." The council has collected the alleged drawbacks to domestic service, as well as the various suggestions that have been offered for their amelioration, and grouped them into four heads as follows: (*a*) Complete absence of organisation in the trade; (*b*) wages; (*c*) disadvantages of domestic service as compared with other trades; (*d*) prospects. The honorary secretary's address is 7, John-street, Adelphi, London W.C.

STEAM COOKING.

In ordinary households, where a regular cook is not kept, it is to b feared that less care is nowadays bestowed on the cooking of meals than was formerly the case. Yet it is not too much to say that much mischief, physical, mental, and by consequence moral, results from the use of improperly cooked food. Potatoes, for instance, of old time used to be steamed in a colander, not boiled, and the starch grains were properly broken up. That took three-quarters of an hour; now they are frequently boiled, which can be done in a little over 20 minutes, but with the result that they are neither so nourishing nor so palatable, and are less digestible. The same thing applies to many articles of diet. In these gad-about days the housewife grudges the time taken for steaming, as where some articles are steamed while others are roasted, baked, or boiled, it demands her attention much longer exclusively to the cooking. If, however, all the food were steamed, this objection would not hold good, because when once steam cooking is started it can be left alone, leaving attention free to be directed to other things. There can be little doubt that most foods are rendered not only more nutritious but also more palatable by steaming than by boiling or stewing. They are lighter and the delicate flavours are better retained. We have received a little pamphlet ("Recipes for Steam Cookery," by "Helen Whyldon." Printed by Polsue, Limited, Gough-square, Fleet-street, E.C., price 1*d*.) containing a collection of recipes for steam cooking as applicable to fish, meat, vegetables, puddings, and other dishes, including much that would be of use for the invalid.

CHRISTMAS DRESSING-UP.

It is to be hoped, perhaps vainly, that school teachers, parents, and all likely to be responsible for the dressing up of children and others for Christmas performances next December will recollect and be warned by some of the terrible fatalities which occurred during the recent holidays. The inquest upon the deaths by burning of five children at Chesterfield has been concluded, and although the verdict of the jury did not assign responsibility for the disaster to any of the grown-up persons concerned in preparing the performance which ended so fatally, the tragedy will no doubt remain graven in their memories as one which might have been avoided if someone, or if all concerned, had exercised the care which the situation demanded. A score or more of children were crowded together in two small rooms to be dressed for a performance in which the costumes were of a highly inflammable character, many of them being decorated with cotton-wool, the usual cheap and easily obtainable imitation of snow. There was so little supervision that on the night preceding the disaster two of the young girls engaged smoked cigarettes while wearing dresses covered with cotton-wool, and the fatal ignition of clothing occurred when these two girls (both burnt to death) and four or five companions dressed in the same way were "playing with fire on the following evening." The only evidence available showed that apparently some of these half-dozen children in a room containing others not so engaged were throwing upon the flames of an open grate fragments of cotton-wool, one of which escaped past the fireguard and fell amongst them. Everyone knows what children are and the extraordinary fascination which such an amusement as that indicated exercises upon them. Everyone, also, should be aware of the extremely inflammable character of what is known as cotton "wool," and it must be remembered that every Christmas at least one or two inquests are recorded as being held upon fatal cases of burning through cotton-wool used to represent snow. Grown-up people, moreover, if often careless with regard to children, are not less rash where they themselves are concerned. This year we have noticed the case of a clergyman who was injured by being burnt through his beard of cotton-wool catching fire while he was impersonating Father Christmas, and an inquest has since been held at Dover upon a young lady fatally burnt while representing the same character. In her case a robe of crimson flannelette caught fire. Christmas "dressing-up" in which snow figures as a seasonable adjunct to performances are not likely to be discontinued on account of such incidents as we have commented upon, but we should have thought that their universal popularity, combined with their obvious and proved danger, might suggest to some enterprising manufacturer the desirability of devising and advertising a non-inflammable substitute for cotton-wool.

EXAMINATION FOR LIFE ASSURANCE.

We have received a communication from a correspondent enclosing a medical examiner's report for a certain life assurance company and stating that he had declined the fee of 10*s*. 6*d*. which was offered him and claimed the sum of 21*s*., which the company refused to pay. The form which our correspondent was asked to fill up was an unnecessarily long one, and although most of the questions only required "Yes" or "No" for an answer, nevertheless the number of questions might perfectly well have been lessened. For instance, the medical examiner is requested to ask the applicant no less than 37 questions in regard to possible past illnesses and symptoms! Also, if the applicant is under 21, the collateral family history of uncles and aunts may be required, the health and ages of those living, and the ages at death and the cause of death of those who have died. The form, taken as a whole, is the longest and most detailed which we have seen, and to require such a form to be filled up, together with the necessary examination of the patient, for 10*s*. 6*d*., is certainly taking an unfair advantage of the medical examiner. We consider that a fee of not less than £1 1*s*. should always be paid for examination for life assurance. The companies who offer only 10*s*. 6*d*. when the sum assured is less than a certain amount fail to realise that the time and care devoted to the case by the examiner are just as great for the small sums as for the large. If for large amounts the fee were increased to £2 2*s*. there might be some excuse on the part of the companies who offer the lower fees, but such is not the case, and we consider that our correspondent was perfectly right in demanding the full fee of £1 1*s*. Another point raised by our correspondent is that of the companies referring to the ordinary medical adviser of the applicant should it be deemed advisable. Such a course is adopted by all insurance companies, we believe, but naturally a fee should be paid for the desired information.

BOVRIL PICTURES.

We have received from Bovril, Limited, a series of bonus pictures which they have selected for the current year. The framed artist proof of "The Pilgrims," by A. A. Dixon, is an excellent reproduction; the size of this gravure is 27½ × 19 in., and the full size of the paper is 40 × 30 in. The picture entitled "An Idyll," by Paul Gervais, is very good and full of detail. The original of this was painted for the town-hall of Toulouse and was exhibited in the Salon last year; this gravure measures 14 × 20 in. These pictures, including "The Joy of Spring," by Arthur J. Elsley, will attract attention, and credit is due to Messrs. C. W. Faulkner and Co., Limited, for such artistic reproductions.

Mr. W. C. Storey.—The manager of the Exchange in connexion with the Medical Library Association, which was mentioned in an annotation last week, is Miss M. C. Noyes, 1211, Cathedral-street, Baltimore, Maryland, U.S.A.

Communications not noticed in our present issue will receive attention in our next.

A DIARY OF CONGRESSES.

We shall publish this diary from time to time that our readers may have under their hands the dates of the approaching scientific Congresses. It is unnecessary to issue the lists of all these functions week by week, and we propose to make only such gatherings as will occur in the immediate future the subject of regular announcement. The following Congresses, Conferences, and Exhibitions are announced for the next few months:—

Jan. 20th–27th (Hong-Kong).—Second Biennial Congress of the Far Eastern Association of Tropical Medicine.

Feb. 13th–14th (London).—Central Poor-Law Conference.

March 7th–11th (Berlin).—Thirty-third Balneological Congress.

March 23rd–April 4th (London, Royal Agricultural Hall).—International Smoke Abatement Exhibition.

" (London).—First Congress of Pure Food and Health Society of Great Britain.

April 1st–7th (Tunis).—Twenty-second Congress of French-speaking Alienists and Neurologists.

Medical Diary for the ensuing Week.

SOCIETIES.

ROYAL SOCIETY OF MEDICINE, 15, Cavendish-square, W. (temporary address during building of new house).

MONDAY.

ODONTOLOGICAL SECTION (Hon. Secretaries—W. W. James, Stanley Mummery): at 8 P.M.

Paper:
Mr. J. F. Colyer: The Treatment of Periodontal Disease.

Casual Communications:
Mr. A. T. Pitts: Apparent Symmetrical Bifurcation of the Roots of the Upper Temporary Central Incisors.
Mr. Bertram B. Samuel: A Crowned Tooth with a Perforated Root.

TUESDAY.

MEDICAL SECTION (Hon. Secretaries—Sir John F. H. Broadbent, Bart., Robert Hutchison): at 5.30 P.M.

Paper:
Captain McCarrison, I.M.S.: The Vaccine Treatment of Goitre.

THURSDAY.

BALNEOLOGICAL AND CLIMATOLOGICAL SECTION (Hon. Secretaries—A. Manuel, F. A. de T. Mouillot): at 5.30 P.M.

Paper:
Dr. F. M. Sandwith: Bubonic Plague (illustrated by the epidiascope).

The subject being of general interest Members of other Sections are specially invited to attend.

FRIDAY.

SECTION FOR THE STUDY OF DISEASE IN CHILDREN (Hon. Secretaries—T. R. Whipham, H. S. Clogg, Percy G. Lewis), at 11, Chandos-street, W.: at 4.30 P.M.

Cases:
Mr. D. Drew: Five Cases illustrating the Results of Muscle-transplantation for Paralytic Talipes Valgus.
Dr. T. Thompson: Two Brothers with Hæmophilia.
Dr. E. Pritchard and Mr. S. Stephenson: Cerebellar Tumour.
And other Cases.

Paper:
Mr. P. Turner: The Radical Cure of Inguinal Hernia in Children.

EPIDEMIOLOGICAL SECTION (Hon. Secretaries—W. H. Hamer, G. S. Buchanan): at 8.30 P.M.

Papers:
Dr. R. J. Reece and Dr. H. Bruce Low: Poliomyelitis.

MEDICAL SOCIETY OF LONDON, 11, Chandos-street, Cavendish-square, W.

MONDAY.—8.30 P.M., Clinical Evening. Cases will be exhibited by Dr. A. C. D. Firth, Dr. F. Parkes Weber, Dr. Michels, Dr. F. S. Palmer, Mr. W. G. Howarth, Mr. E. M. Corner, and others.

HUNTERIAN SOCIETY, London Institution, Finsbury-circus, E.C.

WEDNESDAY.—9 P.M., Clinical and Pathological Evening.

OPHTHALMOLOGICAL SOCIETY, 11, Chandos-street, Cavendish-square, W.

THURSDAY.—8 P.M., Cases and Card Specimens will be shown by Mr. A. C. Roper, Mr. A. A. Bradburne, Mr. G. Coats, Mr. R. Batten, Mr. L. Pisani, and Mr. R. A. Greeves. 8.30 P.M., Papers:—Mr. J. H. Parsons and Mr. E. K. Martin: The Action of Ultra-violet Rays upon the Ciliary Body and Lens.—Mr. A. A. Bradburne: Hereditary Ophthalmoplegia in Five Generations.—Mr. G. Coats: On Crystal-like Bodies of Radiate Structure in the Lens.

LECTURES, ADDRESSES, DEMONSTRATIONS, &c.

MEDICAL GRADUATES' COLLEGE AND POLYCLINIC, 22, Chenies-street, W.C.

MONDAY.—4 P.M., Dr. J. L. Bunch: Clinique (Skin). 5.15 P.M. Lecture:—Mr. J. L. Mummery: Non-malignant Stricture of the Rectum.

TUESDAY.—4 P.M., Dr. H. Thursfield: Clinique (Medical). 5.15 P.M., Lecture:—Dr. H. Campbell: Alcoholism and its Treatment.

WEDNESDAY.—4 P.M., Mr. O. 'L. Addison: Clinique (Surgical). 5.15 P.M., Lecture:—Mr. A. H. Tubby: Surgical Treatment of Lesions of the Brachial Plexus.

THURSDAY.—4 P.M., Mr. A. Carless: Clinique (Surgical). 5.15 P.M., Lecture:—Sir G. H. Savage: Medico-Legal Relationships of General Paralysis.

FRIDAY.—4 P.M., Dr. J. D. Grant: Clinique (Ear, Nose, and Throat).

POST-GRADUATE COLLEGE, West London Hospital, Hammersmith-road, W.

MONDAY.—10 A.M., Dr. Simson: Diseases of Women. 10.30 A.M., Surgical Registrar: Demonstration of Cases in Wards. 12 noon, Dr. Bernstein: Pathological Demonstration. 2 P.M., Medical and Surgical Clinics. X Rays. Operations. 2.30 P.M., Mr. Dunn: Diseases of the Eye. 5 P.M., Lecture:—Dr. G. Stewart: Clinical (Lecture I.).

TUESDAY.—10 A.M., Dr. Robinson: Gynæcological Operations. 11.30 A.M., Mr. Etherington-Smith: Demonstration of Minor Operations. 2 P.M., Medical and Surgical Clinics. X Rays. Operations. Dr. Davis: Diseases of the Throat, Nose, and Ear. 2.30 P.M., Dr. Abraham: Diseases of the Skin. 5 P.M., Lecture:—Dr. Davis: Diseases of the Nose. (Lecture III.)

WEDNESDAY.—10 A.M., Dr. Saunders: Diseases of Children. Dr. Davis: Operations of the Throat, Nose, and Ear. 10.30 A.M., Surgical Registrar: Demonstration of Cases in Wards. 2 P.M., Medical and Surgical Clinics. X Rays. Operations. Mr. B. Harman: Diseases of the Eye. 2.30 P.M., Dr. Simson: Diseases of Women. 5 P.M., Lecture:—Dr. Bernstein:—Blood Examination—Morphology.

THURSDAY.—10 A.M., Dr. Simson: Gynæcological Demonstration. 12.15 P.M., Lecture:—Dr. G. Stewart: Practical Medicine. 2 P.M., Medical and Surgical Clinics. X Rays. Operations. 2.30 P.M., Mr. Dunn: Diseases of the Eye. 5 P.M., Lecture:—Mr. Baldwin: Practical Surgery. (Lecture II.)

FRIDAY.—10 A.M., Dr. Robinson: Gynæcological Operations. 2 P.M., Medical and Surgical Clinics. X Rays. Operations. Dr. Davis: Diseases of the Throat, Nose, and Ear. 2.30 P.M., Dr. Abraham: Diseases of the Skin. 5 P.M., Lecture:—Dr. Saunders: Clinical (with cases).

SATURDAY.—10 A.M., Dr. Saunders: Diseases of Children. Dr. Davis: Operations of the Throat, Nose, and Ear. Mr. Bishop Harman: Diseases of the Eye. 10.30 A.M., Medical Registrar: Demonstration of Cases in Wards. 2 P.M., Medical and Surgical Clinics. X Rays. Operations.

NORTH-EAST LONDON POST-GRADUATE COLLEGE, Prince of Wales's General Hospital, Tottenham, N.

MONDAY.—Clinics:—10.30 A.M., Surgical Out-patient (Mr. E. Gillespie). 2.30 P.M., Medical Out-patient (Dr. T. R. Whipham): Nose, Throat, and Ear (Mr. H. D. Gillies). 3 P.M., Clinical Pathology and Pathological Demonstration (Dr. W. H. Duncan).

TUESDAY.—Clinic: 2.30 P.M., Operations. Clinics:—Medical Out-patient (Dr. A. G. Auld); Surgical (Mr. Howell Evans); Gynæcological (Dr. A. B. Giles). 3.30 P.M., Medical In-patient (Dr. A. J. Whiting). 4.30 P.M., Lecture:—Mr. F. Trewby: The Causes of Death under Anæsthesia at the Time of Operation and After.

WEDNESDAY.—Clinics:—2 P.M., Throat Operations (Mr. Gillies). 2.30 P.M., Children's Out-patient (Dr. T. R. Whipham); Skin (Dr. G. N. Meachen): Eye (Mr. R. P. Brooks). 3 P.M., X Rays (Mr. W. Steuart); Clinical Pathology and Pathological Demonstration (Dr. W. H. Duncan). 5.30 P.M., Eye Operations (Mr. Brooks).

THURSDAY.—2.30 P.M., Gynæcological Operations (Dr. A. B. Giles). Clinics:—Medical Out-patient (Dr. A. J. Whiting); Surgical (Mr. Carson). 3 P.M., Medical In-patient (Dr. G. P. Chappell). 4.30 P.M., Lecture:—Mr. F. Trewby: The Points which Determine the Choice of Anæsthetics for Surgical Operations.

FRIDAY.—2.30 P.M., Operations. Clinics:—Medical Out-patient (Dr. A. G. Auld): Surgical (Mr. E. Gillespie); Eye (Mr. R. P. Brooks). 3 P.M., Medical In-patient (Dr. R. M. Leslie); Clinical Pathology and Pathological Demonstration (Dr. W. H. Duncan).

LONDON SCHOOL OF CLINICAL MEDICINE, Dreadnought Hospital, Greenwich.

MONDAY.—2 P.M., Operations. 2.15 P.M., Mr. Turner: Surgery. 3.15 P.M., Sir Dyce Duckworth: Medicine. 4.30 P.M., Mr. R. Lake: Ear and Throat. Out-patient Demonstrations:—10 A.M., Surgical and Medical. 12 noon, Ear and Throat.

TUESDAY.—2 P.M., Operations. 3.15 P.M., Dr. R. Wells: Medicine. 2.15 P.M., Mr. R. Carling: Surgery. 4.15 P.M., Sir M. Morris: Diseases of the Skin. Out-patient Demonstrations:—10 A.M., Surgical and Medical. 12 noon, Skin.

WEDNESDAY.—2 P.M., Operations. 2.15 P.M., Dr. F. Taylor: Medicine. 3.30 P.M., Mr. Cargill: Ophthalmology. Out-patient Demonstrations:—10 A.M., Surgical and Medical. 11 A.M., Eye. 5 P.M., Special Demonstration (or Lecture):—Mr. McGavin: Surgical.

THURSDAY.—2 P.M., Operations. 2.15 P.M., Dr. G. Rankin: Medicine. 3.15 P.M., Sir W. Bennett: Surgery. Out-patient Demonstrations:—10 A.M., Surgical and Medical. 12 noon, Ear and Throat. 4.30 P.M., Special Lecture:—Dr. G. Holmes: Functional and Organic Paralysis.

FRIDAY.—2 P.M., Operations. 2.15 P.M., Sir J. Rose Bradford: Medicine. 3.15 P.M., Mr. McGavin: Surgery. Out-patient Demonstrations:—10 A.M., Surgical and Medical. 12 noon, Skin.

SATURDAY.—10 A.M., Radiography. 11 A.M., Dr. A. Davies: Pathological Demonstration. 2 P.M., Operations. Out-patient Demonstration:—10 A.M., Surgical and Medical. 11 A.M., Eye.

HOSPITAL FOR SICK CHILDREN, Great Ormond-street, W.C.

THURSDAY.—4 P.M., Lecture:—Dr. Thompson: Typhoid Fever in Infancy and Childhood.

ST. JOHN'S HOSPITAL FOR DISEASES OF THE SKIN, 49, Leicester-square, W.C.

TUESDAY.—6 P.M., Dr. K. Sibley: Eczema.

THURSDAY.—6 P.M., Chesterfield Lecture:—Dr. M. Dockrell: Coccus Diseases—I., Impetigo Contagiosa; II., Furuncle; III., Carbuncle; IV., Coccogenic Sycosis.

ROYAL INSTITUTION OF GREAT BRITAIN, Albemarle-street, Piccadilly, W.

TUESDAY.—3 P.M., Prof. W. Bateson: The Study of Genetics. (Lecture II.)

FRIDAY.—9 P.M., Prof. B. Hopkinson: The Pressure of a Blow.

ROYAL SANITARY INSTITUTE, 90, Buckingham Palace-road, S.W.

WEDNESDAY.—4 P.M., Dr. M. S. Paterson: Employment of Patients in Sanatoria 4.30 P.M., Dr. D. J. Williamson: Anti-Tuberculosis Dispensaries.

FRIDAY.—4 P.M., Prof. R. P. Williams: Open Air Schools (illustrated by lantern slides).

ANCOATS HOSPITAL, Manchester.

THURSDAY.—4.15 P.M., Dr. W. J. S. Bythell: The X Ray Diagnosis of Œsophageal Obstruction, with Fluorescent Screen. (Post-Graduate Clinic.)

MANCHESTER ROYAL INFIRMARY.

MONDAY.—4.30 P.M., Dr. E. S. Reynolds: Banti's Disease and Hodgkin's Disease.

FRIDAY.—4.30 P.M., Mr. J. W. Smith: On the Result of Some Operations on the Stomach.

OPERATIONS.

METROPOLITAN HOSPITALS.

MONDAY (22nd).—London (2 P.M.), St. Bartholomew's (1.30 P.M.), St. Thomas's (3.30 P.M.), St. George's (2 P.M.), St. Mary's (2.30 P.M.), Middlesex (1.30 P.M.), Westminster (2 P.M.), Chelsea (2 P.M.), Samaritan (Gynæcological, by Physicians, 2 P.M.), Soho-square (2 P.M.), Gt. Northern Central (2.30 P.M.), West London (2.30 P.M.), London Throat (9.30 A.M.), Royal Free (2 P.M.), Guy's (1.30 P.M.), Children, Gt. Ormond-street (9 A.M.), St. Mark's (2.30 P.M.), Central London Throat and Ear (Minor 9 A.M., Major 2 P.M.).

TUESDAY (23rd).—London (2 P.M.), St. Bartholomew's (1.30 P.M.), St. Thomas's (3.30 P.M.), Guy's (1.30 P.M.), Middlesex (1.30 P.M.), Westminster (2 P.M.), West London, (2.30 P.M.), University College (2 P.M.), St. George's (1 P.M.), St. Mary's (1 P.M.), St. Mark's (2.30 P.M.), Cancer (2 P.M.), Metropolitan (2.30 P.M.), London Throat (9.30 A.M.), Samaritan (9.30 A.M. and 2.30 P.M.), Throat, Golden-square (9.30 A.M.), Soho-square (2 P.M.), Chelsea (2 P.M.), Children, Gt. Ormond-street (9 A.M. and 2 P.M., Ophthalmic, 2 P.M.), Tottenham (2.30 P.M.), Central London Throat and Ear (Minor, 9 A.M., Major, 2 P.M.), Royal National Orthopædic (9.30 A.M. and 4 P.M.).

WEDNESDAY (24th).—St. Bartholomew's (1.30 P.M.), University College (2 P.M.), Royal Free (2 P.M.), Middlesex (1.30 P.M.), Charing Cross (3 P.M.), St. Thomas's 2 P.M.), London (2 P.M.), King's College (2 P.M.), St. George's (Ophthalmic, 1 P.M.), St. Mary's (2 P.M.), St. Peter's (2 P.M.), Samaritan (9.30 A.M. and 2.30 P.M.), Gt. Northern Central (2.30 P.M.), Westminster (2 P.M.), Metropolitan (2.30 P.M.), London Throat (9.30 A.M.), Cancer (2 P.M.), Throat, Golden-square (9.30 A.M.), Guy's (1.30 P.M.), Royal Ear (2 P.M.), Children, Gt. Ormond-street (9 A.M. and 9.30 A.M., Dental, 2 P.M.), Tottenham (Ophthalmic, 2.30 P.M.), West London (2.30 P.M.), Central London Throat and Ear (Minor, 9 A.M., Major, 2 P.M.).

THURSDAY (25th).—St. Bartholomew's (1.30 P.M.), St. Thomas's (3.30 P.M.), University College (2 P.M.), Charing Cross (3 P.M.), St. George's (1 P.M.), London (2 P.M.), King's College (2 P.M.), Middlesex (1.30 P.M.), St. Mary's (2.30 P.M.), Soho-square (2 P.M.), North-West London (2 P.M.), Gt. Northern Central (Gynæcological, 2.30 P.M.), Metropolitan (2.30 P.M.), London Throat (9.30 A.M.), Samaritan (9.30 A.M and 2.30 P.M.), Throat, Golden-square (9.30 A.M.), Guy's (1.30 P.M.), Royal National Orthopædic (9 A.M. and 3.30 P.M.), Royal Ear (2 P.M.), Children Gt. Ormond-street (9 A.M. and 2 P.M.), Tottenham (Gynæcological, 2.30 P.M.), West London (2.30 P.M), Central London Throat and Ear (Minor, 9 A.M., Major, 2 P.M.).

FRIDAY (26th).—London (2 P.M.), St. Bartholomew's (1.30 P.M.), St. Thomas's (3.30 P.M.), Guy's (1.30 P.M.), Middlesex (1.30 P.M.), Charing Cross (3 P.M.), St. George's (1 P.M.), King's College (2 P.M.), St. Mary's (2 P.M.), Ophthalmic (10 A.M.), Cancer (2 P.M.), Chelsea (2 P.M.), Gt. Northern Central (2.30 P.M.), West London (2.30 P.M.), London Throat (9.30 A.M.), Samaritan (9.30 A.M. and 2.30 P.M.), Throat, Golden-square (9.30 A.M.), Royal National Orthopædic (3.30 P.M.), Soho-square (2 P.M.), Children, Gt. Ormond-street (9 A.M., Aural, 2 P.M.), Tottenham (2.30 P.M.), St. Peter's (2 P.M.)., Central London Throat and Ear (Minor, 9 A.M., Major, 2 P.M.).

SATURDAY (27th).—Royal Free (9A.M.), London (2 P.M.), Middlesex (1.30 P.M.), St. Thomas's (2 P.M.), University College (9.15 A.M.), Charing Cross (2 P.M.), St. George's (1 P.M.), St. Mary's (10 A.M.), Throat, Golden-square (9.30 A.M.), Guy's (1.30 P.M.), Children, Gt. Ormond-street (9 A.M. and 9.30 A.M.), West London (2.30 P.M.).

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THE INDEX TO THE LANCET.

The Index and Title-page to Vol. II. of 1911 were given in THE LANCET of Dec. 30th, 1911.

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(Taken daily at 8.30 a.m. by Steward's Instruments.)

THE LANCET Office, Jan. 17th, 1912.

Date.	Barometer reduced to Sea Level and 32° F.	Direction of Wind.	Rain fall.	Solar Radio in Vacuo.	Maximum Temp. Shade.	Min. Temp.	Wet Bulb.	Dry Bulb.	Remarks.
Jan. 11	30·07	S.W.	...	53	48	42	43	45	Cloudy
,, 12	30·27	S.W.	0·02	51	47	42	42	43	Overcast
,, 13	30·15	S.E.	0·04	51	49	43	45	45	Raining
,, 14	30·05	W.	0·01	45	45	43	42	44	Overcast
,, 15	29·91	S.	...	49	47	44	44	45	Overcast
,, 16	29·77	S.E.	...	48	46	44	43	44	Overcast
,, 17	29·89	E.	0·30	40	39	48	37	38	Raining

The following journals, magazines, &c., have been received:—Journal of State Medicine, Proceedings of the Royal Society, Bulletins et Mémoires de la Société de Radiologie, International Journal of Surgery, Archives de Médecine et de Pharmacie Militaires, La Clinique Ophtalmologique, Revue de Gynécologie, London Hospital Gazette, British Journal of Dental Science, Probe, Indian Medical Journal, Practitioner, Women's Industrial News, Monthly Cyclopædia, Indian Medical Gazette, Public Health, Annales des Maladies des Organes, Génito-Urinaires, Journal of Laryngology Rhinology, and Otology, Northwestern University Bulletin, Symons's Meteorological Magazine, American Journal of Gastro-enterology, St. Paul's Medical Journal, Critic and Guide, Hospital Gazette, L'Hygiène de la Viande et du Lait, Albany Medical Annals, Archives of Pediatrics, Canadian Journal of Medicine and Surgery, Philippine Journal of Science, Military Surgeon, Maryland Medical Journal, Clinical Medicine, Malay Medical Journal, Universal Medical Record, American Journal of Obstetrics, Archives Internationales de Neurologie, Medical Review, Annals of Tropical Medicine and Parasitology, Tuberculosis, Indian Medical Record, South African Medical Record, Transactions of the Society of Tropical Medicine and Hygiene, Bulletins et Mémoires de la Société Médicale des Hôpitaux de Paris, Journal of Anatomy and Physiology, and St. George's Hospital Gazette.

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A Lecture
ON
THE MENTAL PROCESSES IN SANITY AND INSANITY.

Delivered at the Medical Graduates' College and Polyclinic on Dec. 14th, 1911,

BY T. CLAYE SHAW, M.D. LOND., F.R.C.P. LOND.,

EMERITUS LECTURER ON PSYCHOLOGICAL MEDICINE, ST. BARTHOLOMEW'S HOSPITAL.

GENTLEMEN,—Whenever we try to prove a person insane, whether for purposes of certification or for any other reason, we endeavour to elicit the presence of actions which are at variance with the best interests of himself and the community, and if possible the presence of delusions or false ideas, not because they are of necessity the only stigmata of unsoundness of mind, but because they afford the most manifest and the most easily appreciated reasons for appealing to the friends, or possibly to a jury, who want to be satisfied that justice is being done and the law complied with.

MENTAL PROCESSES IN INSANITY AN ORDERLY DISARRANGEMENT.

Let us try to enter, if possible, into the mind of the lunatic, to see if there is really any mystery in the condition, any process of action different from that of the ordinary thinker who is said to be in his right mind, or whether, when a person is said to "have a screw loose somewhere" the expression is the true one, suggesting the result of a fault in the machinery, which result is, however, a necessary one, and can express itself in the only way in which it is doing.

If the connecting-rod of a locomotive breaks whilst the machine is at work we ought not to call it an accident if the line is torn up and the train derailed; we should say that such and such events are the proper results of the existing structural alteration, and that if there had been no such inconvenient manifestations there certainly ought to have been, and we look to see why they did not occur—the astonishment would be not that they did come about, but if they did not! If force of any kind is disturbed or diverted from its usual form of demonstration it expends itself in what we call vagaries, but which are really the only modes possible to the existing states of things; in fact, there is just as much order in destruction as there is in propriety, and the one acts in obedience to laws in the same way as the other does.

It matters not whether the motive power is too weak or too strong for its correlated machinery, nor whether it is the machinery itself which is defective; in the one case, as in the other, we have paralysis or destruction, but in either case there is obedience to natural laws, though the product is not that which we want. So it is with what we call insanity or disordered mental state.

The insane person is really sane in his type, he is saying or doing the only thing possible to his existing conditions, he is the exponent of an orderly disarrangement, though it happens that this ordered form of action is one that renders the individual a menace to himself or to his surroundings, and makes it necessary that he must be put out of action for a time; so we either restrain him, which is like putting on the most powerful brakes, or we shut off the motive power by placing him under conditions which starve it.

AUTOMATIC AND VOLUNTARY ELEMENTS IN THE HUMAN MECHANISM.

In dealing with inanimate objects we have an easy task—we can so alter what is wrong (i.e., what we consider undesirable) as to secure an ordered performance of a different kind; but when we come to deal with organised matter and with that force which some call life the problem is changed, because in the first place we are incomplete in knowledge of the details of the machinery, and next we know nothing of the vital principle itself.

To the inanimate world we ourselves supply the vital force which we connect or disrupt at pleasure, but with the organic system we find a combination which is only in part subordinate—a man may control his actions, but he cannot by thought limit the growth of his finger-nails nor add a cubit to his stature. In the organic world much that goes on is automatic, growth and decay proceed according to their own conditions of supply and demand, and all the individual can do is to go as far as possible in adjusting the balance, though in doing this he often fails miserably, because he has in many instances only an imperfect knowledge of the conditions which necessitate the result which he desires.

Though the human mechanism is a mixture of the voluntary and the automatic, we must bear in mind that the latter is the dominant and tends to invade the territory of the former, and this may develop to such an extent that the voluntary element is almost completely eclipsed, and it is during this process of invasion that we see the display of irregular processes—irregular, that is, in so far as they present a condition which is undesirable and inconsistent with the welfare of the individual, but perfectly law-abiding in its inception and continuance.

CONFLICT BETWEEN AUTOMATISM AND VOLUNTARY ELEMENT.

The rising conflict between automatism and control is a guide as to what is happening in the mental processes, for as control is less called upon automatism must increase. Monotony, the continuous working on the same lines, tends to reduce the whole system of nervous action to one level of automatic action, and it is only by constant change in the higher thoughts and processes that the abject slavery imposed by this disposition to automatism and habit can be prevented.

If necessary to prove this we have only to look at what goes on around us. Left to itself the world of mental and bodily processes goes on without change, just as does the rising or setting of the stars and the planets—the labourer goes through his task without a thought as to what he is doing, what has to be done now is the same as what was done yesterday, his consciousness is hardly called upon and his will is not invoked.

But this Eden of happiness, this absence of worry, is interrupted by such an interloper as education: the intervention of disseminators of ideas attempts to excite new processes which shall counteract the contented repose of automatism, and shall stir up fresh emotions and promote that restlessness which is the sign of force diverted into new paths; the friction with custom brings about uncertainty in the place of the placid restfulness of habit.

Automatism has its evils, it makes people sit still under the grinding influence of oppression, it maintains what is called "order" but what is really injustice, it is the tyranny of the strong over the weak. All the same, it is coördinated action, the observance of sequence in cause and effect, and as such it is a natural system; but when new ideas are introduced the old order is broken up, a new force arises which has to smash up old associations, to disrupt the grooved channels, to create new consciousness in the place of stale modality; and in the accomplishment of this there reigns for a time what is called "disorder," a difficulty of gauging exactly what is going to happen, because the new motives act with the irregularity of streaks of lightning, driven out of their direct course by the encounter of resistances at unknown and unexpected points, but all tending to settle down into organised courses as soon as the ways for these have been made straight.

MENTAL PROCESSES IN MEN WITH NEW IDEAS.

There is then no such thing as "disorder"; everything is regulated, and it is only our imperfect knowledge of the way in which cause and effect interact which limits our forecast of what must happen by absolute necessity. Thus, it comes about that the people whose business it is to cultivate individualism and destroy automatism are those who least know their own minds; by their very perseverance in inculcating their new dogmas they but form habits for themselves, they tend to develop monoïdeism, which from its refusal to entertain antagonistic arguments does but, after all, consolidate them into a settled process which is nothing but a new automatism.

What a state of unrest, then, is that of the man who is always seeking to form new associations and new channels of outlet for his compelling personality! For him there is no stability; he is buffeted about by this or that new concept which in its efforts to materialise itself, to make itself an applicable asset, sets up much internal commotion in the

agent; it makes him mysterious and, at first, unintelligible, often misjudged and repudiated, and though he may eventually be proved to be correct he must pass through a period of probation, during which the new tracts of his teaching are opened up and the disturbed automatism of his hearers has to adjust itself to new obligations.

So it comes about that the genius, the man of new ideas, the man who has to *think* and to feed the market of indolent inertia with the element of disturbance, must be in a constant turmoil, dissatisfied and progressive, apt to break down under the strain of his *vis viva*, and will be often referred to as a faddist or an irresponsible partisan. When these promoters of new ideas are successful in adding to the happiness, the health, and the prosperity of those sections of humanity with which they come in contact they are called saviours of society, benefactors, and humanitarians; when they fail they are called cranks and lunatics; but in either case the machinery is correct in its action, though it may be diverted from the mode most desirable in certain interests.

CONSIDERATION OF PARADOX: "THERE IS NO SUCH THING AS INSANITY."

You may have heard the paradox that "there is no such thing as insanity." In a sense this is a perfectly true statement. An "insane" act, an "insane delusion" is the necessary result, and the only one possible in a given state; there is then no "insanity" in it, the "insanity" would be if what is viewed as disorder did *not* happen. To call that "insanity" which is nothing but the necessary action of a certain combination is a misuse of terms; it is applying to the one part of a whole process a term which if used at all should be confined to the primary agent of the inevitable course which we deplore.

Suppose a man who has the delusion that he can arrest force at any moment drives an engine at full speed into the "stop" at a terminus station so that he may demonstrate his supposed power, we all know what the result would be; and it would be called a mad act. But the act itself is not a mad one, the madness lies in the motive; just as it would be called a wicked act if done from motive of revenge, or an act of bad judgment if done from a wrong appreciation of the laws of motion. But further, the delusion, or the wicked thought, or the erroneous judgment is itself a necessary result of certain conditions acting in the only manner possible, and as we do not understand what these conditions are we find ourselves using different terms for what may after all be the same thing.

The same mal-appreciation of the action of established law holds in general estimation of the world's past and present history—it is no uncommon thing to blame God or the Devil when death ensues upon disease or in catastrophes. If a miner takes off the cap of his safety lamp to light his pipe an explosion of gas, if it is in sufficient quantity, follows—it would be wrong if it did not.

We cannot live on the continual exhibition of miracles, nor can we expect that supplication to the Powers above or below will enable us to fire a shot unless we keep the powder dry. What we want to arrive at is, then, the cause which sets the machinery of action on the wrong track—it may be a flaw or defect of the mechanism, or it may be in the motive power itself, and this it may be quite out of our scope to subordinate and direct.

DIFFERENT VIEWS ON PSYCHOLOGY.

Much depends upon the views we adopt in our psychology. If we are of the school which recognises an apperceptive process, a will-power, a spiritual element, we are to all purposes impotent. If we do not know what will-power is, how are we to control it, where to begin, or what agent to employ to counteract excess or to stimulate flagging energy? All we can do is to pray that our courses may be directed in the right grooves.

If, on the other hand, we belong to the material school which says that the body contains in itself all that is necessary for its own government, which repudiates a conative factor outside existing and internal bodily processes, rejecting such agents as will, spiritual side of mind, power of attention, &c., reducing in fact the action of mind to integrity of bodily processes, then the matter may be easier to understand, because the man who is acting strangely is doing so because of some structural alteration which we may be able to remedy; whereas on the alternative theory we may be paralysed in diagnosis or treatment because we have no fulcrum on which to place the lever.

Evidently it is very important to settle which of the two theories is correct, for until it is decided a science of mental diagnosis and therapeutics is out of the question. The truth lies probably in a combination or interaction of the two theories—that which at first required a directing agency becomes at last independent, acts automatically, and comes to a greater extent under handling, but there still remains the inscrutable agency which (according to many) we cannot materialise, which, for aught that is known, is capricious in its selections and its processes, though if it exists it must be obedient to laws of its own with a scope of action on settled lines from which there is no straying.

Whoever can in a convincing way show which is the true theory or the nature of the immaterial conative process—if there is one—will have solved the mystery of ages and opened up the secret ways to the stronghold which we in the present day can no more nearly approach than could the philosophers of old. I am not forgetting that the clergy say that the problem is already solved, but even if we acknowledge that we must accept authority and believe in the existence of a "spiritual body," let it still be remembered that it remains at that, and nothing of its real nature or action is available to us.

NATURE OF DELUSIONS.

If we examine closely the nature of the delusions in a person who is in delirium or in the acute mental disturbance which is called insanity, we note that they are especially connected with the most recent topics, matters that have not had time to become automatic, such as political and social events of great urgency at the moment, murders, strikes, big functions and celebrations, aeroplanes, prominent personages, whilst the old ideas and acts which have formed the automatic life of the patient, those which are indeed his character, are in the background or not conspicuously prominent. I do not say that the old storehouse of thought and conduct is never invaded, but that it is much less frequently so than the newer tracts, perhaps because having become automatic they are less likely to be affected by transitory causes, they are more resistive to interference.

It is in the order of things that these prominent and compelling new ideas express themselves in connexion with the language areas, and should therefore issue with a volubility proportionate to their intensity, and, moreover, it must follow that the patient hears what he says, and his attention is called to the action of these speech-centres until at last he comes to believe in what he hears, and acts upon it.

In all this there is nothing abnormal nor different from the ordinary mental processes. All of us act in the same way—we have our ordinary, or even new, ideas which connect themselves with speech-expression, and draw our attention more or less according as they are new or old. The only difference between the sane and the insane person is that the latter cannot arrest or change the current of his processes, whilst the former can; the latter has lost his brake-power, but the former retains it—the latter is helpless either because the driver is incapacitated and cannot make use of the machinery, or else the brake itself is unfit to act upon structures which it is now unable to control, and so the new state will go on until some change is brought about which shall restore the old necessity—the new necessity may mean ruin, desolation, and disorder, but it is what we expect, and should be surprised at if it did not follow.

The clue, then, to what is going on in the mind of an insane person is to be found by following up his speech and actions until we arrive at the ultimate state which alone could cause them, for there the trouble lies, and not in the manifestations which set up so much alarm, but which are really nothing but danger-signals—and this eventually comes to an inquiry into motives.

SANE AND INSANE MOTIVES.

It is not always easy to say what is a sane and what an insane motive, because either may issue in the same external process.

For instance, a simply wicked person, being desirous of securing some result advantageous to himself, deliberately plans a murder and realises it. The insane person is the victim of an internal process which sets in action the same intermediary processes as those which would be used if the

action were one of free will. There is, however, this difference between the two, the insane person, as long as the condition lasts, must act in the direction of his compelling ideas, the sane but wicked person has his ideas in check; he can dispose them as seems most fitting for his ultimate ends; the former is a compelled agent who just does what he has no power to prevent and does it utterly regardless of the surroundings, the latter is a discriminator who chooses his time and methods.

CONDUCT OF A LUNATIC.

We can never forecast what will be the conduct of a lunatic because we cannot tell what may become primary and compelling motives, but if we have a clue given as to the nature of his conversation and his acts we can often argue back to the necessary idea which is the complement of the process and thus obtain a connected chain of the whole series of events. In many ways the insane person acts against his own interests—he must do so—his compelled ideas express themselves in words against his true interests, he reveals his life the details of which he has hitherto kept secret, he accuses himself of crimes which he has never committed, he actually does things which rush him on to self-immolation or the sacrifice of others, and all because some temporary internal process touches off some arrangement, releases a coiled-up spring whose potential energy was never intended to be started by caprice.

It is not an uncommon thing to find after stirring social cataclysms, such as emotional revivals or startling murders, that ordinary persons come forward and accuse themselves of the commission of crimes which it is afterwards proved they could not have done. You can never trust a lunatic or a person under the influence of strong emotion, for this reason—viz., that the processes in action are identical: the former is under the stress of an idea which is more or less constantly working out its own career in its own way; the latter is for the time (it may be momentary) under the impulse which unravels itself in the way easiest open to it, and the only difference between the two individuals is in the persistent or the temporary condition of the exciting motive—the processes of exposition are the same.

PROMINENT MENTAL PROCESSES IN THE INSANE.

To think continually in a certain way is to imitate the process which is going on in the insane person. A sane person who is in the habit of saying that he has done such and such a thing is apt to believe, when in reality he has not, at last that he really has so acted. Of course, he is at the first a liar, and he knows that he is; but from constant repetition the knowledge that he has *not* fades before the persistent iteration that he *has*, so that at last, coming to believe and even to act upon the belief, he ceases to be a liar and is just an automaton. I find no difference between his mental process and that of the lunatic.

ALTERATION OF INTENSITY OF EMOTION.

The other prominent mental process in insanity is alteration in the intensity of emotion. Of the exact nature of emotion or feeling we are ignorant, but perhaps the way of looking at it which best serves us is to view the process as a sort of tone mixed up in an intimate way with certain ideas—thus ideas of wealth, of success, of relationship with certain individuals have a pleasant emotional tone; and ideas of loss, of danger, of injury, of anger, of moral wrong, have an unpleasant emotional tone. Further than that we do not seem able to go; anyhow, it is enough for our present purpose.

It follows as a necessary consequence that the re-excitement of ideas which already have a structural basis must at the same time re-excite the emotional tone. But individuals vary much in the intensity of the emotional tone associated with an idea; apparently the same idea will in one person be associated with a moderate amount of pleasure, grief, or anger, whilst in another the equivalent idea will be attended with an extraordinary outburst of enthusiasm, grief, or revenge. And it is not easy to say what is the special determinant of these two phases.

Emotion (as the etymology of the word implies) is the great determinant of action. It is very strong in enthusiasts and faddists, and often leads them to extravagance of conduct and diction in the accomplishment of their ideal; on the sexual side it occasionally ends in murder or suicide, in the latter case a jury gives the victim the benefit of the doubt, and says that he was in a state of temporary insanity, in the former it sends him for trial and very often executes him.

A man with ideas of persecution (which may be true in fact) takes steps to assault or to rid himself of his persecutors, and for a demonstration in this direction he is penalised by the law; an insane person who imagines that he is persecuted behaves in the same way and comes under the cognisance of the law. So similar are the two processes that there often arises much difficulty in discriminating between them, in saying in fact which of the two is the lunatic.

EXAMPLES OF LOSS OF MORAL SENSE.

I suppose there is no class of persons so liable to loss of moral sense—in other words, so susceptible to emotional desire of possessing—as "collectors," especially where art treasures are concerned. I know a gentleman of great intellectual power and a well-known "collector" of curios of a certain kind. On one occasion, on attending an exhibition of curios in his own especial line he took the opportunity to purloin an article and go away with it. He was, however, noticed by an attendant, and when the next day a bill for the price of the appropriated article was sent in it was promptly paid.

Everyone is familiar with the manner in which some collectors of curios, bric-à-brac, and old china scour the old farmhouses and cottages in the country in the endeavour to pick up a bargain. The poorer the owner, the less hesitation has the prospective possessor to offer the smallest price, knowing at the time that he is minimising the real value of what he wants. It is a question whether such an act comes under the head of honest dealing—whether, in fact, it is not a display of normal ineptitude, a process in no way different from that of the lunatic who sacrifices moral obligation to the accomplishment of impulsive desire.

HOW THE REAL CHARACTER OF MAN IS KNOWN.

There is nothing new in modern thought; we think and act in the same terms as did our ancestors, and we only know the real character of men by the results of the action due to emotional tone. What the insane man really teaches us is the mind of to-day; he lays bare without hesitation his mental processes, and, therefore, we know him; but the mind of the ordinary man we do not know until he comes under the influence of the same processes as the insane person, and this he does when through ambition, personal or altruistic aggrandisement, he says what when the impulsive state has passed he either does not remember or denies. It is a kind of sane-insane action; and remember that the insane person is usually a compound of processes.

Consider the case of the ambitious man—it matters not in what walk of life; he is absolutely monoïdeistic, nothing is allowed to stand in his way, an end has to be compassed, and he is ruthless in his processes of accomplishment. He becomes selfish and unpatriotic. What is it to him that the feelings and the interests of others suffer! In his eagerness for self-advancement he overrides the scruples of the cautious, whom he nicknames timid and retrograde. Everything must go down before his leaping egotism. He recks not the warnings and supplications of the downtrodden necks over which he steps to the realisation of his goal. His function is to crush more and more, and still to keep on crushing until he has raised a mangled platform upon which he may celebrate the triumph of his obsession.

Another man, under the idea that he is all-powerful, does his best to assert his position. As far as he can he lays his plans so as to demonstrate his superiority; he destroys what interferes with or tries to check his self-aggrandisement; and it is no more to him than it is to the ambitious one that suffering and destruction strew the path over which he passes.

What is the difference between the mental processes of these two men? None that I can see, except that the one tries to keep his goal, the other to attain one. Yet the one is called insane and no attention is paid to him, whilst the other suns himself with equal self-satisfaction in the flattery of his friends or the curses of his victims.

It is often difficult to understand politicians. We think that they are dissembling owing to the exigencies of party politics. But now and then they are led by emotional or by environmental stress to say what they did not intend; they let themselves go, and then their true nature is revealed. We

know what manner of man they really are; their temporary loss of control has unmasked them.

PSYCHOLOGY OF WAYS OF CELEBRATING GREAT OCCASIONS.

Consider for a moment the psychology of our methods of celebrating great occasions. Truly we are of conglomerate formation! We notify our times of excitement and depression in either a constructive or a destructive fashion. On the one hand, we erect statues, establish memorial homes, or build hospitals or churches, to be the vicarious expressions of the prevailing emotions. On the other hand, we celebrate the event by acts of destruction. We do not go so far as to immolate our weaker kind nor even to make the sacrificial offering of bullocks and rams, but we do vent our energy on inanimate objects. We burn tons of gunpowder in fireworks and artillery, we disperse millions of electric units in illuminations, we consume forests of wood in bonfires, we slaughter thousands of cattle and fowls for feasting and revelry.

ROMAN AND MODERN METHODS OF PUBLIC REJOICING.

A Roman Emperor held public butcherings of gladiators, whilst we content ourselves with mimic naval and military displays and athletic strife of a more peaceful character, but still we promote lavish expenditure of money in display of dress and pageantry, we gorge the thoroughfares to a dangerous extent by whetting the curiosity of unmanageable crowds, and we are only satisfied when the cauldron of excitement is kept seething for hours until the whipped-up energy exhausts itself and fizzles out from sheer expenditure of substance.

The cooler moments of evolved civilisation have made it clear that cruelty and destructiveness are not legitimate modes for the working-off of excitement, but they have taken into account the fact that human nature is at root much the same as it ever was, and that if the display of it is to be prevented force has to be used and the nascent trend of excitement must be nipped in the bud by the law.

Surely some of these demonstrations look like the acts of madmen; indeed, if we saw madmen doing them we should agree that they were mad acts, and yet they occur in our midst and no one accuses the perpetrators of insanity.

NEED OF CONTROL OF EMOTIONS.

Our emotions and feelings are of the greatest benefit and efficiency as causes of display of energy when they are kept within proper bounds, but they may be dangerous when not controlled; in all people there are times when they seem to get out of hand.

A suffragette, from motives of revenge because she cannot obtain what she desires and says she is entitled to, and obsessed with the idea that by acts of violence she will get attention to, and sympathy with, her cause, breaks windows and assaults authorised agents of the law. She goes to prison, refuses food and has to be fed artificially. A patient in an asylum because of a grievance smashes glass or assaults an official in order to draw notice to his case; he may refuse food from the idea that he is giving trouble, and he has to be fed artificially.

Is there any apparent difference in the processes of the two classes mentioned? None that I can see. Yet the one is held to be insane; but he would be a bold man who would postulate such a mental state of the other. You may say that lunatics often do sane acts and that sane people are at times so carried away by emotion as to act in an insane manner, but it is no more correct to call the lunatic sane because he acts as some sane people do than it is to call the others insane, because *quâ* mental processes the two cannot be distinguished.

MEDICO-LEGAL DIFFICULTIES.

Can we wonder, then, at the difficulty of lawyers and juries to say when a person is insane or not? Can we be surprised at the conflict of evidence when medical men on one side will say that the criminal is insane and others that they find no insanity in him? What has just been enunciated is the key to the whole question. There is no difference in the *processus mentis*. The public see two men act in the same way. Little wonder then that they place both in the same category. There are, certainly, differences in the two cases in the way in which the process starts, but there is no difference in the accomplishment, and the difficulty lies in finding out the prime cause which started the process. Was it one unavoidable from the condition of the machinery or was it deliberately brought about by the controller of the mechanism?

It was this diffiulty of reconciling opposing opinions as to the interpretation of symptoms which first led me to the conclusion that such confusion is the natural result of action, especially in nervous complaints, where the mechanism is so inaccessible to direct observation, and where the physiological, chemical, and pathological conditions of action are as yet so imperfectly known and indeterminate.

See what happens in the trial of cases of surgical neurasthenia in the law courts. There may be agreement on both sides as to the symptoms, the subjective statements of pain or incapacity for work, &c., but whilst one medical witness characterises the whole group of objective symptoms as a sham, an acted lie, the other affirms his belief in the truth of what the patient says and in the existence of actual disease. And yet each may be sincere in his convictions.

It cannot, then, be wondered at that juries are puzzled and experts blamed when absolutely contradictory statements are made and judgments founded upon what is really an incomplete investigation—i.e., the courses of processes which use the same rails but have different starting points. The juries see that the process of travel is the same in the two cases, and the experts cannot explain the difference in the diverging centres.

MENTAL PROCESSES IN CRIMINAL ACTS.

At the International Congress on Psychology held at Amsterdam on Sept. 3rd, 1907,[1] I read a paper on the Analysis of the Mental Process in Criminal Acts, in which the following occurs:—

> My position is that in criminal acts the mental process introduces no fresh element. The constituents of the voluntary process are the same in kind as in normal minds: motive, desire, feeling, end in view, action on presentation (otherwise impulse), action upon reflection (volition)—all may occur in the same way as normal thought processes.
>
> The only difference is not in the mechanism of the elements but in their nature; thus the motive may be a wrong one (i.e., against the accepted obligations of society), or the element of feeling may be an irregular one due to structural conditions, but we must remember that just as social systems are temporary—are themselves in an unstable condition—so are mental processes.
>
> We have not in the one the perfection of organisation, though such as it is it acts in accordance with its construction; neither have we in the other any but a temporary adaptation, though such as it is it acts in the way we should expect it to do, and in this expectation we are rarely disappointed.

These views have not been challenged, and I see no reason now for changing them; on the contrary, a better comprehension of them must elucidate what has hitherto given rise to somewhat truculent remarks about the integrity of those who are ranged on opposite sides in the forum.

TOLERANCE OF SOCIETY BEFORE IT CONFINES PRISONERS AND LUNATICS.

What then, you will ask, is it that makes it necessary to restrain people and confine them under certificates if their processes are of the same order as that part of the population which is allowed to go about free? The answer is that society protects itself, either by the prison or the lunatic asylum, when the acts of individuals are contrary to law, and are therefore dangerous to the integrity of the social system.

Society is very tolerant; it puts up with a good deal of wrong action and condones it because it is not always easy to bring out the whole of the process that leads to what is felt to be injurious. We have lots of thieves and lunatics in our midst, but we do not interfere with them up to a certain point; and even when that point has been reached we only employ temporary measures in the hope that the cause of the militant processes may be stayed or obliterated. Only in the extreme instance of murder do we consider the necessity for total extinction of the unit.

VAGARIES OF APPARENTLY NORMAL PERSONS.

Perhaps it is not overstating the case to say that no one's nervous system would come out unscathed from a searching microscopical, chemical, and physico-experimental investigation, and if so there must be actions which we cannot account for. As it is, we cannot account for much; we can only to a very limited extent understand the nature of nervous action.

The vagaries of even those generally considered to be level-headed people, the actions which neither we nor themselves can account for, are they the result of the imperfect

[1] See THE LANCET, Nov. 9th, 1907, p. 1306.

structure above hinted at, or are they the results of an agency which is swaying the material in a manner in harmony with itself, whose very existence is for us only a conjecture? For at present mind, soul, spirit are to us nothing but terms for the intangible.

There are many who deny the necessity for these new developments of thought—they say we have all that we require. On the other hand, if we have progressed from inorganic to organic, why may we not further develop into the spiritual, unless the spiritual is something entirely different from the material as we know it?

What is the Life principle? Is it different in a fish or an elephant from what it is in a man? The material for investigating life is with us, but we cannot isolate it, we cannot take it away and put it back, we do not know where to begin to tackle the problem, because, as far as we know, there is no simplest form of it—it is there from the first in perfection and entirety.

CONSIDERATIONS ON THE OCCULT.

Nearly two years ago in this very room I lectured on "Considerations on the Occult," and in the lecture I said:—

> Is there going on outside us a world of *Force* which requires for its display the human mechanism? If there is Force existing under these conditions does it ever show itself in apparently purposeless actions, such as eccentricities of conduct and impulsive words and deeds which can neither be explained nor accounted for?

If there are external forces which are able to affect the human mechanism it is surely not possible to deny that an individual may be moved to speak or to act in a way unknown to himself by some influence of which he is the appropriate medium. Viewed thus man is a necessary complement of this force, and one object of his creation is merely that of a force-terminal, an Æolian harp which discloses the motion of winds which cannot be seen.

At the British Association meeting for the year 1911 Professor J. S. Macdonald, President of the Physiology Section, said:—

> Whilst there was no scientific evidence to support or to rebut the doctrine that the brain was possibly affected by influences other than those which reached it from the sense-organs it was still possible that it was an instrument traversed freely by an unknown influence which found resonance within it.

You are entitled to ask, How will such a theory fit in with the subject under discussion? Viewing the brain as a mass of matter involved in certain physical and chemical states it is evident that the more it is educated the more complicated will be these states and the more varied the results from the influence of the sense-organs and other receptive surfaces of the body, but these results, though they imply Life, do not of necessity imply mind—i.e., soul—they may be merely nervous states which involve no Consciousness, no Will, not even Emotion, they are the same in the insane as in the sane.

It would be idle and irregular to discuss the question of the possibility of any change in the nature of the force or influence which has at present only a suggested existence, but I have endeavoured to point out that whether we argue on the monistic or on the dualistic hypothesis, the view here taken is the same—i.e., that when a criminal act is due to disease the mental process differs in no way from that of the normal state. And what is specially said of criminal acts seems to be of equal application to others.

Speculative psycho-physiologists would certainly acknowledge that, whilst speaking of the possibility of force influence, they do not mean that it is necessary for all forms of brain-action to be dependent upon it for their demonstration. The brain is certainly capable of action by itself, independently of this external force attunement, and as no one can speak definitely about the limits of concerted or of independent action, we must, for the present, leave it at that, and not be surprised because the monists maintain the integrity of their position.

SOME REMARKS ON EXPERT EVIDENCE.

In bringing to your notice, gentlemen, the subject of the similarity of brain-action in the sane and the insane I have been urged by the desire to reconcile the very contradictory opinions which are often given by experts in the law-courts, opinions which puzzle arbitrators and make them sceptical of the value of this sort of evidence.

Many of the manifestations in health and disease run in parallel lines, and since it frequently happens that observations have to be made and decisions arrived at during this career of parallelism it is easy to see that there is plenty of room for divergence of opinion as to where the symptoms started and how they will eventuate.

To have one man averring on oath that a certain person is insane, whilst another with equal conviction declares that he is not, seems to be ridiculous, but the folly is not in the disputants, but in their critics, who do not see that a number, say nine, may be arrived at by two constructive processes, either by the multiplication of three by three, or by the addition of four to five; or that it may be similarly obtained by a destructive process—e.g., by the lessening of 11 by 2.

ON THE PERCENTAGES OF ETHER VAPOUR ADMINISTERED IN SO-CALLED "OPEN ETHER" METHODS.

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THE very satisfactory results obtained by the former of us during recent years with a particular method of anæsthetisation, in which so-called "open ether" has played an important part, have led us to extend to ether administration some measurements by the second of us analogous to those made in connexion with chloroform [1] when administered by a Skinner's mask. Some of these measurements have already been quoted in the current report of the Anæsthetics Committee of the British Association for the Advancement of Science.[2]

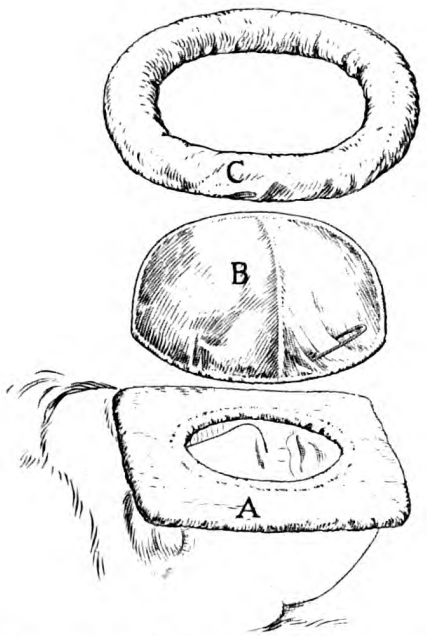
The clinical method in question may thus be described. To all adult subjects a subcutaneous injection of atropine (gr. 1/100 or 1/120) is administered three-quarters of an hour beforehand, partly with the object of preventing mucous secretion during etherisation, and partly with the object of preventing cardio-inhibitory shock during those operations which are liable to excite this condition. Morphine is administered with the atropine only when the patient's reaction to this drug is known or when there is some special indication present, as recent experience has taught us that in a small percentage of cases—possibly in 1 or 2 per cent.—undesirable effects may follow upon the preliminary injection of morphine. Induction is not effected by ether as is customary in America and amongst numerous anæsthetists in this country, but either by successive drops of chloroform or C.E. mixture (2 parts of chloroform to 3 parts of ether). The best results have been obtained by starting with chloroform administered drop by drop upon a Skinner's mask, covered with one layer of flannel held loosely over the face, the administration being so gradual as hardly to be noticed by the patient. Irwin's chloroform drop bottle is specially useful in this method, as the frequency with which the drops of chloroform escape from it can easily be regulated. This first stage in the administration generally lasts about two minutes. At the end of this time, when the substitution would hardly be detected, the chloroform is replaced by C.E. mixture, the administration still being very gradually conducted by means of a drop bottle similar to the preceding. During this stage, which generally lasts another two minutes, a gauze face pad (Fig. 1, A), possessing an oval opening, is placed upon the face as shown, with the double object of protecting the face from the anæsthetic and of securing coaptation of the Skinner's mask (B) during the subsequent etherisation. At the end of about four minutes from the commencement of the administration ether may generally be sprinkled upon the Skinner's mask without the patient detecting the change of anæsthetic. Owing to the gradual invasion of the nervous system, which is possible by this method, excitement and struggling are

[1] Symes: Concentration of Chloroform Vapour in Air drawn from beneath a Skinner's Mask, THE LANCET, July 9th, 1904, p. 81.

[2] Waller: On the Percentage of Ether Ordinarily Afforded by an Open Method of Administration, Report, British Association, Portsmouth, 1911.

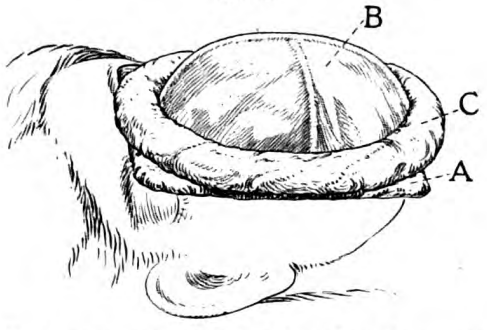
rarely met with. Any indication of excitement should be taken as the signal for the commencement of etherisation. If no such indication present itself ether may be commenced when it is judged that the patient would not detect the substitution. The mask is now kept more or less saturated with ether and the oval gauze collar (C) is placed around the

FIG. 1.



mask. This arrangement of face pad and encircling collar[3] (Fig. 2) is found to be more convenient than loose gauze for surrounding the mask, and for thus making the whole of the respiratory current pass through the etherised fabric. In order to obtain the best type of ether anæsthesia, it is generally necessary to secure oral rather than nasal respiration. Delay in obtaining this type of anæsthesia is nearly always due to the presence of inadequate nasal breathing. It is hence generally advisable before the operation is

FIG. 2.

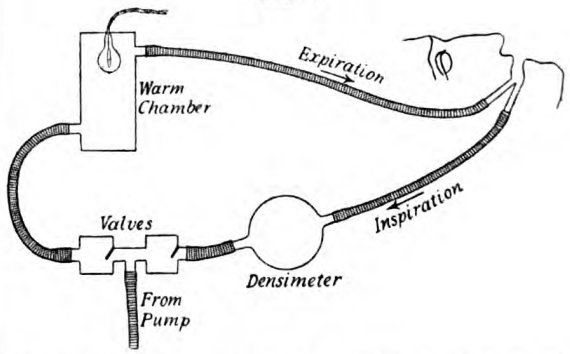


actually begun to remove the pads and mask temporarily, to open the mouth with a Mason's gag, to clear the fauces of any mucus by sponging, and to introduce either a mouth prop or the "oral airway" already described[4] by the former of us. In some subjects, and particularly in those who from the presence of throat affections are in the habit of swallowing mucus, this sponging of the fauces may excite an act of retching or vomiting. Should it do so the eventual type of anæsthesia will be far better than would otherwise be the case. By this temporary suspension of the administration, for the purpose of clearing and increasing the airway, the breathing will become so free that it will be found possible to secure and maintain full ether anæsthesia by the means described even in vigorous male subjects. If no such interval be allowed for, an unsatisfactory type of anæsthesia may be expected, at all events, in certain cases. The operation may generally be commenced in from seven to ten minutes from the beginning of the administration. Should the patient display abnormal insusceptibility to ether a temporary reversion to the C E mixture may be effected. When once full ether anæsthesia has been produced it will be found exceedingly easy to maintain it by keeping the mask thoroughly moist with the anæsthetic.

It is unfortunate that the term "open ether" should have become current to designate the plan of administering this anæsthetic which has just been described. Strictly speaking, an open method is one in which the mask loosely rests upon the face, so that both inspired and expired air can travel between the mask and the face without necessarily passing through the moistened fabric of which the mask is composed. In such strictly open methods unknown and irregular proportions of atmospheric air dilute the vaporised anæsthetic. In many cases indeed it is highly probable that the inspiratory current takes up the anæsthetic by passing over it—i.e., by passing between the mask and the face without ever passing through the moistened fabric. It would, perhaps, be more appropriate to speak of the so-called "open ether" system of administration as the "perhalation" system, for when properly applied, as in the method just described and as in the experiments below, the whole of the respiratory current passes *through* the etherised fabric. There would then be a convenient distinction between the purely open system of administration and the perhalation system. The former of us is of opinion that it is only by this perhalation system that it is possible to obtain ether atmospheres sufficiently equable and constant to be of value in clinical practice.

Our method of experiment was substantially that used in the former estimations of chloroform vapour to which reference is made in the opening paragraph of this communication—viz., to aspirate air from beneath the mask, through a densimeter bulb, adjusting the frequency (24 per minute) and volume (250 c.c.) of the aspirations to resemble those of human respiration, and to estimate the percentage of ether vapour in the bulb by Waller's[5] method of comparing its weights, when containing and when not containing ether vapour respectively. The vapour mixture aspirated from the mask was returned to it by a second tube passing through a warm chamber to imitate as closely as possible the influence of warm expired air on the evaporation, and on the distribution of the ether vapour (Fig. 3). This imitation

FIG. 3



fell short of completeness in that, unlike expired air, the mixture, returning to the mask, was not saturated with water vapour, introduction of which would have complicated the experimental work and have protracted the observations beyond the time at our disposal.

In one important detail the present experiments differ from those of the earlier series mentioned above. In the latter (chloroform estimations) the mask lay loosely over the

[3] These pads and collars, as well as the flannel Skinner's mask, may be obtained from Messrs. Allen and Hanburys of Wigmore-street. This firm also supplies the Irwin drop-bottle for chloroform or chloroform mixtures and a satisfactory form of ether bottle suitable for use in the method described.

[4] Hewitt: An Artificial "Airway" for Use during Anæsthetisation, THE LANCET, Feb. 15th, 1908, p. 490.

[5] Waller: Ether Estimation by Densimetry, Journal of Physiology, vol. xxxvii., 1903-04.

aspirating (inspiratory) and returning (expiratory) tubes, whilst in the present (ether) series it was fitted as closely as possible over a model of the human face by means of the pads shown in Figs. 1 and 2. By using experimentally the very mask and pads which had been employed clinically we were thus able to ascertain with a minimum of error the percentages of ether administered in practice. The inspiratory and expiratory orifices opening into the mouth of the model are shown in Fig. 3. In calculating the percentage of ether in the air inspired by the model no allowance was made for variations in temperature or in air pressure, as such corrections, even in extreme cases, are of negligible importance. The ether[6] was poured on the mask from a dropping bottle at rates corresponding to those employed in clinical practice during the induction and maintenance of anæsthesia, and estimations were made during three stages.

Although in the clinical method already described in detail anæsthesia was not induced by ether we thought it advisable to make a few estimations of ether percentages during the induction of anæsthesia by this agent, seeing that many anæsthetists prefer to commence and continue with ether rather than to employ a sequence.

STAGE I.—*Induction by Ether.—Duration of Etherisation = 1 Minute.—Ether Added by Small Douches Every Few Seconds.—About One Half of the Mask Moistened.*

TABLE I.

Fabric.	Ether in inspired air.
Surgical gauze ... ... 4 layers.	5·4 per cent.
,, ,, ... 4 ,,	8·0 ,,
,, ,, ... 8 ,,	9·4 ,,
,, ,, ... 12 ,,	11·0 ,,
Flannel (washed) ... ... 1 layer.	6·8 ,,
,, ,, ... 1 ,,	4·0 ,,
,, ,, ... 2 layers.	5·0 ,,
Lint (new) ... ... 1 layer.	5·4 ,,

STAGE II.—*Maintenance of Anæsthesia. Whole of Mask Kept Moistened by Frequent Additions of Ether during 1 Minute.*

TABLE II.

Fabric.	Ether in inspired air.
Surgical gauze ... ... 4 layers.	11·0 per cent.
,, ,, ... 4 ,,	11·0 ,,
,, ,, ... 8 ,,	11·4 ,,
,, ,, ... 12 ,,	11·0 ,,
Flannel (washed)... ... 1 layer.	8·0 ,,
,, ,, ... 1 ,,	8·4 ,,
,, ,, ... 2 layers.	8·0 ,,
Lint (new) ... ... 1 layer.	10·0 ,,

STAGE III.—*Maintenance of Anæsthesia. Whole of Mask freely Douched during 2 Minutes.*

TABLE III.

Fabric.	Ether in inspired air.
Surgical gauze ... ... 4 layers.	12·0 per cent.
,, ,, ... 4 ,,	10·0 ,,
,, ,, ... 8 ,,	13·4 ,,
,, ,, ... 12 ,,	14·0 ,,
Flannel (washed) ... ... 1 layer.	8·0 ,,
,, ,, ... 1 ,,	8·6 ,,
,, ,, ... 2 layers.	8·0 ,,
Lint (new) ... ... 1 layer.	8·0 ,,

[6] The ether used in the above experiments was that manufactured by Messrs. Huskisson and Co., and known as "pure methylated ether." In answer to inquiries made by us we are informed that it has a specific gravity of ·719–·720 at 60° F., that it commences to distill at 76° F., and that it is perfectly free from water.

These three tables bring out the fact that, for a given dampness of the mask, the gauze yields a higher percentage of ether than the other fabrics, and that a double layer of flannel offers no advantage over a single layer. Lint and flannel behave alike. The fluctuations in Table I. were to be expected, as no attempt was made to keep any definite portion of the mask moistened. The absence of such fluctuations in Tables II. and III. is remarkable as indicating that under the specified conditions an ether percentage, sufficiently definite and regular for clinical purposes, may be relied upon. In the above cases estimations were made uniformly 10 seconds after the last douche. In the following a longer interval was allowed to test the holding power of the various fabrics.

TABLE IV.

Fabric.	Interval between last douche and estimation of ether.		
	10 seconds.	1 minute.	2 minutes.
Flannel (washed) ... ... 1 layer.	8·0% ether.	6·0% ether.	—
,, ,, ... 1 ,,	8·6 ,,	8·0 ,,	6·4% ether.
,, ,, ... 2 layers.	8·0 ,,	6·0 ,,	—
Lint (new) ... ... 1 layer.	9·8 ,,	8·4 ,,	6·4% ether.

It is of interest to note in connexion with the above figures that they confirm Professor Waller's prediction that the percentage of ether inhaled during anæsthesia would be between 6 and 16 per cent. It may be noted, however, that in the above experiments we did not obtain a higher percentage than 14. To test the value of very excessive douches the following experiments were made.

TABLE V.—*Excessive Douches, 20 c.c. (about 5 fl. drachms) of Ether Used, in a Period of 1 Minute.*

Fabric.	Ether in inspired air.
Flannel (new) ... ... 1 layer.	7·2 per cent.
,, ,, ... 1 ,,	9·2 ,,
,, ,, ... 1 ,,	9·4 ,,
,, (washed) ... ... 1 ,,	6·0 ,,
Lint (new) ... ... 1 ,,	6·0 ,,
,, ,, ... 1 ,,	7·0 ,,
,, ,, ... 1 ,,	6·6 ,,
Surgical gauze ... ... 4 layers.	14·2 ,,
,, ,, ... 8 ,,	17·6 ,,
,, ,, ... 12 ,,	16·0 ,,

To sum up, it may be concluded that the percentage of ether afforded by a Skinner's mask, adjusted as described, lies ordinarily between 5 and 15 according to the extent of douching and the nature of the fabric employed. Gauze yields a higher percentage than lint or flannel, the percentage rising roughly according to the number of layers. With flannel or with lint, so adjusted that all inspirations and expirations pass through the fabric, a more or less equable atmosphere containing approximately 8 or 9 per cent. of ether vapour may be depended upon. This fact we look upon as the most important feature of our experiments.

Finally, we desire to express our indebtedness to Professor Waller both for the resources of his laboratory and for the ready method of ether (and of chloroform) estimation that has contributed so much to the quantitative study of anæsthetics and of anæsthesia.

ROYAL INSTITUTION.—On Thursday next, Feb. 1st, at 3 o'clock, Professor A. M. Worthington begins a course of two experimentally illustrated lectures at the Royal Institution on the Phenomena of Splashes; and on Saturday, Feb. 3rd, Sir Alexander C. Mackenzie delivers the first of a course of lectures with musical illustrations on (1) Russian Music of To-day (with the kind assistance of the Hans Wessely Quartet); and (2 and 3) Franz Liszt (Centenary). The Friday evening discourse on Feb. 2nd will be delivered by Sir James Mackenzie Davidson on Vital Effects of Radium and Other Rays, and on Feb. 9th by Dr. J. A. Harker on Very High Temperatures.

ALCOHOL INJECTION OF THE GASSERIAN GANGLION FOR TRIGEMINAL NEURALGIA.

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DURING the last 3½ years I have seen 90 cases of intractable trigeminal neuralgia, 86 of whom I have treated with alcohol injection; 65 were females and 25 were males. In only three cases was no relief obtained, owing to the nerve not being found; one of these had previously been operated on unsuccessfully for gasserectomy and the scar tissue was so dense that it was impossible to manipulate the needle. In three others slight definite improvement resulted and in the remaining 80 cases complete relief was obtained for intervals varying from as little as two months and four months in two cases to 2½ years and more. For the majority 12 months' complete relief of pain may be looked on as a minimum, if the nerve is definitely hit and anæsthesia produced; while two to three years and more may be expected when the depth of the anæsthesia indicates that the nerve has been properly destroyed by the alcohol.

Several patients have come to me who had previously been unsuccessfully injected with alcohol elsewhere, and I have heard it stated that the treatment was of no use, and also that no anæsthesia is produced by the alcohol injection. That this may be so in the hands of those who have not practised the method thoroughly on the dead body, or who have not the patience to find the nerve before performing the injection in the living patient, I can readily believe. I wish to state most emphatically that such failures in cases of genuine trigeminal neuralgia are due to errors in technique, owing to which the nerve is neither struck nor injected with the drug. Strong alcohol injected into any nerve trunk destroys the nerve fibres almost instantaneously; it is, indeed, a chemical resection of the nerve, and total loss of function of the nerve will ensue until regeneration occurs. It is to prevent this regeneration of nerve fibres that I have adopted the modified technique described below, in order to destroy the nerve cells in the Gasserian ganglion, and thus to render impossible the downgrowth of new nerve fibrils to replace those destroyed by the alcohol.

The great advantage of extirpation of the Gasserian ganglion over Schlösser's method of alcohol injection of the nerve trunks has been the permanence of the cure in the former treatment, as opposed to the temporary relief of a few months to three or more years obtainable by the injection. The severity of the Krause-Hartley operation for extirpation of the Gasserian ganglion, owing to the necessity for a large trephine opening, and considerable pressure being exerted upon the brain during the process of exposing the ganglion, has deterred a large number of sufferers with trigeminal neuralgia from seeking relief by this means.

I have therefore endeavoured to improve on the method of deep alcohol injection of the nerve trunks by carrying the injection of strong alcohol through the foramen ovale into the Gasserian ganglion itself, in order that, by destroying the nerve cells in the ganglion, regeneration of nerve fibres along the degenerated nerve trunks shall be prevented, and thus to substitute permanent cure of the pain for the temporary relief of a few months to a few years which was hitherto obtainable. In this way it appears to me possible to obtain all the advantages of the Krause-Hartley operation without its attendant deformity and dangers, or even the necessity of a general anæsthetic.

In my first paper[1] three years ago on the alcohol injection treatment, I indicated that in practically every case it is possible to pass the needle through the foramen ovale into the Gasserian ganglion, and I had found by experiment on a large number of bodies in the post-mortem room that it was possible to inject the Gasserian ganglion through this foramen, using an alcoholic solution of methylene blue for the purpose, the ganglion being found afterwards stained deeply blue with the dye. I then felt that partial or complete destruction of the ganglion by injection of alcohol into it through the foramen ovale would be the ideal treatment in those cases of neuralgia which involve the third division of the nerve either alone or in conjunction with the second division, which form a majority of the total number of cases of trigeminal neuralgia met with. No recurrence of the pain after such a treatment should ever happen, just as in cases when the Gasserian ganglion has been successfully extirpated.

It is a debatable question whether in those cases of neuralgia limited to the first and second divisions it is better to practise recurrent injections for the two nerve trunks and leave the important area of sensation on the tongue and lower jaw supplied by the third division unimpaired, or whether it would be better in every case to attack the ganglion through the foramen ovale, and thus render the whole area of the trigeminal nerve anæsthetic. That is to say, is it better to suffer the return of the neuralgia at intervals with recurring injection treatment and retain sensation on the tongue and lower jaw, or is it wiser to purchase permanent immunity from pain at the price of permanent loss of sensation on the half of the tongue and lower jaw, in addition to the numbness over the area of the trunks affected by the neuralgia?

During the last 15 months I have injected the ganglion through the foramen ovale with 90 per cent. alcohol in seven patients, one man and six women. At first I attempted this only in thin subjects who had not been injected before, because of the greater ease of manipulation of direction of the needle, and in patients in whom the third division was chiefly involved, but I have now also used it for cases in which the second division alone was affected, and I am inclined to think it will be the sounder course to use the method also in those comparatively uncommon cases in which the paroxysmal neuralgia is limited to the first and second divisions of the nerve. True trigeminal neuralgia affecting the first division alone is very rare; I have had only one case in 90 cases of the disease.

Destruction of the nerve trunks outside the skull, in cases of trigeminal neuralgia—whether by the knife or alcohol injection—is probably always followed, sooner or later, by recurrence of the pain, the intervals of freedom varying from a few months to three or four years, according to the degree to which the nerve has been destroyed. It is true that in many instances injection of alcohol in the neighbourhood of the nerve trunk has been followed by complete relief of the pain for a few weeks or months, even when no trace of anæsthesia has been produced; such perineuritic injections are, however, most unreliable in their effects, as the pain may recur at any moment. To ensure complete freedom from pain for many months it is necessary to inject the alcohol into the nerve trunk, so that lasting anæsthesia shall be produced. The success of the injection can be accurately gauged by the depth of the anæsthesia produced, and if this be done properly, so that there is complete loss of sensation to touch, pin-prick, and to pressure over the larger portion of the area supplied by the nerve, we may then count with tolerable certainty on complete relief of the pain lasting from twelve months to two or three years. I have, indeed, several patients who have had no return of pain whatever for the last two and a half years. Extremely satisfactory though these results are, as the injection can be repeated if the pain returns, yet it is obviously preferable to obtain permanent relief, without having recourse to renewed injections at intervals.

I first injected the Gasserian ganglion with alcohol 13 months ago for a man with typical tic douloureux of the second and third divisions. He still remains perfectly well, with no pain of any kind, and though an equal result so far might have been obtained by injection of the superior and inferior maxillary nerves outside the skull, yet the probability is strong that the immunity from pain in his case will last far longer, if not permanently.

CASE 1.—The patient, aged 43, sent to me at St. Mary's Hospital in November, 1910, by Mr. C. A. Morton, of Bristol, began to suffer from typical tic douloureux in the right cheek and nose two years previously. After suffering for 18 months spasms of gradually increasing severity, the infra-orbital nerve was divided on the cheek by Dr. A. Fells. This gave him relief of all pain for three months, with resultant numbness of the cheek, right upper lip, and side of nose. In July, 1910, similar spasms of pain started in the right lower jaw, the pain darting back into the ear and into the back of the tongue. These spasms of acute pain continued daily in increasing number until his admission to St. Mary's on Nov. 24th. There was then no detectable anæsthesia on the right cheek or upper lip, or elsewhere.

On Nov. 26th I injected the right foramen ovale, using a few drops of 2 per cent. eucaine, followed after a few seconds by 20 minims of 90 per cent. alcohol. The patient said afterwards the injection caused practically no pain at all. There was produced immediately complete anæsthesia of the whole of the right fifth nerve distribution to all forms

[1] Proceedings of the Royal Society of Medicine, Neurological Section, Feb. 25th, 1909, p. 80. See also THE LANCET, May 8th, 1909, p. 1310.

of sensation, touch, pressure, and pin-prick, with loss of the right conjunctival reflex, and also complete loss of taste on the right half of the tongue; the palate unfortunately was not tested. Next day the anæsthesia had diminished considerably on the forehead and cheek, so that a firm touch or pressure was now felt, though there remained complete analgesia to pin-prick (Fig. 1). A week later light touches

FIG. 1.

CASE 1.—Chart of sensation: loss on right fifth nerve area, taken Dec. 31st, 1911, thirteen months after the injection of the ganglion. The dotted area indicates loss of perception of light touches and complete loss of perception of pin-prick, except as a touch or pressure.

were still unperceived on the forehead and cheek, and only firm pressure of the lower lip and chin, though the analgesia remained complete as before.

Now, 13 months later (Dec. 31st), the patient has had no return of pain whatever, and on examination I find he still cannot feel a pin-prick at all on the right fifth nerve area, and also there is very definite loss to light touch, with loss of the conjunctival reflex. The analgesia extends over both upper and lower jaws inside the mouth and includes the right half of the tongue, and the hard palate as far back as its junction with the soft palate. Although at first after the injection there was weakness of the right masseter and pterygoids, this has now completely recovered.

The recovery of the motor paresis of the jaw muscles, in spite of permanent analgesia, is explained by the fact that the motor trophic centre lies in the motor nucleus in the pons, the motor branch of the fifth having no connexion with the Gasserian ganglion. Consequently, an injury to the motor fibres by alcohol injection, even inside the foramen ovale, may be recovered from, whereas the trophic centres for the sensory fibres of all three divisions of the trigeminus are the nerve cells within the ganglion. Destruction of the motor portion of the nerve, and consequent permanent disfigurement from wasting above and below the zygoma, is a constant result of the major operation for excision of the ganglion, owing to a considerable portion of the motor branch being necessarily destroyed with it.

My technique for injecting the Gasserian ganglion varies only in detail from that of injecting the inferior maxillary nerve at the foramen ovale; instead of inserting the needle close below the lower border of the zygoma, I choose a point either on or slightly below the line joining the incisura notch to the ala nasi. This line in the average skull, when the teeth are in position, corresponds to the lower border of the sigmoid notch of the lower jaw. To reach the foramen ovale, therefore, the needle must be directed slightly more upwards, making it thus easier to pass the point through the foramen. As soon as the nerve is reached at the foramen, I inject it with 90 per cent. alcohol, using about 1½ c.c., but if no general anæsthetic is being given I precede the injection of the alcohol by injecting 6 or 7 minims of 2 per cent. eucaine solution into the nerve, thus rendering the subsequent injection of the alcohol comparatively painless. If there is as a result deep anæsthesia of the lower lip and chin, which will certainly develop at once if the nerve itself has been injected, I then feel with the point of the needle for the lips of the foramen ovale, if this has not already been felt. Sometimes the needle slips easily through the foramen, sometimes it has to be worked through, but no degree of force should be used.

In two instances I have found that after feeling the lips of the foramen with the point of the needle injection of the nerve at that point has produced total anæsthesia of the whole fifth nerve, no doubt owing to the alcohol infiltrating the tissue of the ganglion by passing through the root of the third division, as I have seen many times occur in the dead body when injecting the nerve at the foramen ovale. During the injection the patients complained of pain spreading into the cheek and forehead, and in both of them I considered it unnecessary to work the needle through the foramen into the ganglion, but in both the depth of the anæsthesia on the first and second divisions faded away after 10 or 15 minutes, so that tactile sensations began to be perceived on the forehead and cheek, and on the following day tactile sensation on these areas was practically normal again, though pin-prick was perceived only as a touch.

If the tic douloureux is affecting the third division alone, and this is the commonest variety in my experience, the inferior dental being by far the most frequently involved, such a result is, I think, the ideal to be aimed for, but if the second division is also affected by the pain, as in the upper gum, cheek, or nose, then more of the ganglion must be destroyed, and the needle must be worked through the foramen into the substance of the ganglion to the depth of another quarter of an inch. A drop or two of the alcohol is then cautiously injected, considerable resistance to the push of the piston being experienced if the point of the needle remains within the nerve tissue. Another 1–1½ c.c. of alcohol should then be injected, a few drops only at a time, at intervals of not less than two minutes, meanwhile testing the sensation on the cheek and forehead with a blunt pin. When neither the pressure of the head of the pin or a sharp prick on the forehead is any longer perceived at all, enough has probably been done, and the needle should be slowly withdrawn. Even now the depth of anæsthesia will probably fade away after half an hour or so, so that on the following day deep anæsthesia and loss of taste may persist on the palate, and complete loss to pin-prick and even to pressure on the upper lip and lowest part of the cheek, yet tactile sensation may be fair on the forehead and below the eye, with a normal conjunctival reflex. When this is the case there is no danger of any keratitis supervening, such as may occur when total anæsthesia of the eyeball persists after complete destruction of the ganglion.

Sometimes, after pushing the needle through the foramen ovale, the point of the needle may leave the nerve tissue and enter the cave of Meckel, and cerebro-spinal fluid may drip from the needle. If the injection of alcohol be then commenced no resistance will be felt to the push of the piston, and instantly the patient will complain of severe headache at the base of the skull and back of the head. Should this occur the needle must be partially withdrawn, and then worked through the posterior edge of the foramen, so as to keep the point within the substance of the ganglion.

Another result of this slight error in direction that may occur is that the point of the needle may pass in front of the ganglion and strike the root of the second division of the nerve before it enters the foramen rotundum. This is recognised by the patient's sudden complaint of pain in the nose and cheek, and if the nerve be injected here, deep anæsthesia on the hard palate and sometimes on the front of the soft palate, together with total loss of taste on this area will be produced, in addition to the anæsthesia of the upper jaw, nose, cheek, and upper lip which would result from injection of the nerve by the ordinary route in the sphenomaxillary fossa. This has happened to me in two cases, in both of whom deep anæsthesia and complete loss of taste on half the palate were produced, together with complete analgesia on the upper lip and lower part of the nose, the analgesia becoming slighter below the eye, not sufficient alcohol having been injected to destroy the whole nerve completely.

More often than not injection of the second division in front of the foramen rotundum by the ordinary route produces little or no anæsthesia on the palate, though there may be deep anæsthesia as a result on the jaw, nose, and cheek; this is no doubt due to the nerve trunk being struck in front of the branch to Meckel's ganglion. Another branch which I have never found anæsthetic after injection at this point is the temporo-malar, the anæsthesia always ending sharply at the outer canthus of the eye. Whether this is due to the usual area assigned to the temporo-malar branch receiving alternative supply from the auriculo-temporal or supraorbital nerves, or whether it is due to the temporo-malar branch originating far back from its main trunk, almost at its exit from the foramen rotundum, I am uncertain.

Injection for the second division at the foramen rotundum is usually more difficult than for the third division at the foramen ovale, and in a certain proportion of cases it is

impossible. There is also more likelihood of hæmatoma from wounding the internal maxillary vessels.

These points are additional reasons for my preference for injection of the Gasserian ganglion through the foramen ovale.

CASE 2.—In one patient, a lady 86 years of age, who had suffered from tic douloureux of the second division chiefly, and to a less degree of the third division on the right side for the past eight years, I injected the right Gasserian ganglion two months ago under chloroform. Using the method I have described, I was able to feel the lips of the foramen ovale with the point of the needle, although the patient was unable, of course, to give me the indication of feeling an electric twinge down into the lower lip and chin. I injected only 1½ c.c. of 90 per cent. alcohol without any eucaine, but after the patient came round from the anæsthetic complete anæsthesia on all three divisions was present, with loss of taste as well as loss to pin-prick on the right half of the tongue. There has been no recurrence of pain whatever since, though she complained of a "wooden" feeling of the whole of the right side of the face.

CASE 3.—In another patient, a lady aged 41, I injected the left Gasserian ganglion twice in October last, with ten days' interval, using 2 c.c. of 90 per cent. alcohol on each occasion. She had suffered from severe tic douloureux of the left second and third divisions for five years. Two years before she came to me she had obtained relief from a course of numerous injections of alcohol, for which she was put under general anæsthesia six different times. As a result of that treatment she had diplopia which lasted nearly three months, and paralysis of the pupil, though the pain was completely relieved for 19 months, when in July last it returned furiously.

When I saw the patient there was no trace of anæsthesia remaining, though she says she was quite anæsthetic on both lips and jaws on the left side after the treatment. The left pupil was typically Argyll-Robertson in character, there being no trace of reaction to light, but a slow full reaction to accommodation. This is doubtless due to the alcohol two years ago having infiltrated the nerve branch to the inferior oblique, during the process of injection of the second division in the spheno-maxillary fossa.

On Oct. 16th last I injected the third division in this patient, local anæsthesia only of ethyl chloride spray and eucaine being used. Using the method I have already described above, I injected the nerve at the foramen ovale, and also the Gasserian ganglion, using altogether 2 c.c. of 90 per cent. alcohol. The immediate result was complete anæsthesia on the lower lip and tongue and the rest of the third division, with complete loss of taste on the front of the tongue on that side, with deep analgesia and loss of light touch over the remainder of the fifth nerve supplied by the second and first divisions. Although the conjunctival reflex was partially lost no keratitis followed, but pain of a darting character still troubled her in the lower jaw and cheek and also in the temple, where she had not had it before.

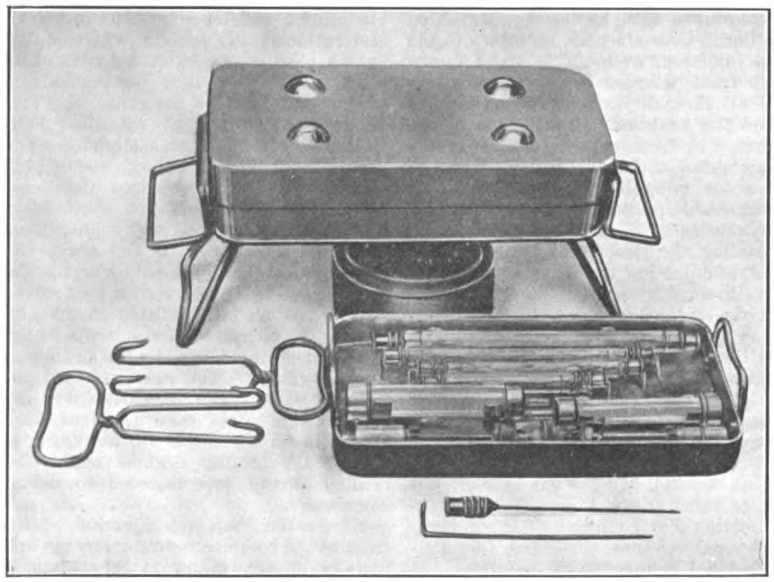
Ten days later I therefore injected again into the Gasserian ganglion through the left foramen ovale, passing the needle to a depth of just 2 inches. I used no eucaine this time, but injected 2 c.c. of 90 per cent. alcohol slowly into the ganglion. When finishing the injection she became somewhat faint and retched a little, and she was kept in bed for the next two days, slight giddiness and retching continuing for that time. Total anæsthesia to all forms of sensation, touch, pin-prick, and pressure was immediately produced over the whole area of the fifth nerve, including the eyeball, auditory meatus, and to a less extent the membrana tympani. There was complete loss of taste on the front of the tongue on that side, as before, and now also loss of taste on the left half of the front of the palate (Fig. 2).

During the next fortnight she complained of darting neuralgic pains in the left cheek and temple, which gradually diminished and then disappeared entirely, the anæsthesia remaining as intense as before. Keratitis developed in the anæsthetic eye on the fifteenth day after the second injection, necessitating sewing together of the lids for a time, but she is completely cured of her neuralgia, and I think is likely to remain so permanently.

FIG. 2.

CASE 3.—Chart showing area of anæsthesia after the second injection of the left Gasserian ganglion on Oct. 26th. The shaded area indicates loss to touch, pin-prick, and to firm pressure. The kidney-shaped area above the left eye indicates an area of skin which showed no anæsthesia at all after the first injection on Oct. 16th, but became completely anæsthetic after the second injection. The dotted area indicates loss to pin-prick, with only slight tactile diminution, her comb not being felt properly, and pin-prick perceived only as touch.

FIG. 3.



Injection outfit consisting of steriliser 6 in. by 3 in., fitted with cover, reversible to form tray; perforated tray fitting into steriliser or cover, containing flat metal plate with clips to hold eight needles in cases, and two syringes. The syringes and needles required are taken out and placed in the tray for boiling in weak soda solution. In front is seen a 2½ in. needle, 1·25 mm. calibre, with stilet.

On another occasion I should not attempt such rapid or complete destruction of the ganglion owing to the faintness produced and the risk of keratitis, but if the injection is made slowly, only a few drops being pushed in at a time at intervals of two minutes, the depth of the anæsthesia can be graduated almost to a nicety and no unpleasant symptoms whatever will result.

If a general anæsthetic is used, and some patients insist upon it, chloroform is usually the most suitable, and it should be given lightly, and as soon as the needle reaches the nerve there will probably then be strong reflex contraction of the facial muscles on that side, as though pain were felt, though afterwards there is no recollection of feeling anything. In my first paper in 1909 I described this sign as a definite indication that the nerve is reached, but experience has since taught me that it is not an infallible sign, and equal reflex screwing up of the face may occur when the nerve has not been reached.

If, under an anæsthetic, the lips of the foramen are felt by the point of the needle, or from other indications it is assumed that the point of the needle is within the nerve, the anæsthetic should be discontinued, and the injection of the alcohol begun slowly, a few drops at a time. As consciousness commences to return it will be found that a smart prick upon the chin or lower lip evokes no reflex movement at all, if the alcohol has been placed correctly within the nerve, owing to the anæsthesia of the skin immediately induced, while a pin-prick upon the other side of the chin or lip will provoke strong reflex movement and signs of displeasure, long before the patient is sufficiently conscious to answer questions. Should, therefore, the reflex contractions of the face be equally brisk on the two sides, a little more anæsthetic may be administered, and a fresh attempt then made to find the foramen and then to inject the nerve.

I have thus in several patients been able to inject the third

division at the foramen ovale under chloroform successfully in whom I had previously been unable to find the nerve owing either to their inability to keep still or else to the fact that patients do not always complain of a twinge of pain along the whole distribution of the nerve's supply, and thus the needle may have been correctly placed and then partially withdrawn and tried in a different direction owing to the failure of the patient to give the expected signal when the nerve was hit. That this undoubtedly does occur sometimes I have had definite proof in three patients when injecting the infra-orbital nerve at the infra-orbital foramen. All three denied feeling any pain in the upper lip or nose when the needle was inserted into the infra-orbital foramen, and the injection was completed, in each case producing deep anæsthesia of the whole distribution of the nerve without any pain being felt at all in the upper lip, although this part became as deeply anæsthetic as the rest.

To get good results it is necessary to have suitable tools to work with, and it may be of value to others who wish to try this treatment to know what type of needles and syringe I use. Messrs. Maw and Sons have supplied to my designs an outfit (Fig. 3) consisting of a 6 in. by 3 in. steriliser with perforated tray, and a cover with handles, into which the tray also fits. Into the tray slips a flat metal plate on which are arranged in spring clips four split-tube needle-holders, each containing two needles, and two Record syringes with their pistons separately. The syringes are of 2 c.c. and 20 minims capacity, to be used for 90 per cent. alcohol and 2 per cent. eucaine solution respectively. The needles are of drawn steel, nickelled, with a short sharp point bevelled at an angle of 20°, and long mounts roughened by coarse milling to give a good grip to the fingers, and brass-wire stilets to fit the bore. Besides two strong hypodermic needles there are one 35 mm. long and 0·6 mm. bore, and another 50 mm. long and 0·9 mm. bore, both useful for injecting the infra-orbital foramen in thin- or fat-cheeked people; two 2½ in. long and 1·25 mm. and 1·1 mm. bore respectively, and two longer and stouter needles, 3 in. and 3½ in. in length and 1·25 mm. and 1·4 mm. bore. The 2½ in. needles I use for injecting the foramen ovale, and in thin subjects also for the foramen rotundum, while the longer needles may be used for the foramen rotundum in larger and stouter subjects. All these needles, except the three smallest, may also be used for lumbar puncture in children and adults, for which they are extremely suitable.

Wimpole-street, W.

THE SURGICAL TREATMENT OF STERILITY IN WOMEN.[1]

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IN appraising the value of treatment for such a complex condition as female sterility there must ever be present to the mind the necessity for distinguishing between a coincidence and a consequence. This is the more necessary when we consider how little real knowledge we possess regarding the subtle changes which promote or hinder the occurrence of conception in the human female. Anatomical or pathological alterations in structure forming definite barriers to conception are easy to understand, but the more minute changes which underlie the occurrence of conception in many instances still remain a sealed book. It is, however, to the treatment of some of these anatomical and pathological changes in the female genitalia that I desire to direct attention in order to show what surgery can do to promote a cure.

It must be laid down as a fundamental law that no female should be subjected to prolonged and painful treatment or to any surgical operation for the cure of sterility unless it is proved that the male is potent as regards coition and fertility. By way of illustration let me recall two recent examples.

A woman, aged 38 years, came to consult me because she had missed a menstrual period and because her abdomen was enlarging. She had been married 15 years and fancied she was pregnant. I found on examination that she was a *virgo intacta*, and on putting a few judicious questions I ascertained that connexion had never really taken place. Further investigation proved that her husband was impotent.

The second example was that of a woman, aged 36 years, who had been married for ten years and was anxious to have a child, if only for succession reasons. Her husband was ten years her senior and she had had treatment of various kinds and had, of course, been curetted. After a careful pelvic examination of her internal organs no cause could be detected to explain her sterility. I sent her husband to a surgical colleague in order to have his spermatic fluid examined, and it was then found that he had azoöspermia.

These two cases will serve to emphasise the importance of male sterility, a condition which is far from uncommon and which probably accounts for about one-fourth of the cases. So much attention has been directed in the past to the treatment of uterine flexions, fancied or real strictures of the cervical canal and its orifice, and to scraping the uterine cavity, that the ovaries and tubes seem to have been entirely forgotten. Such methods of treatment have proved disappointing to the patients and have brought discredit to the practitioner and his calling. Yet the condition of the tubes and ovaries is one of the most important factors in the reproductive process. How often do we see treatment directed to scraping or attempting to cause enlargement of an undersized uterus, forgetting all the while that the ovaries and tubes may be, and probably are, atrophic, and no treatment directed to the uterus is likely to be beneficial. Quite recently I saw a woman with an undersized flexed uterus who came for treatment because of her sterility and who had been curetted two years previously.

One of the most common causes of sterility in both sexes is gonorrhœa, and in the female it is the results produced in the tubes and ovaries through gonorrhœal infection which so often lead to permanent sterility. Infection post abortum and post partum may lead to a similar result or infection the result of appendicitis, whilst tubercle may also be a cause. Such infections produce adhesions of the ovaries and tubes to the back and side wall of the pelvis, to the rectum, to the uterus, or to one another, or the Fallopian tubes become thickened and their abdominal ends closed. Improvement under appropriate treatment may result, but with gonococcal infection the results tend to persist, the outstanding features of this infection when attacking the Fallopian tubes and pelvic peritoneum being its chronicity and its tendency to form adhesions.

Cure of Sterility by Double Salpingostomy.

It was not until 1907 that I had an opportunity of proving what could be done for the sterile woman with sealed tubes.

A patient, aged 28 years, was sent to me on account of her sterility. She had been married two years, and since her marriage had had excessive bleeding at her menstrual periods which lasted 14 days. Menstruation previous to marriage had been regular, painless, lasting seven days, and of moderate quantity. She complained of pelvic pain at intervals, slight sickness, and abdominal distension. The uterus was found to be displaced backwards partially fixed through adherent appendages, and the Fallopian tubes were thickened. An investigation into the condition of her husband was made, when it was found that he had had chronic gonorrhœa, which was now cured. I explained what I intended to do to the patient and her husband, and with their consent I operated. The abdomen was opened in the middle line by a sub-umbilical incision, and both Fallopian tubes were found to be adherent, thickened, and completely sealed at their abdominal extremities, each tube terminating in a club-shaped swelling. The ovaries, which were slightly adherent, appeared to be of normal size and structure. One Fallopian tube was brought out through the incision and surrounded with a gauze sponge. An incision was then made along the dorsal aspect of the tube towards the club-shaped extremity for a distance of one inch, thus opening up the abdominal end of the tube. The remains of the fimbriæ could be recognised as having been inverted into the lumen. The tubal mucosa was then united to the serous covering of the tube with fine catgut inserted on a curved intestinal needle, thus accurately uniting the edges and stopping all bleeding. The opposite tube was then brought up and treated in a similar manner. The uterus was suspended by intra-peritoneal fixation of the round ligaments, a silkworm gut suture being passed on each side through the fascia of the abdominal wall, muscle, peritoneum, and under the

[1] A paper read before the Harveian Society of London.

uterine end of the round ligament, and then through peritoneum, muscle, and fascia, to be tied and cut short outside the fascia. The omentum was then pulled down and placed behind the uterus, whilst the appendages were placed on its anterior surface, the uterine suspension and the arrangement of the omentum being for the purpose of preventing the further development of adhesions. The patient made a smooth recovery. Three months later I was gratified to hear that she was pregnant, and ultimately she was safely delivered of a large male child. Her medical attendant wrote to say: "Except that the head stuck at the outlet requiring forceps and anæsthetic just at the end there was nothing remarkable or unusual in the labour."

The Operation of Salpingostomy and its Technique.

The operation of making a new abdominal opening for the Fallopian tube is termed salpingostomy, and was first attempted by Skutsch in 1889.[2] He excised a small oval portion from the lateral wall of the bulbous extremity of the Fallopian tube and then sutured the mucosa to the peritoneal coat. A. Martin[3] removed the end of the tube, uniting the mucosa to the serosa by sutures. Out of 63 operations conceptions followed twice. Mackenrodt also records two successes in 13 cases.

The comparatively small number of successes following these operations led me to conclude that improvements in the technique might produce better results. The removal of the extremity of the tube as recommended by Martin, followed by subsequent suture, is much more likely to be followed by contraction and closure of the opening, whereas a free incision along the upper surface of the tube has the advantage that contraction of the circular muscular fibres in the tube wall will tend to maintain its patency. Further, it is necessary to use fine catgut, which will be quickly absorbed, and also to make sure that all bleeding is arrested. All these operations must be done with the utmost gentleness and any adhesions snipped with scissors, for if they are torn by the hand introduced into the pelvis the tube may share the same fate and be irreparably damaged. For this purpose a large abdominal incision is necessary so that all adhesions may be seen and separated under visual control.

The termination of the operation by suspending the uterus is necessary in order to prevent a recurrence of the adhesions. That this is so I have proved through operating a second time on a woman who had undergone the operation of salpingostomy, but had not had the uterus suspended. At the first operation there were numerous adhesions surrounding the appendages, and both tubes were occluded at their abdominal ends, the uterus itself being inclined backwards. For some time after the first operation the patient had felt relief, but later her backache returned, and on examination I found that the uterus had again became adherent. A second operation was therefore performed and the adhesion separated. When the tubes were inspected both abdominal ends were found to have remained patent. The uterus was suspended by the round ligaments and all the symptoms have been relieved. The patient has not become pregnant, but 12 months only have elapsed since the second operation. I have, however, satisfied myself that the tubes do remain patent, and, further, that it is necessary to combine a suspension operation with salpingostomy.

The operation of salpingostomy should always be done by the abdominal route in order that a thorough inspection of the pelvic contents may be made. Passing a probe down the tube is, I believe, an error. If the tube is found to be patent then the passage of a probe is unnecessary, whilst if it is not patent harm may be done by creating a false passage. We know, too, that pregnancy has occurred even after ligature of the Fallopian tubes, so that Dame Nature will help us if we do not do too much local injury.

The time element is important, for I have repeatedly noticed that in the more chronic cases of pelvic adhesions from tubal disease the ovaries were small, suggesting the existence of an atrophic process. If this be substantiated it is surely an important argument against delay in advising operative treatment when indicated. For it need hardly be added that the capability of the ovary to produce ova is as essential as the patency of the Fallopian tube.

It has been argued that restoration of the patency of the abdominal tubal ostia might lead to a fresh infection from the tubes, but in the majority of chronic cases active infection has long since disappeared, and the contents of the tubes, if there be any, are found after bacteriological tests to be sterile. If the tube contains any fluid this should be expressed. Much, however, depends on the proper selection of cases, for if this operation were adopted in all stages of tubal disease without selection it would soon be discredited.

Cases Suitable for the Operation.

Let us see what cases are suitable and how they can be recognised. In the first place, it is assumed that the condition of the husband has been investigated, and if he has chronic gonorrhœa this should be treated. Besides the history of sterility the woman will complain of increased loss at the monthly periods, with or without some premenstrual pain. There may be, as in one of the cases narrated, some complaint of sickness and abdominal distension, indicating involvement of the peritoneum. There is frequently backache referred to the sacrum when the uterus is fixed backwards, and coitus may be painful. On examination the uterus is found to be partially fixed—i.e., it can be moved, although it cannot be replaced in its normal position. It may be tender on pressure, and the Fallopian tubes are found to be thickened and larger than normal. But the uterus may exceptionally be freely moveable, although the tubes are sealed. This I have proved by actual inspection through an abdominal incision. On the other hand, the adhesions may be so extensive that the uterus is fixed backwards in the pelvis. Even in such cases the tubal ostia may have remained patent although surrounded by adhesions. Under such circumstances it suffices to divide the adhesions, to arrest all bleeding, and to suspend the uterus in the manner indicated. Successful pregnancy has frequently followed such operations in my own practice.

A good illustration was afforded by a patient upon whom I operated for an early pregnancy in the left tube. Her husband confessed to me that he had infected his wife with gonorrhœa and in consequence she developed salpingitis. A tubal pregnancy was diagnosed necessitating an abdominal operation. The appendages on the left side were removed, and on inspecting the right tube and ovary they were found to be embedded in adhesions. The adhesions were carefully divided, and it was found that the abdominal end of the tube was still patent. The patient made a good recovery from the operation, and 18 months later gave birth to a full-time, healthy male child. This was a source of great gratification to both parents, but especially to the husband, who was deeply grieved over the injury he had inflicted on his wife.

Case of Tubal Pregnancy following Salpingostomy.

As far as I have been able to ascertain from a search through the literature no example of the occurrence of tubal pregnancy after the operation of salpingostomy has been recorded.

On June 28th, 1910, I operated on a woman who had an adherent retroverted uterus, and at the operation the abdominal ends of both tubes were found to be sealed. The adhesions were divided and a new opening made for each tube. The uterus was then suspended in the usual manner. The patient made a good recovery and left the hospital at the end of three weeks. Soon after her return home she must have been impregnated, for early in September during my absence on a holiday she was admitted into another hospital, and an early ruptured tubal pregnancy was removed.

This case is one of great interest and importance, but it does not warrant the conclusion that the operation of salpingostomy renders a woman more liable to the occurrence of tubal pregnancy. It shows, however, that the tube remained patent after the operation.

A Test Case.

Let me now recite to you what may fairly be claimed to be a test case.

A patient, aged 30 years, married for six years and sterile, came to consult me on account of great pain at her monthly periods, the passage of membranous casts, and her continued sterility. Menstruation had begun when she was 17 years of age, and was regular and somewhat profuse. Six months

[2] Verhandlungen der Deutschen Gesellschaft für Geburtshülfe und Gynäkologie, 1889, Band iii., p. 376.
[3] Sammlung Klinischer Vorträge, Nr. 343; Verhandlungen der Deutschen Gesellschaft für Gynäkologie, IV. Kongress, p. 245; Krankheiten der Eileiter, p. 215.

after her marriage she stated that she had had a more or less constant loss of blood for three months, and then membranous casts were passed. Menstruation then recurred every five weeks, lasting three days without profuse loss. Pain in both iliac regions was experienced for one week before the onset of the period, and it continued during the period. Backache continued in the intervals. The patient had been curetted two years previously without benefit, had seen specialists in this country, in France, and in America, and had undergone treatment by electricity and other methods.

I found on examination that the uterus was displaced backwards and partially fixed, and there was evidence of tubal thickening. Both husband and wife were very anxious to have a child. I therefore recommended an exploratory operation, which was performed in October, 1908. The appendages were adherent, with their abdominal ostia sealed. The adhesions were divided, a new opening was made in each tube, and the uterus was suspended. She made a good recovery and again reported herself on March 8th, 1909, when it was noted that the pre-menstrual pain was better and also the backache. She still passed casts at her period, accompanied by pain. The uterus was found to be in good position. On July 15th, 1910, the patient again came to see me as she was contemplating going abroad with her husband. She looked and felt much better and had lost her headaches from which she previously suffered, but she still passed membranes. I had an opportunity of examining one of the membranes and it was not so thick as those I have examined in bad cases of membranous dysmenorrhœa. I gave her iodide of potassium and told her to take it with great regularity. She returned from abroad and came to see me on Jan. 2nd, 1911. She then stated that menstruation had ceased on Sept. 28th, 1910, and that no cast was passed during that period. The breasts were swelling and she had morning sickness. On examination I found that she was three months pregnant. She had taken the iodide of potassium from July 15th, 1910, to Oct. 8th, 1910. On July 15th, 1911, she gave birth to a well-developed male child.

Here, then, was an operation performed in October, 1908, followed by the occurrence of conception two years later, showing clearly that the patency of the tubes had been maintained. Moreover, various methods of treatment had been tried and found wanting until an abdominal section was performed and the cause of the sterility discovered and remedied.

It would appear that the benefit to be derived from such operations becomes apparent within two years, whilst after that interval of time the prognosis becomes correspondingly bad.

I believe this operation of salpingostomy has a great future and deserves to be reckoned one of the triumphs of modern abdominal surgery. If cases are suitably selected according to the indications already mentioned and the potency of the male determined, there is every reason to hope that it will prove of lasting benefit to the previously sterile woman.

It may be said that an abdominal operation, with all its risks, is a severe remedy to recommend. But the risk in the hands of those accustomed to such operations is a small one, amounting, indeed, only to that of the anæsthetic, and for this reason it is not more dangerous than the too frequently performed operation of curetting. Maternity is one of the strongest human instincts, and if the situation is properly explained to both husband and wife consent is not difficult to obtain. No surgeon can promise a successful result, but he can by surgical operation place a woman in such a condition that pregnancy is possible, whereas as long as her tubes remain sealed she is sterile for all time.

Uterine Displacements.

Much has been written for and against the influence exercised by uterine displacements in the causation of sterility. Statistics have been produced to show how backward displacements hinder conception, and again to show that conception is not hindered. But in this regard each individual is a law unto herself, and it is easy to produce statistical evidence to favour either view.

Now that surgical treatment is so frequently employed for uterine displacements, it is beginning to be realised that they do play an important rôle in hindering conception. How this effect is produced is probably owing to the changes resulting in the displaced organs, principally from chronic venous congestion which is evidenced clinically by menstrual pain, increased menstrual loss, and intermenstrual discharge. Here, again, the curette is freely used for the treatment of such conditions, but surely it is illogical to use a curette when the pathological changes are the result of the abnormal position.

That pregnancy so frequently follows after operations undertaken for the cure of displacements is important evidence in favour of the view that in certain individuals they do hinder conception. Let me give two examples.

A patient married for 12 years had one child a year and a half after her marriage and was not again pregnant. She came complaining of bearing-down pain, backache, increased menstruation, and intermenstrual discharge, and could not understand why she did not again become pregnant. On pelvic examination the uterus was found to be slightly enlarged, moveable, and displaced backwards. The patient had had much local treatment without benefit. I recommended and performed ventro-suspension in May, 1909. She was greatly relieved by the operation, and on August 1st, 1910, menstruation ceased, and she found that she was pregnant. The pregnancy proceeded normally and she was finally safely delivered of a female child.

A second example is that of a patient who had had a son a year after her marriage and had not again become pregnant for five years. I was asked to see her because of bearing-down pain and difficulty in standing and walking and because she did not have another child. I found that the uterus was sinking down in the pelvis—descensus uteri—and accordingly recommended hysteropexy. This operation was performed, and within a year she became pregnant and ultimately gave birth to a male child. Both parents had been particularly anxious to have another child.

It would be easy to multiply examples, for there is no doubt that displacements do hinder conception in certain individuals.

I do not employ what is called the Alexander-Adams operation, which consists in shortening the round ligaments after opening the inguinal canal on each side, because I prefer to open the abdomen, inspect the pelvic contents, and deal with whatever may be found. If the tubes are sealed, then salpingostomy is also performed. As pessaries do not cure chronic displacements they should not be recommended. When a backward displacement is adherent pessary treatment is contra-indicated, and operation consisting in the division of adhesions and ventro-suspension is frequently followed by successful pregnancy.

Curetting in the Treatment of Sterility.

A sterile woman still clinging to the hope of maternity, going hither and thither for treatment, will sooner or later be curetted. And yet with increasing experience I am convinced that this operation has definitely limited indications as a method of treatment. Nay, more, I believe it to be in not a few instances distinctly harmful. In the treatment of primary sterility it is rarely indicated; in the acquired form it has a limited sphere of usefulness. All are familiar with the association of spasmodic dysmenorrhœa and sterility: you relieve the dysmenorrhœa and pregnancy follows. For this purpose dilatation of the cervical canal is required, not curetting. Indeed, in a few instances, especially where menstruation is scanty, complete cessation of the menstrual flow has occurred after curetting. Again, after vigorous curetting partial and complete obliteration of the uterine cavity has supervened. Although the curetting may not produce these results, yet it is unnecessary and should not be done. It is indicated in cases of what is termed chronic glandular hypertrophic endometritis associated with free menstrual loss occurring in a uterus normally placed and where no tubal disease exists. Pregnancy may follow curetting for this condition and such cases are well known. Before, however, any scraping operation is undertaken a careful bimanual examination should be made under an anæsthetic in order to exclude the possibility of the existence of tubal disease.

In the acquired forms of sterility curetting is only indicated when the uterus is normal in position, when the appendages are free from disease, and when free menstrual and intermenstrual discharge point to some morbid condition of the endometrium.

A good illustration was furnished by a patient aged

32 years, who had had one child six years previously, and who for succession reasons was anxious to have another. The uterus was slightly enlarged, normal in position, and moveable. No tubal disease could be detected. She was losing freely at her periods, and had a mucoid intermenstrual discharge. The uterus was dilated and lightly curetted, and ten months after the operation she became pregnant and was later delivered of a male child.

Thus in the great majority of cases of primary sterility curetting is an unnecessary operation, and in the acquired forms its indications are limited.

Division of the Cervix.

A few words must be said about what has figured so largely in the past in the treatment of sterility—viz., the operations for division of the cervix. Although it is obvious that as long as the cervical canal is patent spermatozoa may pass through, it is alleged that cervical stenosis does hinder their upward course, as for some time after cohabitation they may be found in the cervical secretion in such cases. The contraction may be at the external os, at the internal os, or in the canal.

The late Sir J. Y. Simpson made a great reputation through his operation of bilateral division of the cervix for the cure of sterility, and undoubtedly he was successful in many cases. Now, if this operation be considered in the light of modern experience it really fulfils many indications. It causes wide dilatation, it cures dysmenorrhœa even when simple dilatation fails, it provides free drainage, and so may lead to improvement in the condition of the endometrium. Simpson used what is called a metrotome or hysterotome (a sort of concealed bistoury), introducing it as far as the internal os, and then withdrawing the instrument pressed out the blade and cut through the cervix on one side in such a way that at first only the internal fibres are divided, and the incision as it becomes lower becomes always deeper till the point emerges somewhat below where the mucous membrane of the vagina becomes reflected on the cervix, while below this point the portio vaginalis is divided in all its thickness. The instrument is then turned round and a similar incision is made on the other side. The wound was subsequently dilated by sponge tents, metal dilators, or the finger is inserted every two or three days for a time, or the corners of the wound are touched with silver nitrate. He speaks of hæmorrhage, cellulitis, and peritonitis as rare complications.

Those who have followed Simpson do not appear to have carried out his idea, for in his operation there is a very complete bilateral division of the cervical tissues. After such an operation there may be discharge and eversion of the mucosa, and in order to obviate these disagreeable sequelæ I have been in the habit of covering the cut surface of the cervix on each side by means of a flap of mucous membrane obtained by under-cutting. Following the division of the cervix a flap is marked out and dissected up; a piece is then excised from the cut surface of the cervix and the flap is stitched to the mucosa of the cervical canal. For the division of the cervical canal higher up I use a small scalpel. A piece of gauze is then placed in the canal and left for 48 hours.

There are examples of spasmodic dysmenorrhœa and sterility which dilatation alone does not cure, and for these such an operation as this should be tried. Much ingenuity has been spent over devising operations for division of the cervix, but Simpson's operation is the most thorough, and with the modification which I have ventured to suggest it has a definite sphere of usefulness.

Time will not permit me to describe other operations, such as ovarian resections, ovarian grafting, and myomectomy, from all of which occasional good results have been obtained. I trust, however, that I have been able to do something towards lifting the veil of quackery and humbug which surrounds the treatment of "sterility in women."

Wimpole-street, W.

UNIVERSITY OF LONDON: UNIVERSITY COLLEGE.—The introductory course in chemistry, physics, and biology for medical students held at University College will begin on Friday, March 1st, instead of, as hitherto, at the beginning of the third term in May. Full particulars may be obtained from the secretary of University College.

THE KLEBS-LÖFFLER BACILLUS.

A FEW NOTES TO EMPHASISE THE IMPORTANCE OF BACTERIOLOGICAL INVESTIGATION.

BY IDA C. TENGELY, M.D. LOND.,
SENIOR ASSISTANT RESIDENT MEDICAL OFFICER, BRADFORD UNION HOSPITAL.

An ulcer of the leg infected with the Klebs-Löffler bacillus.—This occurred in a single woman, aged 33, who had a very large dirty ulcer on the lower half of the left leg. She stated that she had had it for 15 years, and that it had not been healed for 10 years. The left femoral and inguinal glands were enlarged. There were no scars from other ulcers to be seen. Her teeth had been extracted, and no evidence of syphilis could be found. The veins of the leg were not dilated or varicose. There was no history of injury. The patient's general condition was good. There was nothing characteristic about the appearance of the ulcer. For 11 months it was treated in hospital. The treatment included skin-grafting of the ulcer (the grafts took at first and spread, and then for no obvious reason broke down); and at different times the patient was put on potassium iodide, calcium iodide, sarsaparilla, and she was finally given 4½ grains of salvarsan intravenously. This, by the way, caused no unpleasant symptoms. It was thought that after the salvarsan the edges of the ulcer looked bluer and more healthy, but the patient then took her discharge from hospital. She was readmitted in a month prepared to have her leg off. The ulcer was larger and dirtier than ever, discharging pus profusely. At the end of three weeks a swab was taken, and from this was grown a pure culture of the Klebs-Löffler bacillus. The patient was treated with anti-diphtheria serum, two doses of 6000 units and one of 2000 units being given subcutaneously, and the ulcer was treated directly with the serum. This was done by painting it daily with the serum and letting the latter soak in for a minute or two, and then a piece of sterile gauze was stretched over and this soaked with serum. It immediately began to heal and is now quite healed. But it required careful attention owing to the repeated profuse formation of crusts, which had to be continually removed, and which no doubt harboured the bacilli. Also little blebs with blood-stained serum would arise beyond the edges. These were opened and soaked with serum.

Throughout there was no rise of temperature, and the patient appeared to be in the best of health. A swab from the throat was negative, and there was no discharge from ears or nose. The source of the infection could not be traced. The fact that the skin-grafts, after they had taken and were spreading, suddenly broke down suggests that the infection took place then.

The Klebs-Löffler bacillus in aural discharges.—In three cases of discharging ears Klebs-Löffler bacilli were reported to be present in cultures taken from swabs of the discharge. In all three cases the discharge had only been noticed a few days, and did not follow any of the infectious fevers. It was very offensive and in two cases was blood-stained at first. The children had not sore-throats, there was no rise of temperature, and they did not appear to be ill. The cases did not respond well to serum treatment, and the discharge becoming chronic two cases were operated on.

The Klebs-Löffler bacillus in discharge from the eye.—During an epidemic of diphtheria the Klebs-Löffler bacillus was found in cultures taken from the conjunctiva in several cases. In the majority of the affected eyes there was copious purulent blood-stained discharge, but in others there appeared to be a simple conjunctivitis. It was impossible to distinguish these cases as diphtheria without the aid of the microscope. Several of the cases were children who were convalescent from measles.

The Klebs-Löffler bacillus in the throat.—There is no doubt that the diphtheria bacillus (Klebs-Löffler bacillus) can be present in the throat without giving rise to symptoms, as in contact cases; and it is equally true that it can be present in the throat, causing a very mild inflammation without ulceration, without rise of temperature or very slight rise of temperature, and without making the patient very ill. The glands below the angle of the jaw are generally enlarged, but this is not an infallible sign. During the epidemic

already referred to several such cases of sore-throat occurred in which Klebs-Löffler bacilli were present in the throat, and even in pure culture without symptoms or with very mild symptoms. In all these cases as soon as the child complained of sore-throat a swab was taken, a dose of serum injected, and the throat treated with hydrogen peroxide, 1 in 6, so possibly further progress was prevented, but in several it was some weeks before the throat was free from the bacillus and the report on the swab returned negative.

During the epidemic severe cases of clinically typical diphtheria occurred with the mild ones, and the cultures were examined by the City Bacteriologist. In the October number, 1911, of the *Journal of Clinical Research* is recorded a case of primary diphtheria of the external urinary meatus, and in this case it may be noted that there were no marked constitutional symptoms.

Bradford.

NOTE ON

AN INVESTIGATION INTO ULCERATING GRANULOMA OF THE PUDENDA, AS FOUND IN THE GOVERNMENT LOCK HOSPITALS, WESTERN AUSTRALIA.

BY DONALD STEEL, M.B., CH.B. GLASG.,

LATE PATHOLOGIST TO THE GOVERNMENT OF WESTERN AUSTRALIA; LATE MEDICAL SUPERINTENDENT TO THE LOCK HOSPITALS, WESTERN AUSTRALIA.

THIS investigation—undertaken mainly at the instigation of Dr. J. H. L. Cumpston, then Acting Principal Medical Officer, Public Health Department, Perth—was not confined to the etiology of the disease, which is still obscure, but also included an inquiry into the means of determining when the ultimate cure of the diseased natives should be finally attained, as well as the most suitable therapeutic measures to be adopted in each case.

It is unnecessary to enter into the clinical description of the disease in its various phases, which are many, but briefly to state that the most common form consists in a granuloma, which may be grouped with actinomycosis, tubercle, syphilis, yaws, &c., in regard to its main histological features. Side by side with the granuloma, ulceration is nearly always proceeding with or without an attendant fibrosis; not always so, however, as these ulcers may heal up, leaving the granulomatous thickening as the sole evidence of the disease, or the granuloma itself may break down, leaving a putrid fungating sore, with usually a fœtid discharge.

The Etiological Factor.

The first means undertaken to discover the causation of the disease consisted in ascertaining what germs were to be found in the open lesions. As was to be expected from the fœtid discharge from a broken-down granuloma little could be made out. Staphylococci, streptococci, bacilli of all kinds with many large spirilla were constantly obtainable, but their causative rôle was most indefinite. Cultures on the usual media, agar, blood agar, blood serum, &c., produced no constant results; a great variety of germs was obtainable.

Removal of the superficial layers, with scrapings taken from the deeper portions of the indolent ulcers, where there was not much accompanying thickening of the surrounding parts, gave more definite results. Spirilla of a somewhat large size, resembling spirillum refringens, were occasionally seen. Sometimes with them, sometimes in their absence, spirochætæ identical in their morphological characteristics with Sp. pallida were found. As this method was open to the objection that these spirochætæ might be extraneous agents, removal of the ulcers with smears made from the deeper tissues occasionally showed the presence of these spirochætæ; in what percentage of cases they will ultimately appear as constant factors is too soon to state. A similar spirochæta has been described by Wise, Clelland, and others as occurring in these lesions.

Again, another parasite was sometimes in evidence, usually in the fungating, granulomatous variety of the infection, and often from the enlarged inguinal glands, when such are present. Generally seen in the large, swollen mononuclear cells, and often in considerable numbers, they possess varying appearances; if for any reason they appear crowded together the bodies resemble enlarged cocci-bacilli, sometimes kidney-shaped, not unlike huge gonococci; but when spread out, or in "spread out" mononuclear cells, there is the appearance of a differentiation into nucleus, rod-shaped, and a surrounding protoplasm.

My present opinion is that we are here dealing with two distinct diseases, or an infection of an already diseased subject with another germ. The latter organism is, presumably, the agent described by Manson as occurring in India.

Five monkeys (Macacus cynomolgus) were under observation. One, the most delicate, was left untouched, called a control. The four others were treated with pieces of tissue, removed from various diseased cases, by scarification over the eyebrows and genitals.

No. 1. A large male animal. Was in good health eight months later, having shown no lesion whatsoever.

No. 2. An adult female. Six to eight weeks after treatment a more or less typical lesion appeared over both eyebrows. Any lesion on the genitals may easily have escaped notice. Following on the disappearance of these sores, cachexia set in and the animal died from six to seven months later.

No. 3. A young female. This animal showed less marked eyebrow lesions, but also became cachectic, with local pustular eruptions, and died some months after infection.

No. 4. A young male. A somewhat similar course to No. 3.

Serum Tests.

It was thought that the most probable means of determining when a permanent cure was attained would be found on the lines of one of the complement deviation methods. After using various modifications, Fleming's amongst others, Wassermann's original technique was employed. Sheep's red blood corpuscles, being available every second day, were injected into rabbits and kangaroo-rats in various quantities. The serum obtained was inactivated. Normal kangaroo-rat serum was obtained daily and supplied the complement. Antigen was made from guinea-pig liver, kangaroo-rat liver, and granulomatous material.

Using controls for every experiment and taking the blood from nearly 40 cases, 80 to 90 per cent. of these gave the complement deviation reaction as found in syphilis. The reaction varied considerably in different cases.

Treatment: Therapeutic and Surgical.

Mercury and potassium iodide had been administered on these islands in many cases over long periods without apparent effect. Treatment by vaccines, obtained from germs found in the discharges, and also with stock streptococci, staphylococci, and B. coli vaccines was carried out, but without success. Atoxyl, arsacetin, soamin, and orsudan were injected subcutaneously over long periods; a few of these cases appeared to benefit at first, and yet the improvement was entirely temporary. Later salvarsan was injected intravenously. The value of this drug was undoubted; the beneficial effects were, in some of the worst infections, apparently instantaneous, and paved the way to a permanent cure when all other measures had failed.

Treatment latterly consisted in the use of salvarsan, supplemented by calomel and grey oil intramuscularly, followed by operation and excision of as much of the growth as possible. Grey oil and calomel were used intramuscularly alone or in alternate doses; the precise value of these preparations was indeterminate, the impression remaining that, although powerless to cause the absorption of any granulomatous growth, or even to check the spread of the ulcerative processes, yet that they acted in a beneficial manner on the organism. Hæmatological observations would be required to define this action definitely.

The employment of caustics, beneficial in some, actually harmful in other cases, has a limited range; a large number were tried, chromic acid and silver nitrate being preferred latterly.

Résumé.

The argument may always be put forward that here we are dealing with two distinct diseases. Without doubt a spirochætal or protozoal disease is present. Is there a disease distinct from this spirochætal disease? Syphilis from clinical observations alone is a complicating factor. What is the

exact etiological rôle of these bodies found in the mononuclear cells? Are they simply evidence of an active phagocytosis? (About 300 cases have been under observation over a period of 13 to 14 months.)

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A NOTE ON GLAUCOMA.

BY LEONARD HILL, M.B. LOND., M.R.C.S. ENG., F.R.S.,
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IN his interesting paper on Theory and Practice in the Treatment of Glaucoma,[1] Mr. J. Herbert Parsons makes the following statement: "The physical conditions of the formation of lymph in other parts of the body are consistent with its production by a process of filtration out of the capillaries; the amount poured out and its chemical composition are dependent upon the difference of pressure on the two sides of the filtering membrane—i.e., the capillary wall." I think that the evidence which has accumulated on all sides in recent years controverts this statement, which is altogether opposed to the present position of physiological knowledge. The evidence is decisively in favour of the view that the flow of lymph is controlled by the activity of the tissue cells—that is, controlled by their changing and elusive physico-chemical state, or, if we choose to call it so, by their vital selective activity. I venture to say that there is no evidence which demonstrates that there is a hydrostatic difference of pressure on either side of the capillary wall. The capillaries are lined by wet protoplasmic cells and are surrounded by wet protoplasmic tissue cells. There is nothing equivalent in structure to a rigid filtering membrane. The delicate choroidal fringes in the eye hang in a bath of aqueous fluid and the cells lining the fringes secrete the fluid. Each pulsatile expansion in the arteries of the eye helps to drive a little of the aqueous into the efferent veins, and thus the effective circulation of this fluid is maintained—by secretion and the pulse.

I would say that the cause of the increased tension in glaucoma primarily is altered metabolism. The altered metabolism is produced by bacterial toxins or otherwise, and results in chemical changes in the colloids of the eye which swell by absorbing more water. Obstruction of the venous and aqueous outflow by sclerotic changes with resulting lack of oxygen and increased production of acid may well be a possible cause. Martin Fischer has shown that an excised eye becomes glaucomatous if placed in acidulated water, and to such an extent that it may burst the sclera. The presence of any salt markedly lessens the swelling produced by acid, and "subconjunctival injection of 1/8 to 1/6 molecular (4·05 to 5 41 per cent.) solutions of chemically pure sodium citrate in clinical cases of glaucoma is entirely harmless and is always followed by a prompt fall in ocular tension." The fall in tension is appreciable within ten minutes, and lasts from three to six days, with relief of all the subjective symptoms.[2] The enucleated eye placed in an acid solution shows a progressive decrease in the depth of the anterior chamber. This Fischer attributes to the unequal swelling of the colloids of the eye, those posterior to the lens swelling more than those anterior. Fischer suggests, then, that the obliteration of the so-called filtration angle is not the cause but the result of the glaucomatous condition.

The eye is to all intents an indistensile structure (unless its coats are altered by metabolic change). The increased swelling of certain tissue elements in the eye must be compensated for by a diminished volume of blood, and this entails increased pressure in the capillaries and veins within the eyeball. In such case there must be an approximation towards a rigid system of vessels, for otherwise the circulation would not be maintained. The tension of the eyeball is the capillary venous pressure which pertains in the eye of the normal or glaucomatous person. The eye, according to the varying state of its metabolism, can contain more tissue substance and less blood, or more blood and less tissue substance. It is distended with tissue fluid absorbed by the colloids in the eyeball as well as with blood, and hence the positive pressure does not wholly disappear at once when the circulation ceases. Dr. Thomson Henderson has done great service in drawing attention to the conditions which control the tension of the eyeball and the circulation, but I think he has not laid sufficient stress on the primary cause of the œdema—viz., metabolic change in the tissues.

If the primary cause of glaucoma is disordered metabolism, the best treatment is the promotion of a greater flow of tissue lymph. Just as in other acute and chronically inflamed parts incisions, congestions, cupping, &c., provoke the healing process by bringing more blood and tissue lymph, so in the glaucomatous eye that operation will be most effective which allows the most free circulation of blood and of aqueous fluid.

Loughton, Essex.

[1] THE LANCET, Jan. 6th, 1912, p. 15.
[2] Martin Fischer: Œdema, p. 131, Wiley, New York, 1910.

A CASE OF RHINITIS CASEOSA.

BY HAROLD W. WILSON, M.S. LOND., F.R.C.S. ENG.,
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THE following case came under my care at the Victoria Hospital for Children, Chelsea, in November, 1911. At first my impression was that the child was suffering from a somewhat atypical form of nasal diphtheria. Cultivations were at once made from detached pieces of the membrane, and it was only when the absence of B. diphtheriæ (Klebs-Löffler bacillus) was reported by the Lister Institute of Preventive Medicine and further investigations had been made that I realised that I had to deal with a much more unusual condition—viz., rhinitis caseosa. Mr. F. A. Rose very kindly saw the patient with me and assisted in the examination of the material removed. The disease appears to have been discovered at quite an early stage, and the nose did not show any of the advanced and severe lesions, such as perforation of the septum and outer wall of the nasal fossa with extensive involvement of the antrum, which are recorded in several of the cases published.

The patient, a healthy-looking girl aged 11, was brought to me on Nov. 21st, 1911. Her mother, who appeared to be an extraordinarily observant woman for one of her class, stated that the child had had a yellowish discharge from the right side of the nose for ten days, and she had noticed that the right side of the nose contained some whitish material. For the last month the patient had suffered from occasional bilateral headaches, felt across the upper part of the forehead, but these had not been very marked and had not occasioned much discomfort. The child had the typical sleepy "adenoid" facies and the bridge of the nose appeared flattened out. There was a high arched palate, but no evidence of tuberculosis or congenital syphilis. No tenderness over the frontal sinuses or maxillary antra could be elicited. Tonsils natural. Tonsillar lymphatic glands just palpable. Adenoids: a firm pad on the roof of the nasopharynx. Nose: left side natural. After syringing out a certain amount of muco-pus with an alkaline lotion from the right side the following appearances were noted. Vestibule natural. On the outer wall of the nasal fossa in the middle turbinate region was a yellowish-white "membrane." In extent it measured, roughly, about 1 in. by ½ in., with its centre over the middle turbinate bone and its long axis directed from before backwards. It extended forwards for a very short distance on to the atrium, and did not reach the inferior turbinate in a downward direction. The "membrane" was distinctly raised above the surface and had a very definite anterior border. In the latter situation the surrounding mucous membrane showed an abrupt bright red line of injection, which reminded one very much of the appearance of a "line of demarcation." The mucous membrane covering the remainder of the atrium and septum appeared healthy.

With a pair of nasal forceps it was found possible to detach and remove almost all the "membrane," and when this had been done, except for several small oozing points and, here and there, a slight abrasion, the surface of the underlying mucous membrane appeared healthy and was quite free from ulceration. A week's subsequent syringing with an alkaline lotion completely cleared away any scraps of material which still remained, and the nose at the end of that time appeared quite normal.

By trans-illumination the left antrum was seen to be

natural. The right antrum was translucent, but not so clear as on the left side. Infra-orbital and nasal taches were visible but not very distinct. These appearances, I think, could be satisfactorily accounted for by a certain amount of catarrhal thickening of the lining membrane.

The material removed had a slight fœtor and appeared more like putty than anything else. It was greyish in colour and of a soft, friable consistency, but at the same time was different from the ordinary caseous material one associates with tuberculous disease. Microscopically the bulk of the mass was seen to consist of large numbers of long fine needles, mixed with a structureless material, the former probably of a fatty nature, as they stained well with Sudan III. In addition there were numerous micro-organisms, a few pus cells, and a few small crystals. No mycelial threads could be found. The cultivations taken showed a short-chained streptococcus and staphylococcus pyogenes aureus.

Wimpole-street, W.

Medical Societies.

ROYAL SOCIETY OF MEDICINE.

OBSTETRICAL AND GYNÆCOLOGICAL SECTION.

Missed Labour.—Rhabdo-myosarcoma of the Uterus.—Relative Size of the Uterus in Cases of Hydatidiform Mole.—Exhibition of Specimens.

A MEETING of this section was held on Jan. 4th, Dr. AMAND ROUTH, the President, being in the chair.

Dr. W. C. SWAYNE (Clifton) read a paper on Two Cases of Missed Labour. Spiegelberg defined missed labour as being the occurrence of the nisus of parturition at or about term, with the subsequent evacuation of a dead or decomposed fœtus either by nature or by art. The first case described was one by Oldham in 1847. The period of retention varied greatly. Hagmann described one case in which delivery by Cæsarean section was necessary, the fœtus being retained in the uterus for 440 days after the last menstruation, or about five months after term. The condition was a rare one, only 15 cases having been collected by Hagmann in 1904. In Dr. Swayne's first case the patient, who had had three previous pregnancies, last menstruated on Oct. 16th, 1904. On June 10th, 1905, she had a flooding, and on the 24th the liquor amnii was discharged, and a mass expelled which the midwife attending recognised as placenta. She ligatured and cut the cord. This was followed by an offensive purulent discharge, and on August 8th a portion of the fœtus began to come away per vaginam. The patient was admitted to the Bristol Royal Infirmary in a very grave condition, semi-comatose, and the uterus was found to be enlarged to the size of a six months pregnancy. The contents of the uterus, which were decomposing, were removed with great difficulty after dilating the cervix, but in spite of all restoratives the patient sank the same evening. In Dr. Swayne's second case the patient last menstruated on Dec. 17th, 1906. On Sept. 17th, 1907, the patient had slight pains and uterine contractions, but these soon passed off, and nothing more occurred till Nov. 30th, 1907, when Dr. Swayne was sent for. Labour had begun and the os was dilating. Owing to the large size of the child delivery had to be effected by craniotomy. The child was retained for 340 days after the last menstruation, and weighed 14 lb.

Dr. W. BLAIR BELL (Liverpool) read a paper on a case of Rhabdo-myosarcoma of the Uterus. A patient, aged 70, had the menopause 20 years ago and remained quite well until July, 1911, when she noticed a slight reddish discharge from the vagina, which was not offensive then but became so later. On Sept. 15th she passed a large piece of growth, which was found on histological examination to be a mixed-cell sarcoma. The uterus, tubes, and ovaries were removed a few days later, and the patient made a good recovery. Ten weeks later she was suffering from intestinal obstruction and the abdomen was found to be full of growth. Enterostomy was performed and the patient lived for about a week. The specimen removed showed the uterine cavity to contain a large polypoid growth, round which the wall of the uterus was stretched. On further examination the tumour proved to be a mixed-celled sarcoma, in which there were a large number of broad spindle cells, and some of them were striated muscle cells of a somewhat embryonic type. The recurrent growth in the abdomen was also found to be a mixed-celled sarcoma.

Mr. HENRY BRIGGS (Liverpool) read a paper on the Relative Size of the Uterus in Cases of Hydatidiform Mole, with illustrative cases and specimens. Amidst the ample available evidence that the clinical features of cases of hydatid moles have, in the main, been accurately stated by obstetrical writers, the author proposed to discuss only one feature—the relative size of the uterus in cases of hydatid mole, and to produce clinical reports of 23 cases and the specimens collected by him chiefly from his own practice during the past 18 years in support of the following conclusions. Firstly, that the uterus in size was very rarely, and then only temporarily, proportionate to the period of pregnancy (only 1 case in the 23), and was almost invariably disproportionate, in 16 of the cases being undersized and in 4 of the cases being oversized. Chorion-epithelioma was present in two cases—in one undersized, in the other oversized. Secondly, Mr. Briggs contended that in almost all cases in which there was either abnormal uterine tension or a rapid increase in the size of the uterus, the retained blood or intra-uterine hæmorrhage ought to be considered. A complete clinical report of the 23 cases embodied in the paper was then given.—Dr. W. S. A. GRIFFITH drew attention to the unreliability of the measurements of the size of the uterus when taken in relation to the navel, for whereas the usual height of the lower border of the navel was 6 inches above the pubes; in a considerable number of women it measured from 5 to 7 inches. Added to this was the difficulty of certain knowledge of the duration of pregnancy. At the same time he was quite prepared to agree with Mr. Briggs that a uterus containing a cystic mole was often smaller than a normal pregnant uterus of the same period. Dr. Griffith was not surprised that Mr. Briggs avoided the question of diagnosis. His own experience was that when the cervix was closed his diagnosis had usually been at fault.—Dr. G. BLACKER, after expressing appreciation of Mr. Briggs's paper, said that for a long time past he had taught that the size of the uterus might be greater or less than, or equal to, the size of the organ at the corresponding period of pregnancy. Mr. Briggs's paper brought out the fact that in a considerable number of the cases the uterus was definitely smaller than it ought to be. At the same time he thought that in many of the cases quoted the mole had been retained some time in the uterus, and this might explain the apparent anomaly. During the period of retention the mole may have undergone retrogressive changes and shrinkage. He gathered from some of the specimens in which the uterus was larger than normal that the author of the paper thought some of this increase due to the presence of hæmorrhage in utero, but the case of hydatidiform mole he had shown before the section proved conclusively that the undue enlargement was due to the size of the mole itself. The matter was of great clinical interest, and he thought Mr Briggs had quite proved his point.—The PRESIDENT had seen several cases of hydatid mole where the uterus was not enlarged beyond the supposed period of gestation. He was surprised that one of the cases of chorion-epithelioma had been preceded by one of the smaller varieties of hydatid mole. He had thought it probable that the larger hydatid moles, showing more activity of growth and greater vascularity, were more liable to develop chorion-epithelioma than the smaller and more quiescent ones. He congratulated Mr. Briggs on his valuable contribution to their knowledge of the subject.—Mr. BRIGGS, in reply, admitted the difficulty, and sometimes the impossibility, of substantiating statements as to size changes in the uterus. These drawbacks, however, cut both ways, affecting oversize and undersize, principally in changes of slower and lesser degrees, but the predominance in the long run would come out. Mr. Briggs explained that he had himself tardily yielded to an 18 years' acquaintance with undersize, because he had seen it repeatedly verified, and the intra-uterine hæmorrhage recently observed in Case 1 encouraged further inquiry.

The following specimens were exhibited:—

Dr. ROBERT WISE: Cervical Tube to be left in the cervix after dilatation.

Dr. R. DRUMMOND MAXWELL: Angio-chorioma of Uterus.

Dr. BLAIR BELL: (1) Exfoliation of Endometrium during

Menstruation; and (2) Bilateral Solid Tumours of the Ovary, probably carcinomatous sarcomata.

PATHOLOGICAL SECTION.

Two Cases of Amaurotic Idiocy.—Micrococcus Zymogenes in a Case of Malignant Endocarditis.—Phagocytosis from the Adsorption Point of View.

A MEETING of this section was held on Jan. 16th, Professor R. T. HEWLETT, the President, being in the chair.

Dr. J. TURNER read a paper on two cases of Amaurotic Idiocy or Tay-Sachs Disease. The first case was that of a Jewish girl, aged 13. She was the youngest of 12, of whom the first ten were born dead, or died at birth, or only survived for a few months. For two years before her death she had been subject to epileptiform fits, sometimes having as many as seven in the day. She had marked amblyopia with contraction of the fields of vision. The fundus was not reported upon. Post mortem the brain was very firm and showed marked atrophy of the convolutions. The microscopical appearances were pathognomonic of amaurotic idiocy. The second case was that of a boy aged 5, and was the first case yet published out of upwards of 100 reported, which occurred in a child not of Jewish extraction. He was undeveloped and unable to stand or talk, and had no thumbs. His sight was not tested, nor were his fundal appearances noted. After death the cerebral gyri were found to be shrunken and tough and discoloured brown in the right superior parietal lobe. The cortex was narrow and dark-coloured. The central canal of the cervical cord was dilated for a short distance. Sections of the grey matter stained by the author's pseudo-vital method showed that the ganglion-cells were chiefly affected. Many darkly stained intercalary nerve-cells were also seen, which appeared fairly intact, and from which a large number of beaded intercellular neurofibrils were observed. The histological changes generally were those of amaurotic idiocy. The cases were exceptional because of the ages of the patients, and the case occurring in an English child was unique in the literature. There were signs suggestive of congenital syphilis in both cases.

Dr. J. A. BRAXTON HICKS read a paper on an Unusual Organism (Micrococcus Zymogenes) in a case of Malignant Endocarditis. He stated that the organism was first described in 1899 by two Americans, MacCallum and Hastings, and subsequently by Harris and Longcope and Birge, also American writers. He could find no other references to it in continental or English literature, and he believed that the present case was the first account of its isolation recorded in this country. After a description of the clinical history of the case, which was one of multiple infarctions ending in cerebral embolism and death, he proceeded to describe the character of the organism isolated during life from the patient's blood. The organism was a Gram-positive, non-motile coccus growing well on agar media in somewhat coarse streptococcal-like colonies. It slowly liquefied gelatin, produced acid from the sugars but no gas, grew feebly or not at all on potato. Blood serum allowed growth, but there was no liquefaction of the medium, such as has been described in some of the cases. Its typical growth was seen in litmus milk, which became decolourised and clotted. The clot then liquefied gradually, the upper layers becoming tinged red. The tinging and liquefaction proceeded and spread downwards and the remains of the clot sank to the bottom of the tube as a precipitate, and this also became tinged red. The final picture was a deeply red-stained precipitate at the bottom of the tube, with a faintly pinkish yellow, clear, supernatant fluid. Injection into white mice only caused illness from which they eventually recovered. Guinea-pigs were unaffected. The organism resembled that described by the American writers, who, however, had found that its growth on potato and its pathogenicity were not constant features, as sometimes it neither grew on potato nor killed white mice, which appeared, of all animals, to be the most susceptible to it. Typical specimens of the cultures were shown.

Dr. J. C. G. LEDINGHAM gave a communication on Phagocytes considered from the Adsorption Point of View. The experiments described were entirely of a quantitative nature and dealt with the relations subsisting between "free" and "bound" opsonin or "free" and "phagocytosed" bacilli, as the concentration of serum or of bacilli altered. He showed that the sensitisation of organisms for phagocytosis could most closely be expressed by an adsorption formula. In the case of phagocytosis of sensitised bacilli suspended in saline solution a similar adsorption process was probably at work, and the value of "1/n" in the adsorption formula ($T/m = k \times {}^{1}/_{n}$) appeared (in this case) to approach unity very closely. The author stated that the experiments were to be regarded as a preliminary contribution to the subject.

LARYNGOLOGICAL SECTION.

Exhibition of Cases.

A MEETING of this section was held on Jan. 12th, Mr. T. MARK HOVELL (Vice-President) being in the chair.

Dr. ANDREW WYLIE showed a case of Paralysis of the Left Vocal Cord in a woman, aged 21 years, which raised the question of recurrent paralysis as a consequence of injury to the recurrent nerve in the neck. The exhibitor had removed an adenoma of the thyroid gland without any benefit so far as the paralysis of the cord was concerned.—Several of the members cited cases of recurrent paralysis which had followed contusions of the neck.

Dr. WYLIE also exhibited a case of Multiple Laryngeal Papillomata in which repeated removal of the growths had failed to bring the disease to a standstill.—The advisability of thyrotomy in such cases was discussed and negatived by most of the speakers. The use of carbon dioxide snow, as a cauterising agent, applied to the bases of the growths after removal was suggested.

Dr. WYLIE also showed another laryngeal case in which a Hard Horny White Growth on the Right Vocal Cord was regarded as malignant, although probably of a mild type.—Mr. HOVELL commented upon the rarity of the appearance and cited a case under his own care in which, after twice being removed endolaryngeally, the growth did not recur.

Dr. W. H. KELSON showed a case of Swelling of the Right Ventricular Band of the Larynx in a syphilitic subject. Iodide of potassium had been administered without effect, but Dr. Lieven (of Aix-la-Chapelle) advised the use of salvarsan, coupled with the energetic inunction of 6 to 7 grms. of unguentum hydrargyri as likely to prove of service.

Dr. W. JOBSON HORNE showed a case of Atrophic Rhinitis with Nasal Obstruction in a child aged 7 years.—Mr. H. CLAYTON FOX expressed himself as being in favour of cold paraffin injections in the treatment of this disease.

Mr. E. B. WAGGETT and Mr. EDWARD D. D. DAVIS exhibited a case of Hyperostosis Cranii or Leontiasis Ossea, with symmetrical osseous swellings involving the nasal processes and bodies of the maxillæ, with radiograms showing the extent of the osseous deposits there and also in the nasal cavities. There were no signs or history of syphilis, but the Wassermann reaction was positive, a fact commented upon by various speakers with reference to the etiology of the disease.

Dr. DAN MCKENZIE exhibited two children who had suffered from Tuberculosis of the Retropharyngeal Lymphatic Glands. Abscesses had formed in each case, one pointing in the posterior pharyngeal wall, and the other behind the sterno-mastoid in the neck.

Mr. FRANK A. ROSE (for Mr. W. D. HARMER) showed a woman, aged 61 years, with a Swelling in the Region of the Left Tonsil ulcerated on its antero-inferior surface, which was referred by the patient to an injury caused by a crust of bread which had stuck in the tonsil.—Divergent opinions were expressed concerning the probable nature of the tumour.

Dr. J. DUNDAS GRANT presented a case of Tuberculous Laryngitis, showing an acute herpetoid appearance in the shape of small blisters on the infiltrated left side of the larynx, which later became oval lenticular ulcers. The condition had caused intense pain which was relieved by the inhalation of equal parts of anæsthesin and orthoform.

MEDICAL SOCIETY OF LONDON.

Exhibition of Clinical Cases.

A MEETING of this society was held on Jan. 22nd, Dr. J. MITCHELL BRUCE, the President, being in the chair.

Dr. A. C. D. FIRTH showed a case of Myoclonus (Paramyoclonus Multiplex). The patient was a boy. Two years ago the child received a severe fright. Soon after this

occurrence the movements were noticed. The child had never had any fits, and no history of epilepsy could be obtained in the family. His brothers and sister were normal. The contractions had been observed in the orbicularis palpebrarum, platysma, the trapezius, the lower fibres of the pectoralis major, the lower fibres of the deltoid, the triceps, the supinator longus, and the rectus femoris. The contractions of the orbicularis palpebrarum were synchronous and exactly resembled a tic; the contractions of the other muscles were symmetrical but not synchronous, and varied much in the frequency of their appearance, at times several contractions in the minute, at other times one contraction only in several minutes, whilst sometimes a muscle in which the spasms had previously been observed was quiet. The movements were most constant in the triceps and the supinator longus. Emotional disturbance appeared to increase the number of contractions. Nystagmus was not present, but both eyes showed evidence of a severe attack of ophthalmia neonatorum. The knee-jerks were brisk, but there was no spasticity of the limbs and no clonus could be obtained. The electrical reactions of the muscles were normal. The case had been under observation for nine months, and no alteration in condition had been noticed.

Dr. F. PARKES WEBER showed a case of Chronic Œdema of the Right Lower Extremity of uncertain origin. The patient was an unmarried English woman, aged 29 years, who said she had always enjoyed good health. She was well built and active, and the only discoverable abnormality about her was the presence of chronic œdema of the right lower extremity. This œdema extended from the foot upwards to the inguinal fold in front and the gluteal fold behind. The parts above were not affected. There was no evidence of anything abnormal in the thoracic or abdominal viscera, in the superficial lymphatic glands, or in the urine. Her thyroid gland appeared well developed. There was no family history of any similar localised œdema. She had never been out of England. The swelling had first appeared about two years ago in the lower part of the limb, and afterwards had gradually extended so as to involve the whole limb. There had never been any erysipelas, but six months ago there had been some redness of the affected limb. If the patient rested in bed the œdema gradually disappeared, but returned when she got up again. Bandaging the limb (or possibly the pressure of an elastic stocking) seemed to be the only practical method of opposing the œdema when she was up. Thyroid treatment had been tried with a negative result. In the case of a young woman, aged 23 years, with chronic œdema of the left lower extremity, shown by Dr. Parkes Weber at the Clinical Section of the Royal Society of Medicine, lymphangioplasty, after Handley's method, had been tried but had failed.[1] In that case, however, the œdema seemed to have been of congenital origin.

Mr. E. MICHELS and Dr. F. PARKES WEBER showed a case of Multiple Polyps of the Large Intestine with Toxæmic Symptoms; appendicostomy. The patient, a Jewish girl, aged 17 years, was the tenth of 11 living children (four others died) of her father by his first wife. Four or five years ago she began to suffer from attacks of diarrhœa and to notice occasional protrusion of a lump from the anus. The attacks of diarrhœa used often to continue for weeks at a time. On admission to the German Hospital on April 24th, 1911, it was found that the mucous membrane of the rectum and sigmoid flexure was studded with soft sessile or pedunculated tumours, some of them as large as a hazel-nut, but most of them considerably smaller. They extended from close to the anus to as high up as one could feel by digital examination or see with the sigmoidoscope. There was continual diarrhœa and the patient's urine contained excess of indican. In the hospital, treatment by drugs and rest in bed failed to stop the diarrhœa, and the patient looked emaciated and very weak. Sometimes there was moderate fever. A blood examination on April 26th gave: hæmoglobin, 45 per cent.; red cells, 3,890,000 per cubic millimetre; white cells, 10,500; stained blood-films showed nothing special. In May some of the polyps seemed to have become gangrenous, and a small one, which came away during rectal examination, was found to consist of glandular tubules (lined with columnar epithelium) and an interstitial fibro-cellular connective tissue, consisting chiefly of cells. On June 1st, Mr. Michels performed an appendicostomy operation, and the large intestine was regularly washed out through the appendicostomy opening, at one time with a weak protargol solution. This seemed to have lessened the diarrhœal tendency and to have relieved the toxæmic condition, but the polyposis of the large intestine, as far as could be made out by digital examination of the rectum and the use of the sigmoidoscope, persisted as before. Yet the patient felt much better and had gained considerably in weight since the operation. The appendicostomy opening was still being kept open.

Dr. F. S. PALMER showed a case of Bulbar Paralysis. It was that of a house painter, married, with children, who had been admitted to the West End Hospital on Jan. 13th, 1912, suffering from chronic nuclear (labio-glosso-laryngeal) paralysis of seven months' duration. Beyond the ordinary ailments of childhood he had never had any serious illness until last summer. He had never had diphtheria, scarlet fever, or enteric fever, and syphilis was denied. The present illness had commenced early in July last, with stiffness in the muscles of the neck, weakness in the movements of the tongue, and articulatory difficulties, followed late in September by impairment of deglutition and constant drooling of saliva. About the same time he had complained of colicky pains in the abdomen, which after a short period of a few days had disappeared. The other symptoms had, however, been steadily, if not rapidly, progressive, and he was only able to swallow liquid food; and that with difficulty. He was very emotional, complained of headache, chiefly occipital, and his facies reflected a condition of suffering and anxiety. There were marked weakness and wasting of his facial muscles, with an appearance of exophthalmos but without any palpable thyroid enlargement, tremor, or tachycardia. His pupils were unequal, the left greater than the right, but both reacted to light and to accommodation. The optic discs were normal. His tongue could not be protruded beyond the dental arch, was wrinkled and atrophied, and sometimes exhibited fibrillary tremors. His speech had a distinctly nasal intonation and was almost unintelligible. The palate was motionless on phonation. A decided blue line could be traced along the gums, but he had no wrist-drop or other signs of plumbism. His mouth was usually open, he was unable to whistle or blow, and there was a good deal of saliva dribbling. The small muscles of his hand showed definite signs of wasting, the atrophy being particularly seen in the right thenar and hypothenar eminences. His gait was practically normal and there was no sign of spasticity in his limbs. No Rombergism was present. The plantar reflexes were flexor on both sides. The supinator reflexes were brisk and the knee-jerks increased. A definite jaw-jerk could be elicited. The sphincters showed no loss of control. Dr. T. Braxton Hicks had reported that the Wassermann reaction of the blood and cerebro-spinal fluid was negative. The cerebro-spinal fluid showed 206 lymphocytes to the cubic millimetre. The urine contained a large quantity of urates and gave a marked reaction for indican. Its specific gravity was 1036. There was no albumin or sugar. The centrifuged deposit showed a small number of leucocytes and one or two granular casts.

Mr. W. G. HOWARTH and Mr. E. M. CORNER showed a case of Dysphagia in a child. In June, 1908, the child, aged 4, was playing in the street when a neighbour noticed her trying to vomit. She was taken to Guy's Hospital and a week later was admitted for "stomatitis" accompanied by some ulceration. She was thought to have swallowed some corrosive substance. She was admitted to St. Thomas's Hospital two months later, in August, 1908, with a history of dysphagia since June. Under full anæsthesia and with an œsophagoscope bougies could not be passed further than a point 8 inches from the teeth. With X rays it was seen that bismuth stopped at the level of the third rib and began to trickle in drops down the œsophagus. Gastrostomy was performed by Mr. Corner in August, 1908. The child went to an infirmary in November, 1908. After a while the "stricture" relaxed and a bougie passed. The stricture was dilated and the gastrostomy wound allowed to close. When exhibited the child could eat ordinary food. Examination of the œsophagus showed that at a point just below the cricoid, 19 cm. from the teeth, several small whitish patches

[1] THE LANCET, Dec. 25th, 1908, p. 1877.

were present in its wall. These did not appear to form a ring and caused no projection into the lumen of the œsophagus. There was no narrowing of the lumen, and the mucous membrane in the rest of the œsophagus appeared perfectly normal. It seemed, therefore, that the impassable "stricture" of September, 1908, had disappeared (1912), and it was suggested that the cure of the patient was due to the splitting of the stricture by dilation in a growing subject, the growing epithelium grafting the "splits" which showed as discontinuous small white patches.

Mr. A. E. BARKER showed a case of Plexiform Neuroma. It occurred in a boy, aged 14, and had apparently been present for several years and was quite visible in a photograph taken at the age of 4. Its distribution was roughly that of the facial nerve. A piece, of the size of a walnut, had been excised in order to modify the severity of a marked ptosis which was present. Microscopically at first medullated nerve fibres had been seen, but subsequent sections of the same piece failed to show them.

EDINBURGH MEDICO-CHIRURGICAL SOCIETY.

Postponed Discussion on Vaccine Therapy.—Trauma as a Factor in Disease.

A MEETING of this society was held on Jan. 17th, Mr. J. M. COTTERILL, the President, being in the chair.

In the discussion on Vaccine Therapy, adjourned from the meeting held on Nov. 29th,[1] Dr. G. LOVELL GULLAND said that one must endeavour to eliminate auto-suggestion. He had had most experience with the injection of tuberculin, which was very satisfactory in the treatment of glands. But if they were in the stage of breaking down, or if there was much periadenitis present, then tuberculin treatment was not suitable and surgical interference was necessary. Where there were masses of glands in the neck without much periadenitis, but the patient was losing weight and in poor health, vast improvement had resulted from the use of tuberculin as the sole means of treatment. He commenced treatment always with a dose not large enough to give a reaction, but he continued these injections for a long time. In pulmonary cases his practice was not to use tuberculin when the case was going on well. It was unwise to employ tuberculin in febrile cases, and he had found that the smallest dose did harm. He had found tuberculin most useful in what might be termed "stuck cases," or those in which improvement became arrested, and also in those very chronic cases where the condition of the lungs was largely fibroid often surprisingly good results followed. In tuberculosis of the kidney and bladder he had found it useful. He had steadily used tuberculin T.R. because he had found that it gave good results. The constant use of one preparation alone allowed one to know its potentiality perfectly. One ought always to commence with very small doses so as never to produce a rise of temperature. He rarely employed a larger dose than 1/2000 mg. Exceptional care was necessary in children, for tuberculin was much more active in them. He was quite convinced that tuberculin given by the mouth gave good results if administered in the early morning on an empty stomach and well away from feeding time. In septicæmia, especially puerperal, his experience with vaccines had been most disappointing; he had had much better success with antistreptococcus serum. He even thought vaccines definitely harmful in such cases. There was rarely time to prepare an autogenous vaccine. He discussed vaccine treatment also in ulcerative endocarditis, where he had not found it successful, and in gonococcal infection, where very varying results were obtained.—Dr. THEODORE SHENNAN had observed a great number of cases of mixed infections in which the B. proteus had been found. Was this a pathogenic organism or did it merely assist the action of other organisms? He had been giving a vaccine of this organism along with others. Most encouraging results had been obtained with the micrococcus catarrhalis, especially when in relation with pneumococci; it seemed not only to clear off the disease but to ward the patient against succeeding catarrhs.—Dr. I. STRUTHERS STEWART alluded to the relief of pain which the injection of streptococcic vaccine often produced, and to the fact that old sinuses frequently healed after a few inoculations. Bronchitis was often due to streptococcus infection, and he had found vaccine injections most satisfactory in its treatment. There was an increase in the amount of sputum for some days subsequently, and this was followed by a diminution. A secondary increase in the amount of sputum was an indication for another inoculation. He also discussed the results of vaccine therapy in acute tonsillitis, pneumonia, and cystitis, from his own experience.—Dr. L. C. PEEL RITCHIE said that there might be a reaction against the employment of vaccine therapy because of the many disappointments, but he thought that it should be the routine treatment in all cases of micro-organismal disease. He thought, however, that there was a chaos as regards dosage and that the enumeration method was at best merely a makeshift. A uniform standard could be obtained by weighing the solid organisms. In his experience gonorrhœal urethritis was little benefited by inoculation, while the arthritis was greatly benefited.—Dr. R. CRANSTON LOW said that in the Dermatological Department of the Royal Infirmary they used stock vaccines in staphylococcic infections, and only where these produced no effect did they employ autogenous vaccines. They never made use of the opsonic index. In furunculosis results were good. If a patient had several boils these nearly always got worse after an injection, probably because the patient was getting a sufficiency of his own vaccines. He found that greatly smaller doses were quite as beneficial as the large ones formerly employed. In sycosis one must give at least 20 injections to obtain good results. Acne was not related to staphylococcal invasion, and therefore a mixed vaccine was required. Of the tuberculous cases the majority were lupus cases, and he could not record a single cure with T.R. in 1000 mg. dose given once in two weeks; merely a diminution in the amount of infiltration took place. A bacillary emulsion gave no better results. Dr. Low said that one should not rely on vaccine treatment alone and that the treatment should be prolonged.—Dr. W. E. CARNEGIE DICKSON said that in estimating the dosage one had to consider the virulence of the strain and so to select a certain strain for each case. As regarded B. coli infection in children, some cases did well with vaccines while others were really harmed. It was most necessary to get the vaccine from a reliable source; he knew of two cases where generalised disease had been produced by the inoculation of non-sterile vaccines—e.g., a case of pyæmia caused by Coley's fluid.—Dr. C. W. D. WILKIE said that in cases of peritonitis already developed vaccines produced no improvement and, indeed, would only lower the resistance of the patient. In such cases serum therapy was more indicated than vaccine therapy.—After Dr. DINGWALL FORDYCE and Mr. WILLIAM STUART had spoken Dr. JAMES RITCHIE replied, and said that it seemed generally agreed that a case had been made out for the further use of vaccines in therapeutics, and that the only practicable method of judging of their efficacy was the clinical one. He emphasised the unsatisfactory character of the methods of standardisation in use, in that none of them took account of the individual potency of the strain of an organism used for the preparation of the vaccines. He again laid stress on the empiricism of treating diseases of unknown origin by means of vaccines.

Dr. ALEXANDER JAMES read a paper on Trauma as a Factor in Disease. He said that when an ordinary bar magnet received a heavy blow from a hammer its magnetism could be adversely affected as a result of the change produced in its molecular condition. According to the violence of the blow the demagnetisation would vary in completeness, and as a consequence there would be variation in the power of its recovery. In the same way, when a living tissue was subjected to a concussion its vitality could be diminished or lost temporarily or permanently. This molecular change might be induced by other traumas besides concussion. Thus, chemical shock, as from exposure to noxious gases, electricity, extremes of heat or cold, or psychical shock, might all be met with. The most far-reaching effects were produced, however, when the nervous tissues were the seat of injury. Thus, concussion of a muscle could impair the power of that muscle temporarily or permanently, while concussion of the brain or cord not only impaired or abolished function at the affected part much more easily because the tissue was more delicate, but because the brain and cord were the governing and trophic radiating tissues it could impair and abolish

[1] THE LANCET, Dec. 9th, 1911, p. 1625.

function in every other part of the body. Anything which disturbed function in any part of the nervous system might have far-reaching effects. Thus a condition of onychia was produced in the thumb, index and middle fingers, of a girl, aged 19, as a result of nerve disturbance. At the beginning of the disease the fingers felt cold and numb with pain which extended up the arm and which was increased on movement. The disease had persisted for seven years. Investigation of the cause showed that as a result of several operations for bone disease in the neighbourhood of the elbow joint there was extensive cicatrisation which had induced nerve kinking and irritation. On cutting down the median nerve was found in an abnormal situation and bound down to the internal aspect of the elbow-joint and fixed in a mass of cicatricial tissue. The nerve was freed, with the result that nine weeks later complete recovery had taken place. He reported also a case of left-sided facial hemiatrophy following on a slight wound of the cheek; a well-marked case of Raynaud's disease consequent on the passage of a Mauser bullet through the metacarpo-phalangeal joint of the middle finger of the left hand; and one in which wasting of the left leg and thigh, with extreme weakness, resulted from a slight injury to the left tarsus by the hoof of a pony. Complete recovery ensued in the second case on amputation of the affected part and freeing the nerves from their inclusion in cicatricial tissue, and in the third case on amputation of the foot. Dr. James next drew attention to diseased conditions set up by irritation of nerve centres. A miner, aged 35, complained of stiffness in the back and weakness, with the development of swelling under the skin of the trunk, subsequent to an injury on the back. His voluntary power, especially in the right arm, was impaired, and the plantar, abdominal, and epigastric reflexes were absent, and numerous lipomata had formed on his trunk. He died about a year subsequently, after the muscles of the legs had become wasted and paralysed. The brain shock might be psychical, not mechanical, as happened to a station-master who, in endeavouring to prevent a collision, suffered from great nervous shock, and a month later developed paralysis agitans. Fright in being prepared for operation and from other causes had caused death. Every physician of experience recognised the powerful influence of mental conditions on organic functions and disease. Of 27 cases of locomotor ataxia, 9 gave a history of accident, and of these 2 seemed to have some effect on the disease. Of 40 cases of lateral and disseminated sclerosis, 11 gave a history of accident, and 6 of these might have had a causal relationship to the disease. Of progressive muscular atrophy Dr. James had 13 cases, in 3 of which accidents had occurred, but in only 2 was a relationship possible. Of 12 cases of paralysis agitans, in 2 there was a history of what might be called accident; in one case a male patient had had the ring finger of his right hand amputated on account of ascending septic poisoning 26 years previously. The right hand had been rather shaky ever since, but it was only a year ago since it became so troublesome as to interfere with his work and to extend to his left arm. In these and similar ways trauma might be a cause of disease and impaired health. There was no doubt, however, that trauma might appear to be this and yet not be so. It might be simply a factor varying indefinitely in potency in bringing to light a previously existing disease. It was the doctor's duty to find out as accurately as he could what the accident was and what had been its effects on the individual. To enable the doctor to do his duty he must ascertain the precise nature and degree of the injury, and he must know what the effects on living tissues of all the different forms of injury could possibly be. He must further know the patient's heredity, constitution, habits, circumstances, and previous health. He must carefully investigate the symptoms and judge as to how what is merely subjective tallies with what is objective. Time would help him greatly. A study of cases showed that if hysteria and neurasthenia were eliminated a distinct injury did not often go on for very long without causing objective signs of disease. In all cases the doctor must take notes of the patient's mental attitude. In these days an accident is often simply a commercial asset to be negotiated with to the last shilling, and the average man in his anxiety to negotiate to the best advantage might by thinking too much on his symptoms do himself infinitely more harm than the accident itself could ever have done. It had been argued that medical inspection of workmen should become general; for this something might be said, but it must be remembered that men affected with chronic disease might still be excellent workmen, and, moreover, that as a diseased condition might easily be missed, an unsound man might easily get the imprimatur of soundness. In compensation work Dr. James's own idea was that it would be best if the medical men concerned could meet by themselves and come to a conclusion which could be put before the judge.

ROYAL ACADEMY OF MEDICINE IN IRELAND.

SECTION OF OBSTETRICS.

Chorion Epithelioma with Secondary Deposits.—Myoma undergoing Sarcomatous Degeneration.—Expulsion of a Papyraceous Fœtus before a Living Child.

A MEETING of this section was held on Jan. 5th, Dr. A. J. HORNE, the President, being in the chair.

Dr. H. JELLETT recorded a case of Chorion Epithelioma with Secondary Deposits. The patient, aged 39, was admitted to the Rotunda Hospital on Sept. 3rd last. She had been married for 12 years, and had had seven children and one abortion. She believed her last pregnancy to have terminated in June, 1910, but on questioning her she said that she had not menstruated between January and May, 1911, and that in May she had had severe hæmorrhage, which had since been constant. On examination the following day the uterus was found normal in position and enlarged to size of two months' pregnancy. On the walls of the vagina were three small swellings, purplish in colour, and resembling small hæmatomata or thrombosed veins. A diagnosis of possible pregnancy was made, and one of the swellings was removed for examination. Dr. R. J. Rowlette reported that they were cystic masses filled with blood clot. The surface epithelium was regular, and the deeper tissues were infiltrated by masses of very irregular flat cells with large blood spaces. He diagnosed chorion epithelioma or mixed-celled sarcoma. On Sept. 11th the uterine cavity was explored and pieces were curetted for examination. These were found to be of a similar character to the vaginal swellings. The next day the patient had a cough with expectoration containing a considerable quantity of blood. A diagnosis of chorion epithelioma was then made. On the 14th the uterus and ovaries were removed as extensively as possible. The uterus was enlarged to the size of a small fœtal head, with a very distinct tumour on its left side. The patient stood the operation well, but her lungs rapidly got worse, and she died two days later. At the necropsy the lungs were found to be studded all over with small tumours, corresponding in appearance and characteristics with the uterine tumour and the vaginal metastases. The uterine tumour and all the metastases consisted of blood and infiltrating masses of cells derived from Langhans's layer. There were no syncytial masses and no pieces of chorionic villi. A portion of the tumour was submitted for diagnosis to Professor Pick, of Berlin, who confirmed Dr. Rowlette's diagnosis of chorion epithelioma derived practically entirely from Langhans's layer.—Dr ROWLETTE said the case was interesting from the pathological point of view, being not quite typical. The tumour seemed to consist of one set of cells—i.e., Langhans's layer—and not of other parts of the ovum, as generally occurred. In this case no villi were to be found.—Dr. NINIAN FALKINER said that according to his information this disease was identified about 1888 by Dr. Sangar, of the United States. Out of a record of 127 cases the mortality was 59 per cent.—Dr. GIBBON FITZGIBBON referred to a case shown in February, 1904, where the symptoms of the disease developed after the removal of a hydatidiform mole. The uterus was removed, and the condition diagnosed as chorion epithelioma. There were no metastases, and the patient was quite well 12 months afterwards.—Dr. JELLETT replied.

Sir WILLIAM SMYLY related a case of Myoma undergoing Sarcomatous Degeneration. He said that his views with regard to the treatment of myomatous tumours of the uterus had undergone a gradual change. He operated more frequently and resorted to conservative measures more readily than he used

to do. Almost every case that required treatment he considered was best treated by operation. Myomectomy, which, owing to improved methods of suturing and the introduction of rubber gloves, was scarcely more dangerous now than hysterectomy, should be generally adopted in women within the child-bearing period of life. He reported a case in which a myoma had been diagnosed 20 years previously and had caused little inconvenience until about Christmas, 1910. In April operation was performed. The primary result was good, but after a few weeks the disease again began to show its presence, and the patient died in about four months. The lesson that he drew from this case was the importance of early interference.—Professor ALFRED J. SMITH said to a certain extent he would recommend operative treatment in fibromyoma of the uterus, but he would treat each case on its merits. If a patient had been recently married an interval of one or two years would be a safe margin to allow her to run without taking any risk, provided the tumour was not increasing or causing trouble.—Dr. JELLETT thought, speaking generally, if a married woman within the child-bearing period had a myoma of the uterus which would not prevent pregnancy going to the full term it could be removed by myomectomy, and the operation was indicated. If it was found at the time of the operation that the tumour could not be removed by myomectomy it was most improbable that pregnancy would occur and continue to full term. He advised early operation in all cases.—Dr. B. A. H. SOLOMONS said that during his term at the Rotunda Hospital he saw a good number of cases of women who became pregnant after myomectomy.—In reply, Sir WILLIAM SMYLY said that the discussion proved that they were not agreed on the question when to operate. He recognised the importance of preserving the power to bear children, and he believed that myomectomy would rather increase fertility.

Sir WILLIAM SMYLY read a paper on a case in which a Papyraceous Fœtus was Expelled before a Living Child. In January, 1911, the patient conceived, and though she twice threatened to abort she went to the end of the seventh month. She then expelled a papyraceous fœtus, but the placenta did not come away. Next day it was decided to divide the funis as high up in the cervix as possible in the hope of saving the second child. A septic fever ensuing she was removed to a nursing home, and the second child delivered by bipolar version. The placenta and membranes of this child, which died during the extraction, were expelled in about half-an-hour, and appeared to be fresh and normal, but as there was no sign of the other placenta following the hand was introduced, and it was found firmly adherent in the neighbourhood of the right cornu of the uterus. The patient made a good recovery.—Professor SMITH considered the cause of the fœtus becoming papyraceous was the insertion of placenta in the cornu of the uterus. The practical point appeared to him to be whether interruption was justified or not. So far as could be gathered the placenta of the papyraceous fœtus was not the cause of the trouble.—Sir WILLIAM SMYLY, in reply, said that he attached more importance to the pathological condition of the placental site than to its anatomical position. The fact that the papyraceous fœtus came first was the important feature of the case. The septic fever no doubt originated in the cord which was lying in the vagina for 24 hours before it was divided.

BATH CLINICAL SOCIETY.—A meeting of this society was held on Jan. 5th, Dr. Preston King, the President, being in the chair.—The following cases and specimens were shown:—Dr. R. Waterhouse: A case of (probably arsenical) Pigmentation of the Trunk, Neck, and Shins in a woman aged 27. She had been an epileptic for 11 years and was very simple. For ten years she had taken bromides as an out-patient, and had 40, 50, or more fits every year. Eleven months ago she commenced to take drachm doses of syrupus ferri phosphatis co. three times a day in addition, and three weeks later 4 minims of Fowler's solution were added to the mixture. From this time to the present no fit occurred, but a week ago, on account of a complaint of abdominal pain and irritability of the bladder, an examination of the abdomen was made and pigmentation noticed. There was no keratosis of the palms or soles. The deep reflexes were markedly exaggerated and there was a tendency to ankle clonus, but the plantar reflexes were flexor in type. The friends had only noticed the darkening of the skin within the last year.—Dr. V. Wiley: A man, a French polisher by trade, suffering for the past 18 months from Occupation Neurosis. He complained of stiffness and numbness of the right hand and was unable, with his eyes closed, to distinguish the shape or name of objects placed in that hand—round objects he called square, &c. There was no wasting of muscles or trophic change; radial reflexes were lost on both sides.—Mr. H. G. Terry: Four Inches of Stem of an Ordinary Thermometer, made into the shape of a bi-coudé catheter. It was removed from the bladder of an old man who used it for sounding for stone. One day the portion shown broke off in the bladder whilst sounding, and it was not until three weeks after that, owing to severe pain, frequency of micturition, and hæmaturia, he applied for relief. It was removed by a suprapubic incision, being found surrounded by a large blood-clot.—Mr. A. de V. Blathwayt showed the lower half of the Spinal Column of a woman aged 29, who had drowned herself. Five years previously she fell out of a window and sustained a comminuted fracture of the twelfth dorsal and first lumbar vertebræ with some dislocation. There was complete paralysis below the lesion. Laminectomy was performed. After two years she was able to resume her occupation as servant, her only disability being prolapse of the uterus, which was improved by operation 12 months before death.—The President read notes of two cases of Treatment by Vaccines. The first case was that of a man aged 69, who had suffered for many years from a "skin disease." When first seen early in 1910 his whole body, including the arms, legs, and head, was a mass of ulcers in various stages of suppuration and healing, a few being mere scars and many covered with scabs. A pure culture of staphylococcus albus was obtained from the pus, and from this a vaccine was made and a 50,000,000 dose injected every four days; after three injections the dose was increased to 100,000,000, and after six injections there was marked improvement, and after the tenth injection the skin was quite clean and free from ulcers; three more injections were given. There was slight reaction after the first and less after the second, and none after the subsequent injections. Seen six months later he was still quite well. The second case was that of the President himself. For years he had suffered from bronchial catarrh and bronchitis, having had one or more yearly attacks which had laid him up for two or three weeks at a time. During an acute attack in October, 1910, a vaccine was prepared from the growth obtained from the sputum. The treatment was begun while the patient was still confined to bed with an evening temperature of 100° F. There was definite reaction, the temperature rising one degree the first night and less afterwards till eight or ten injections had been given. A 50,000,000 dose was used, and was given every fourth day and continued up to Christmas. The acute attack was cut short from the usual two or three weeks to six days, and since then there had been no further acute attacks down to January, 1911. During the last two winters he had suffered from slight colds which had aborted after a few days.

CHELSEA CLINICAL SOCIETY.—A meeting of this society was held on Jan. 16th, Dr. J. Mansell Moullin, the President, being in the chair.—Mr. J. D. Mortimer read a paper on the Need of Preparation for Anæsthesia. He pointed out that the choice of anæsthetic and of the position, the course of anæsthesia, and the after-condition were influenced, to an extent not always realised, by the presence of various general and local disorders—e.g., anæmia, obesity, oral sepsis—and that means should be taken to remedy them whenever there were time and opportunity. The value of preliminary injections of omnopon or morphine and atropine was mentioned in diminishing emotional and reflex disturbance, thus avoiding incidental risks and "saving" the anæsthetic. Although without personal experience of "delayed chloroform poisoning," he thought it well to test the urine for acetonuria in children and to regulate the diet and give glucose if found necessary. The difficulties and dangers attendant on a loaded stomach were described, and an emetic or lavage was recommended when possible in emergencies. Clearance of the bowels should be begun at least 36 hours before operation, thus giving time for it to be done effectually and avoiding disturbance during the last few hours preceding operation. If excessive it tended to post-operative nausea, atony, and exhaustion. Usually the last meal (a light one) should have been taken at least six

hours before anæsthesia, but simple drinks in moderation (not milk) might be allowed to within an hour, their refusal causing sometimes much discomfort. Frank and judicious explanation should be made to children, who were often alarmed by the presence and proceedings of the anæsthetist being entirely unexpected. — Mr. A. F. Penny read a paper on Acute Inflammation of the Middle Ear. In the early stages there was always some deafness. In these early stages harm was often done by amateur treatment, syringing, &c, fresh focuses of infection being superadded. Early treatment, however, was essential on account of the danger to life of chronic suppuration, the intense pain of the acute attack, and the liability to cause permanent deafness. When it became chronic a radical mastoid operation was often desirable. All cases except those of tubercular origin commenced in the naso-pharynx. Scarlet fever was a fruitful cause, as was also influenza, the latter being especially liable to be followed by meningeal complications. Chronic nasal obstruction was also a very important factor. When pus had formed the membrana tympani should be perforated to enable it to escape. In the earlier stages it was important that the Eustachian tube should be kept patent. If the mastoid antrum became infected it should at once be opened. When this extended and the condition known as Bezold's mastoiditis took place an extensive removal of the bone was often necessary, on account chiefly of the danger of extension of the infection to the lateral sinus and consequent pyæmia. Acute otitis might also involve the labyrinth. If, however, there was no spontaneous nystagmus except in extreme positions of the eyes, nor by rapid head movements, absence of the "fistula" symptom and presence of the caloric reaction, any suppurative infection of the labyrinth, as well as any severe disease of the vestibular apparatus, might be excluded. Such infection from the middle to the internal ear, when it did occur, usually travelled either through the external semicircular canal, through the promontory, or through the fenestra ovalis. The various operations on the labyrinth and cochlea were described in detail.

NORTHUMBERLAND AND DURHAM MEDICAL SOCIETY.—A meeting of this society was held in the Royal Victoria Infirmary, Newcastle-on-Tyne, on Jan. 18th, Mr. A. Angus Martin, the President, being in the chair.—Dr. Robert Hutchison opened a discussion on Rickets. He reviewed very shortly what little there is of the pathology, and the clinical types were briefly dealt with as being known to all. To the etiology and treatment he referred more particularly. He dismissed in a word such exploded theories of etiology as congenital syphilis, dilatation of the stomach, microbic infection, intestinal intoxication, absence or defect of internal secretion, and trophic or nervous influences. He considered more fully the lime and acid theories and ultimately dismissed them also. Finally, while acknowledging the undoubted though accessory importance of the general hygienic conditions, he ascribed the disease to erroneous feeding, *the only cause*. For confirmation of this view he turned to clinical experience and the assistance to be gained from the effects of treatment. Little doubt could be entertained that deficiency of fat was the chief factor, but he did not negative the possibility of deficiency of protein and phosphorus acting as an adjunct to it. In reference to treatment, this was mainly dietetic. By way of prophylaxis, the chief faults to be avoided were (1) too prolonged breast-feeding, and (2) in bottle-fed children, too dilute a mixture being used. Increase in the amount of fat administered was the most important measure to be adopted—e.g., cod liver oil, or cotton oil, which was as good, supplemented by phosphorus and iron. He considered diarrhœa no bar to the administration of fat, as was formerly thought. An animated discussion followed, to which Dr. Hutchison replied.—The President expressed the appreciation of all present of the address, which had been eloquent and instructive, and, considering the familiar nature of the disease, refreshing.

NOTTINGHAM MEDICO-CHIRURGICAL SOCIETY.—A meeting of this society was held on Jan. 10th, Dr. F. H. Jacob, the President, being in the chair.—Professor G. Sims Woodhead delivered an address on the Laboratory and Clinical Work. He confined his remarks chiefly to the recent work on body temperature and electro-cardiograms. He pointed out the great advantage to clinical medicine in having a continuous temperature chart for the whole 24 hours in such diseases as tuberculosis. It was the late Dr. Gamgee who initiated the taking of continuous temperature records by means of thermo-electrical methods. Professor Woodhead continued his work chiefly in connexion with investigating the effects of alcohol on the body temperature. The initial work was enormous, and it took eight or nine months before he obtained his first satisfactory record. After that, however, the work became comparatively easy. Professor Woodhead then explained in detail the photographic temperature recorder of Dr. Gamgee and also the "thread recorder." By means of arrangements with the National Telephone Company a continuous temperature of a patient in Addenbrooke's Hospital, Cambridge, was automatically recorded in the University laboratory. The lecturer then stated that small doses of alcohol raised the surface temperature but lowered the rectal temperature. Food lowered the surface temperature, but if accompanied by warm fluid the temperature was raised. Hot fluids immediately raised the rectal temperature, but only for a short while. It was possible in the future that all hospital patients could have continuous temperature records taken, and this should be of great value in enabling them thoroughly to study the progress of disease. Professor Woodhead explained the principles of taking an electro-cardiogram, and the details of the machine used. Lantern slides were shown to illustrate his remarks. He said that electro-cardiograms were almost as characteristic of individuals as were finger-prints, so much so that any variation in an individual's electro-cardiogram meant that there was some lesion of the heart. In Addenbrooke's Hospital a record was now taken of every case of heart disease, and it was hoped that in time these might, by comparison with future post-mortem examinations, lead to much usefulness.—Dr. A. Fulton, in proposing a vote of thanks, wondered whether the taking of continuous temperature records and cardiograms would be part of the duties of an Insurance doctor, and drew a vivid picture of the tired general practitioner being awakened in the night by the sudden flash of the galvanometer mirror on the ceiling telling him that a patient a mile away had had a sudden rise of temperature.—Dr. P. Boobbyer seconded the vote of thanks.

THE NEW LONDON DERMATOLOGICAL SOCIETY.—A meeting of this society was held on Jan. 11th, Dr. P. S. Abraham, the President, being in the chair.—Dr. David Walsh showed: 1. A young woman with Recurrent Rosacea and Cardiac Disease, to illustrate further his views that chronic dermatoses were prone to be kept up by cardiac disorders, apart from circulatory disturbances. 2. A case of Alopecia of the band form in a woman, associated with seborrhœa of the scalp. A curious feature of this case was the presence of a sclerosed thyroidea ima artery.—Dr. G. Norman Meachen showed: 1. A man, aged 40, with Epithelioma supervening upon Lupus Vulgaris that had been treated by X rays. A considerable amount of destruction of the tissues of the upper lip and nose had occurred, the patient's life being rendered intolerable by the inability to retain saliva, &c. Radium treatment was now contemplated in view of the fact that a plastic surgical operation did not appear promising. 2. A case of Psoriasis with Chronic Facial Œdema in a young woman aged 30, the areas of œdema below the eyes and the thickening of the tissues of the upper lip having appeared almost coincidently with the cutaneous eruption seven years ago. Some of her symptoms suggested a myxœdematous condition, but no improvement had occurred under the administration of thyroid extract.—Dr. Tom Robinson showed a man with a Lichenoid Eruption, chiefly upon the legs and arms. The papules were mostly of the follicular type and the irritation had been severe.

BRADFORD MEDICO-CHIRURGICAL SOCIETY AND BRADFORD DIVISION OF THE BRITISH MEDICAL ASSOCIATION.—A joint meeting was held on Jan. 16th.—The following specimens and cases were shown:—Professor H. J. Campbell: A case of Sprue.—Dr. C. F. M. Althorp: (1) A patient after operation for Cancer of the Rectum; and (2) specimens from a case of Acromegaly.—Dr. R. Honeyburne: (1) Microscopical specimens from Dr. Althorp's case of Acromegaly; and (2) microscopical specimens from a case of Acute Pancreatitis.—Mr. Basil Hughes: (1) Two cases of Cellulitis of the Palm treated by Autogenous

Vaccines; (2) cases of Injury to the Elbow; (3) a case of Gonococcal Arthritis of the Wrist-Joint treated by Vaccine; (4) two cases of traumatic Myositis Ossificans; and (5) a case of Sycosis treated by vaccines.—Mr. J. Basil Hall: (1) Lantern slides of Surgical Cases; (2) Osteo-sclerosis of the Tibia from a case of Gangrene of the Leg; (3) Carcinoma of the Rectum; (4) Endothelioma of the Head of the Tibia; (5) Cystic Tumours in connexion with (*a*) Appendix, and (*b*) Rectus Abdominis; (6) Hypernephroma; and (7) Carcinoma of the Body of the Uterus.—Dr. T. Jason Wood: (1) A case after operation for Ectopia Vesicæ; (2) a case after Suture of the Patella for Fracture; (3) specimen of Cancer of Trachea and Œsophagus; (4) Epithelioma of Skin over the Elbow-joint; and (5) Advanced Carcinoma Mammæ.—Dr. A. F. Martin: (1) Specimen of a Large Nasal Polypus; and (2) specimen of an Early Ovum.—Mr. F. W. Goyder: (1) Lantern slides of Congenital Dislocation of the Hip before and after Reduction by the Lorenz Method; (2) lantern slides of cases of Hare-lip and Cleft Palate; (3) photograph of a case of Epispadias; and (4) Carcinoma of Colon removed from a woman aged 32 years.—Mr. P. McEwan: Uterine Fibroid.

Reviews and Notices of Books.

A Manual of Bacteriology, Clinical and Applied. By R. TANNER HEWLETT, M.D. Lond., F.R.C.P. Lond., D.P.H., Professor of Bacteriology in the University of London; Director of the Public Health Department, King's College, London; Director of Pathology, Seamen's Hospital, Greenwich; Lecturer on Bacteriology, London School of Tropical Medicine. Fourth edition. London: J. and A. Churchill. 1911. Pp. 703. Price 10*s.* 6*d.* net.

Professor Hewlett's work has long been a favourite text-book of bacteriology amongst medical students and practitioners. That it has lost none of its popularity is indicated by the appearance of a new edition after so short a period as three years. As we have noticed each successive edition at some length it is unnecessary now to enter into any detailed criticism, for in appearance, arrangement, and treatment of the subject the book is practically unchanged, and it still possesses those valuable characteristics—due to the fact that the author, though a bacteriologist, does not forget that he is also a physician—which make it so suitable for the medical man.

The fourth edition is enlarged by about 75 pages—a very moderate addition considering the amount of new work to be incorporated. It has also been largely rewritten and added to. The plates, always an important feature of the work, have been slightly increased in number and in several cases improved. This is the case with the representations of S. aureus in pus, the meningococcus, the B. diphtheriæ, the B. typhosus, and the treponema pallidum. Professor Hewlett has carried on the work of Dr. Allan Macfadyen on endotoxins, and some of the most important additions in this volume concern the properties, method of extraction, and therapeutic use of these puzzling and little understood bodies. For prophylactic use a vaccine consisting of diphtheria endotoxin is said to possess all the advantages and none of the dangers of antitoxic serum. A new section on anaphylaxis serves chiefly to show how scanty at the present time is our knowledge of this condition. The description of the tuberculins has been rewritten, and "bacillary emulsion" is now included. There is a fuller description than formerly of the mode of entrance into the body of the tubercle bacillus, and of its relationship with food; while among the clinical tests for tuberculosis Emery's method, based on the fixation of complement, is described at length, as are also the more modern methods for the demonstration of the bacillus in sputum.

Recent work on the leprosy bacillus finds a place, as does also Bordet's work on the bacillus of whooping-cough, and a description of the B. botulinus. Amongst the pathogenic blastomycetes there is an account of sporotrichosis and its organism, and of the organism of thrush, which was formerly grouped with the hyphomycetes. The section on the protozoa has been altered, and the various spirochætæ, together with the treponema pallidum, are treated in this group; there is also additional information on the trypanosoma gambiense. Infantile paralysis, typhus fever, and phlebotomus fever appear for the first time in this edition. The book concludes, as before, with the useful and practical section on disinfection, and on the bacteriology and bacteriological examination of water and milk. This section has been revised.

The book is well and clearly printed, and of good appearance. It will, no doubt, continue to be a favourite manual for students, practitioners, and medical officers of health.

Heart Sounds and Murmurs: their Causation and Recognition. By E. M. BROCKBANK, M.D. Vict., F.R.C.P. Lond., Senior Honorary Assistant Physician, Royal Infirmary, Manchester. London: H. K. Lewis. 1911. Pp. 56. Price 2*s.* 6*d.*

THIS volume sets out simply, clearly, and in convenient pocket-book form for clinical reference the elements of cardiac auscultation, and we believe that students will obtain much information by referring to the work during their attendance in the out-patient rooms and wards. The description of the various alterations that may occur in the sounds of the heart is so clear and accurate that, when a student hears a murmur or modification of the heart sounds, on referring to Dr. Brockbank's remarks he will without difficulty find the explanation thereof.

The theoretical considerations of the production of the heart sounds and the physical conditions required to produce murmurs or reduplication of the heart sounds are also well dealt with. In discussing the causation of the crescendo murmur heard over the apex of the heart and associated with mitral stenosis, Dr. Brockbank adopts the view that it is produced at an orifice which closes whilst a murmur is being produced at the orifice. He submits that the mitral valve, when stenosed, is often so diseased that it cannot close at all during ventricular systole, or only at a late phase of ventricular systole when a sufficient amount of force has been developed to bring together the stiffened edges of the valve. Whilst this force is gathering, blood regurgitates through the patent and diseased valve, producing a systolic murmur, to which a rising pitch character is imparted by the closing of the valve. The crescendo murmur, therefore, being early ventricular systolic or presphygmic in rhythm, occurs immediately before the carotid pulse. The view that the crescendo murmur of mitral stenosis is ventricular systolic and not auricular systolic is, we believe, gradually gaining ground, but it is not as yet generally adopted.

The remarks on cardiac hæmic murmurs are also worthy of attention. Dr. Brockbank doubts the suggestion that has been raised as to their causation—namely, that they are due to diminished viscosity of the blood. He points out that in chlorosis, in which these murmurs commonly occur, there is sometimes two or three times the normal volume of blood present, and this may lead to abnormal distension of cavities, and so to the easier production of fluid veins, especially at the semilunar valve orifices. Many theories have been put forward as to the origin of hæmic murmurs, but the one advanced by Dr. Brockbank brings the causation of such murmurs more into accord with the physics of organic murmurs.

We can recommend this volume as a useful addition to the student's library.

Allgemeine und Spezielle Pathologie des Zwerchfels. Von Privat-docent Dr. HANS EPPINGER in Wien. With 31 illustrations in the text. Wien und Leipzig: Alfred Holder. 1911. Pp. 266. Price 6.50 marks.

THIS is a special section of the supplement of Nothnagel's well-known Pathology and Treatment. It is probably the largest monograph that has ever been devoted to the diaphragm, and yet when the book is read it is seen that there is evidently much to be said about this important organ. The author has dealt in separate chapters with the anatomy, the histology, and the development of the diaphragm; then he has considered its physiology, first as a part of the respiratory apparatus, and secondly, as assisting the circulation; and finally, the action of the phrenic nerve has been studied. A careful account is then given of the various positions assumed by the diaphragm in inspiration and expiration, and the results of the examination of 106 men and of 70 women are given showing the highest point reached on both the right and the left side.

An account follows of the general pathology of the diaphragm. The special pathology also receives due attention, and nearly 70 pages are devoted to the subject of diaphragmatic hernia, of which many varieties are described. The prognosis and treatment of this condition are also considered. Various other affections of the diaphragm are dealt with, and the only other important lesion, subphrenic abscess, receives full treatment. The author divides the forms of this abscess into right and left anterior intraperitoneal abscess, and right and left posterior intraperitoneal abscess, and right and left extraperitoneal abscess. The diagnosis, prognosis, and treatment of this condition are discussed. A very useful table is supplied in which the results are given of a large number of cases classified according to the point of origin of the suppuration. The cases are further divided into those which were treated by operation and those which were not. Although there were in all more than 300 cases in these series the numbers are hardly large enough to give exact indications as to the prognosis in the several classes. The most fatal cases appear to be those arising from perforation of the duodenum, of which there were six in all; four of these were operated on and two were not, but all died. The numbers are clearly too small to justify the conclusion that a subdiaphragmatic abscess arising from such a cause must necessarily end fatally. The final section deals with the nervous affections of the diaphragm, such as paralysis and spasm. A bibliography containing some 4000 items—not the least valuable portion of a carefully written and complete work—is supplied.

The Blood and its Third Anatomical Element: Application of the Microzymian Theory of the Living Organisation to the Study of the Anatomical and Chemical Constitution of the Blood and to that of the Anatomical and Physiological Causes of the Phenomena of its Coagulation and of its other Spontaneous Changes. By A. BÉCHAMP, formerly Professor in the Medical Faculty of Montpelier (France). Translated from the French by MONTAGUE R. LEVERSON, M.D., of the Baltimore Medical School, and M.A. and Ph.D. of the University of Göttingen. Philadelphia: Boericke and Tafel. 1911. Pp. 438. Price, cloth, $1.50.

IN this translation of part of the work of Béchamp there are the translator's preface, a post scriptum, an author's preface of 84 pages, and a "Preliminary" before a chapter entitled "Introductory and Historical" is reached. The translator predicts that the nineteenth century will come to be known by the name of Béchamp, "as are the centuries of Copernicus, of Galileo, and of Newton by their several names." Indeed, the translator greets him as the Master (in distinct type), who was in his eighty-fifth year at the time of the publication of the work before us. We should add that M. Béchamp died in 1908. "A collection of molecular granulations Béchamp named microzymas," and these "*evolved* into *bacteria*." "The word microbe must be erased from the language of science," while the "Microbian Theory of Disease" was declared by the *Master* to be the "greatest scientific silliness of the age." This work is said to be the crown to Béchamp's work upon ferments, &c. M. Pasteur is accused of plagiarism who in 1872 attempted his "boldest plagiarism." The author asserts that the microzymian theory is to biology what the Lavoisierian theory of matter is to chemistry.

A few further quotations will show better than comment can the views of the author. "Normal air never contains morbid microzymas, what used to be called germs of disease and now microbes," and it is maintained that "*diseases are born of us and in us.*" In the chapter on the blood and its third anatomical element, the reader must remember that this third element has nothing to do with what are called platelets. It consists "of a microzyma enveloped in an atmosphere of a special albuminoid substance, insoluble in the sanguineous medium" (p. 215). The translator adds a note on p. 229, on the blood of chameleons, in which he makes the mistake of confusing these animals with camels as regards their blood corpuscles. The three anatomical elements of the blood "become vibrionious by individual evolution," which statement, the author remarks, "was a novelty for physiology and even for chemists." No doubt it was. "The fibrin of the blood is a false membrane containing microzymas, whereof the intermicrozymian gangue is a specialised albuminoid substance. ..... It is owing to its microzymas that fibrin liquefies starch of amidon. ..... The microzymas of fibrin in liquefied starch undergo vibrionian evolution notwithstanding the presence of creosote."

We have said enough to enable the reader to judge as to the author's views. We need hardly refer to what is called a "Postface," and it is scarcely worth while to point out such little shortcomings as "quarternaries," "literateurs," "Louget," "Miathe," "Milné-Edwards," "noither," "Captions of the following chapters." What is to be said of "extalytic contact" and of "gangue"? On p. 420 we find, "The world has yet to learn how much it owes to this remarkable genius [i.e., M. Béchamp]. The acknowledgment will be resisted by all those interests which fatten upon ignorance and trusting confidence of the people." In the words of the translator's ending to his own preface, "*Ainsi soit-il.*"

Experimental Pedagogy and the Psychology of the Child. By Dr. ED. CLAPARÈDE, Professor of Experimental Psychology at the University of Geneva. Translated by MARY LOUCH and HENRY HOLMAN. London: Edward Arnold. 1911. Pp. 332. Price 5*s.* net.

Dr. Claparède explains in his preface that this work is not to be considered as a manual of pædagogy but as a guide to the study of psychological science and to the psychology of the child. The work is somewhat alarming at first sight. Methods of education have changed so rapidly since the middle of the last century that, as in all great upheavals, excesses have arisen, and the views of the extremely modern "educationist" are not very unlike those so amusingly satirised by Mr. Calderon in "Downy V. Green," where he describes the educational system of Dr. MacGuffin, of Goober Valley, with his science of "Mindahlogy."

But though we have called Dr. Claparède's book alarming at first sight, it is only because it contains so many new terms; the matter of the book is really fairly simple, that is to say if such a complicated subject as education can ever be considered simple. After a historical sketch of the work done in the observation of the mental development of the

child, he states the problems to be considered. Methods of research are next described, and the two following chapters, which conclude the book, are devoted to mental development and intellectual fatigue. Dr. Claparède's definition of experimental pædagogy is this: "The knowledge of, or the inquiry into, the circumstances favourable to the development of the child, and the means of educating him towards a given end"; and, if we have gathered his meaning rightly, his position is set out on p. 204 as follows: "The child develops naturally by passing through a certain number of stages, which succeed each other in a constant order. Each stage corresponds to the development of a certain function or aptitude, and the play connected with each of these gives pleasure to the child. All objects susceptible of bringing into play this new-born function or aptitude naturally interest the child, captivate him and attract him, while those which do not correspond to the play of any existing aptitude leave him indifferent or are instinctively repugnant to him. The secret of pedagogy consists in making use of those natural aptitudes of the child, instead of reprimanding him because of those which he lacks—those with which he may not be endowed, or which he does not yet possess." In other words, education should not mean filling the scholar with facts which have little or no meaning for him, but rather the bringing out of the potentiality for knowledge that he possesses.

Dr. Claparède's work may be cordially recommended to all teachers who wish to obtain a general view of the ideals at which they should aim.

Pathological Technique: A Practical Manual for Workers in Pathological Histology and Bacteriology, including Directions for the Performance of Autopsies and for Clinical Diagnosis by Laboratory Methods. By FRANK BURR MALLORY, A.M., M.D., Associate Professor of Pathology, Harvard University Medical School; Pathologist to the Boston City Hospital; and JAMES HOMER WRIGHT, A.M., M.D., S.D., Director of the Pathological Laboratory of the Massachusetts General Hospital, Assistant Professor of Pathology, Harvard University Medical School. Fifth edition, revised and enlarged, with 162 Illustrations. London and Philadelphia: W. B. Saunders Company. 1911. Pp. 507. Price 13*s.* net.

THE appearance of a fifth edition may be regarded as sufficient evidence of the popularity and practical utility of any work. In general appearance this volume does not differ from its immediate predecessors, the arrangement of the subject matter under three main headings remaining unaltered. Nevertheless, the entire text has undergone a thorough revision—most obvious, perhaps, in the third section, to which nearly 40 pages of new matter have been added.

The first section, dealing with post-mortem examinations, is clearly written, and the instructions given are ample, though we should have welcomed a section on the art of removing various viscera through natural orifices—knowledge frequently demanded of the general practitioner, at least on this side of the Atlantic, where permission is granted only for what may be termed a "limited p.m." We hope that in a future edition this practical want will be supplied.

The second section, Bacteriological Methods, has at first sight undergone but little change, still there are changes and additions here also. Methods now obsolete, such as "roll cultures," have been eliminated, and alternative methods are described for the preparation of nutrient media, but we shall expect to find in the next edition that the authors will pin their faith to the exact methods of nitration and standardisation that are now matters of routine in the well-organised bacteriological laboratory. Rather more than 100 pages are devoted to the chief microscopical and cultural characters of the pathogenic bacteria, with brief accounts of their association with, and diagnosis in, pathological lesions, and their pathogenesis for laboratory animals. This section is, in the main, clear and accurate, although upon some minor points we should certainly join issue with the authors, as, for example, that the very brief original staining times in each of the solutions are alone given under Neisser's method (for B. diphtheriæ), adherence to which would undoubtedly result in complete failure in the majority of instances. The microphotographs are usually excellent, but some few, where the magnification to 2000 appears to have been attained by the enlargement of the negative and consequent loss of detail, are unfamiliar and therefore unconvincing. New matter in this section includes the antiformin methods for the detection and isolation of bacillus tuberculosis, and the bacteriological diagnosis of cholera according to McLaughlin's excellent directions. We note, however, as before, the absence of the agglutination and sedimentation methods in the diagnosis of infections due to bacillus mallei.

The new matter occurs largely in the third section, and comprises a concise summary of the recent work in the diagnosis of syphilis and the methods of preparing bacterial vaccines. The treponema pallidum is carefully described, together with various tried and proved staining methods, but culture methods are not even referred to. Complement fixation methods, both Noguchi's modification and Wassermann's original method, are well described, but with a distinct preference for the former. Perhaps the most useful pages in this section are those describing practical workaday methods for standardising the various reagents employed in these tests, such as antigen and hæmolysin. Other important additions are Alzheimer's ingenious method for the quantitative differential count of the cells in cerebro-spinal fluid; a differential table of entamœbæ and cultivation methods for amœbæ; and a description of the Negri bodies in rabies, this being accompanied by an excellent photograph.

By sound revision this volume fully maintains the high standard of the earlier editions, and not even the clinical pathologist who already possesses one of the earlier editions can afford to neglect the present one.

Die Palpablen Gebilde des Normalen Menschlichen Körpers und deren Methodische Palpation: nach eigenen Untersuchungen an der Leiche und am Lebenden. By Dr. TOBY COHN, Nervenarzt in Berlin. Part III.: *Neck and Head.* Berlin: S. Karger. 1911. Pp. 377-586. Price 8 marks.

THE third part of this work on the structural details of the body recognisable by touch deals in a most elaborate fashion with the head and neck, with the description of which more than 200 pages are occupied. The extraordinarily painstaking nature of the task will strike the reader at once as he turns over the pages of this section, and he may perhaps question the wisdom of the devotion to minutiæ that the author betrays. Where so many facts are aggregated, some indication of relative significance or insignificance would have been of service. From the nature of the subject there is to be found in this part a great deal of anthropological information on the shape and type of skull, on hair, eyes, ears, nose, and so on. The author mentions various departures from the normal in the case of the formation of the pinna, for instance, but if this is to be done at all, it might have been done more completely. More than one well-recognised degenerate ear is not referred to. The philtrum is mentioned, but there is no note of the interesting variations in its shape that may occur. As a whole, the section is a valuable contribution to the important and not sufficiently taught subject of surface anatomy. The time is well spent that is devoted to the study of the landmarks of the human

frame as they reveal themselves to the educated finger. With Dr. Cohn's admirable text-book as a guide the student will acquire an immense amount of useful information which will stand him in good stead.

LIBRARY TABLE.

Outlines of Early Development. By R. W. JOHNSTONE, M.A., M.D. Edin., F.R.C.S. Edin., M.R.C.P. Edin. With a preface by Sir J. HALLIDAY CROOM. Edinburgh: John Currie. 1911. Pp. 23. Price 1*s.* 6*d.* net.—This sketch of the early life-history of the ovum has been written to supply the students in the class of obstetrics in the University of Edinburgh with a simple and connected outline of the facts of embryology, essential to a good understanding of the science of midwifery. Dr. Johnstone has elaborated the matter of the lectures, and this little book contains a clear, if somewhat condensed and dogmatic, account of the main facts of the early development of the human ovum. For the sake of simplicity, the numerous questions of comparative embryology that must be considered if this subject is to be treated in any detail have been omitted. This *résumé* of the subject should prove useful to the students for whom it is intended.

Descriptive Catalogue of the Specimens Illustrating Gynæcology and Obstetrics in the Museum of University College Hospital, London. Second edition. By HERBERT R. SPENCER, M.D., B.S. Lond., F.R.C.P. Lond., Professor of Obstetrics and Gynæcology and Obstetric Physician to University College Hospital; and T. W. P. LAWRENCE, M.B. Lond., F.R.C.S. Eng., Pathologist to the Hospital and Curator of the Museum. 1911. Pp. 213. Price 2*s.*—The collection of specimens in the obstetrical and gynæcological sections of the Pathological Museum of University College Hospital Medical School is a particularly good one, and the number described in this catalogue is evidence of this fact. We would draw attention more especially to the series of fibromyomata of the uterus, which are very remarkable, and the large series of specimens of cancer of the uterus. The second edition of the catalogue follows the lines of the first, written by Sir John Williams and Mr. C. Stonham, but the size of the work is much increased, and the introductory notes to each section have been considerably amplified by Dr. Spencer. In its present form this catalogue is an excellent example of what such a book should be, and the authors are to be congratulated on the excellence of their work, and more especially on the richness of the collection of specimens, the descriptions of which make up the bulk of the book.

Aids to Histology. By ALEXANDER GOODALL, M.D. Edin., F.R.C.P. Edin., Lecturer on Physiology, School of Medicine of the Royal Colleges, Examiner in Physiology to the Royal College of Physicians, Edinburgh. London: Baillière, Tindall, and Cox. 1912. Pp. 135. Price, paper, 2*s.*; cloth, 2*s.* 6*d.* net.—This is a new addition to the well-known Students' Aid Series. It is not a laboratory handbook, in the ordinary sense of the word, but rather a brief manual of descriptive minute anatomy for the junior student, who is prone to be only confused by too lengthy descriptions. The senior student also may possibly find it useful in the course of the revision of his work before examination. It is not intended to supplant laboratory work, and provided it is used in the spirit in which it is written it may be of service. What to observe and what to do are here explained; how to observe and do them must be learnt by actual laboratory practice, and can be learnt in no other way.

Famous Chemists. By E. ROBERTS, B.Sc. Lond. London: George Allen and Co., Limited. 1911. Pp. 247. Price 2*s.* 6*d.*—This is a disappointing book; the 26 biographies contained in it are scrappy, and at least in one instance one of the most important events in the career of a great chemist is omitted altogether. The author has forgotten to record that amongst Cavendish's remarkable achievements was the "sparking" of air until it was reduced to a small unoxidisable residue. This residue was the argon discovered by Lord Rayleigh and Sir William Ramsay in 1894. "If there is any part," wrote Cavendish in 1785, "of the phlogisticated air of our atmosphere which differs from the rest and cannot be reduced to nitrous acid we may safely conclude that it is not more than 1/120th part of the whole." Was not Kekulé, also—the famous originator of the benzene hexagon nucleus theory—at one time in the laboratory of St. Bartholomew's Hospital, under the directorship of Dr. Stenhouse? We can find no mention of it, although it is interesting to be reminded that this great chemist spent some of his time, and gained some of his ideas, in the laboratory of a London hospital. It is notable that amongst the "famous chemists," 26 in all, seven of them approached chemical questions through their early medical studies. The data as to the birth, marriage, and death of the "famous chemists" are, of course, useful, but the chief points in the history of their career are capable of much more interesting treatment than is here given.

MISCELLANEOUS VOLUMES.

IN our issue of March 11th, 1911, we commented on the first edition of *Essays on Duty and Discipline, a Series of Papers on the Training of Children in Relation to Social and National Welfare.* We are glad to welcome the present enlarged and improved reprint of these essays. (London, New York, Toronto, and Melbourne: Cassell and Co., Limited. Price 3*s.* net.) The addition of ten new ones raises the total number to 40. The new essays are contributed respectively by Lady Laura Ridding, Sir R. Baden-Powell, Mrs. Claude Epps, B.Sc., the Hon. George H. Martin, Litt.D., the Right Rev. Edgar Jacob (Bishop of St. Albans), Dr. Bernard Myers, the Rev. J. R. Miller, D.D., Isabel D. Marris, the Rev. Ernest R. Hull, S.J., and Lord Roberts. There can be little doubt that the disquieting condition to which the papers are designed to compel startled attention—viz., "to the very generally acknowledged growth of indiscipline amongst British children of all classes, to the decay among them of a sense of duty, and to the apparent gradual disappearance of the ancient British determination to overcome difficulties by the force of a strong will, which declined under all circumstances to recognise even the possibility of defeat"—is a threatening national danger. This timely publication should deeply interest and influence everyone connected with the upbringing of the young.——If it should happen that any medical man contemplates sending his son into the Royal Navy, he will find considerable assistance in the revised edition (1911) of *How to Become a Naval Officer* (London: Gieve, Matthews, and Seagrove, Limited). Admiral Fremantle gives it the benediction of his introduction. It consists of four parts, dealing respectively with the Admiralty Regulations, descriptive accounts of the first two years of the course (which are spent at Osborne), and the last two years (which are spent at Dartmouth), and the training of naval officers after the school period. An appendix describes the necessary physical requirements for a commission in the navy and gives a list of the articles required for a cadet. Many illustrations of the two colleges and their various departments accompany the book.——*Sexual Disease and its Medical Prevention.* By H. N. ROBSON, M.R.C.S. Eng., L.R.C.P. Lond. (London: Simpkin, Marshall, Hamilton, Kent, and Co., Limited. Price 3*s.* 6*d.* net) is now in its third edition. The second edition was reviewed in THE LANCET of June 4th, 1910. In the present edition the word "sexual" replaces in the title the "social"

of previous editions. We learn from the preface that "since the second edition was issued two American warships, the *Concord* and the *Raleigh*, went from Manila to New York viâ the Suez Canal, visiting various ports *en route*. The crews were placed under the preventive measures described in these pages, with the result that they arrived home with a clean bill of health as far as venereal disease was concerned."

Arosa is in the Grisons, some 6000 feet up on the Rhætian Alps, and after glancing through *Where the World Ends*, by A. A. H. (Herr Junginger-Hefti, Bookseller, Arosa, Switzerland. 1911. Price 3*s.* post free), we should imagine it is one of the jolliest little villages in the world, better in winter than at any other time except it be summer. This book tells all about Arosa, its sports and amusements, its people and places, its advantages as a health resort for various lung and nervous troubles, who should visit it and who avoid it, how to get there and what to do when there. We do not see anything about how to get back, but we can well imagine, if all that is said in the book is as true as it is interestingly told and charmingly depicted in the illustrations, that no one ever wants to come back.

——It is highly probable that, as Dr. Frederick W. Saunders says in his *Stepping Stones to Health on the Nile* (London: H. K. Lewis. 1911. Price 1*s.*), the peculiarities of the climate of Upper Egypt are little recognised by those who recommend their patients to go there for the winter. While it is suitable for many conditions requiring a warm, dry climate, cases of valvular heart disease, pulmonary tuberculosis (except in an early stage), chronic gastro-intestinal catarrh, and persons of advanced age or low vitality should not be sent at all. In this little pamphlet Dr. Saunders gives a brief description of Assouan, Helouan, and Luxor, intermixed with many notes on transport (he particularly advises the all-sea route out), amusements, wraps, water, milk, dust, flies, chills, clothing, and what not, likely to be of use to those intending to go there.

In a leading article on Medical Internationalism in THE LANCET of April 30th, 1910, we commented on a pamphlet with that title presented by Dr. P. H. Eijkman, a physician at The Hague, to a meeting there of the Bureau of the Permanent Commission of the International Medical Congresses, on behalf of the Bureau Préliminaire de la Fondation pour l'Internationalisme, a society which keeps records of the associations, unions, leagues, conferences, exhibitions, and congresses of every nation, with a view to "organising the organisations." The Bureau has recently issued a further work by Dr. Eijkman entitled *L'Internationalisme Scientifique* (*Sciences Pures et Lettres*). It is proposed, following the example of the Bureau of the Permanent Commission of the International Medical Congresses, the Permanent Bureau of the Pharmaceutical Federation, and the Permanent Bureau of the International Institute of Statistics, which have their seats at The Hague, to establish there a Permanent International Bureau of Pure Sciences and Letters. In a preface Professor Paul S. Reinsch, of Berlin, Roosevelt Exchange Professor at the University of Wisconsin, U.S.A., makes the important observation that this organisation of organisations is not the outcome of any purposive struggle towards internationalism, but a simple and natural consequence of the tendency in each branch of science to follow the most practical and efficacious path. In the introduction Dr. Eijkman adds a few pages of supplementary matter to his former pamphlet on "Medical Internationalism," enumerating many additional international medical or quasi-medical bodies omitted from his list in the beforementioned pamphlet. He lays special stress on the fact that in the domain of hygiene the organisations are not exclusively composed of medical men, and consequently cannot be included in the Bureau of International Medical Congresses. He suggests, therefore, a permanent Commission of International Congresses of Hygiene and Demography, to bring together all the various bodies occupied with that special department of knowledge.

JOURNALS AND MAGAZINES.

The Kala-azar Bulletin, Vol. I., No. 1.—In THE LANCET of Dec. 16th we drew attention to the issue of an "introductory" number of a new bulletin which was to be devoted to the furthering of the study of kala-azar. That preliminary number consisted entirely of a list of some 900 references to works on the diseases caused by leishmania. The present publication is the real first number of the *Kala-azar Bulletin*, which is issued under the direction of the managing committee of the Sleeping Sickness Bureau, and under the editorship of Dr. C. M. Wenyon. In contains some extremely interesting editorial articles, the first of which relates to Experimental Kala-azar in Animals, giving details of recent investigations undertaken in Tunis, Paris, Italy, the Sudan, and India. The next contribution is on Spontaneous Canine Leishmaniasis, mention being made of the discovery of the disease by Basile in Bordonaro near Messina, by Critien in Malta, by Alvares and Pereira Da Silva in Lisbon, by Cardamatis in Athens, by Dschunkowsky and Luhs in Transcaucasia; and by Bousfield (very probably) in the Sudan. Allusion is also made to the negative results obtained by Donovan in Madras, by Fülleborn in Hamburg, and by Wenyon in Bagdad. An article full of interest on Experiments on the Transmission of Kala-azar by Blood-sucking Arthropods follows, and in it are discussed the investigations of Patton, Marshall, Basile, Sangiorgi, Gabbi, Franchini, and others. The remaining contributions relate to experimental work on oriental sore, the culture of Leishmania tropica, and to dermal leishmaniasis in Egypt and the Sudan, and in the Niger Territory. The number concludes with a bibliography containing a list of 60 references, being a continuation of the 900 already published in the "introductory" issue of the *Bulletin* to which we have previously made allusion. It will thus be seen that there is no lack of material on the subject of leishmaniasis. The *Kala-azar Bulletin* will, in our opinion, serve a very useful purpose in focusing the knowledge collected and by recording the results of researches made on leishmaniasis at home and abroad. The subject is becoming one of increasing importance in view of the fact that the distribution of the various forms of disease due to leishmania is now known to be far wider than was at one time believed. We wish our new contemporary all possible success in the work which it has so successfully begun in its first number.

The British Journal of Inebriety. Vol. IX., No. 3. January, 1912.—The first place in the January number of this journal is naturally given to the Norman Kerr Memorial Lecture on the Action of Alcohol on Body Temperature and the Heart, delivered at Cambridge by Professor G. Sims Woodhead last November. This important contribution to the scientific literature of alcoholism was summarised in an annotation in THE LANCET of Nov. 25th, 1911, p. 1497. The journal also contains an interesting article by Dr. Isador Coriat on the Psycho-pathology and Treatment of Alcoholism. Dr. Coriat discusses those cases of inebriety characterised by periodic drinking in which the periodicity is due to variations in the organism arising independently of environmental influences. As clinical types of this sort of inebriety he distinguishes: (*a*) periodic drinking due to slight depression and anxiety, such, for instance, as may be observed as a premenstrual

condition of women; (*b*) periodic drinking as an epileptic equivalent, or, in other words, the genuine dipsomanias; (*c*) periodic drinking due to certain recurring variations of mood which are closely related to, and in many cases identical with, the cyclic changes of manic-depressive insanity; and (*d*) periodic drinking as a psychasthenic impulsion. These distinctions are important, as the different pathological states demand different modes of treatment, corresponding to differences in the mental mechanisms. In dipsomania we are dealing with an interruption in the continuity of consciousness of the same nature as that which occurs in epilepsy, and characterised, as is the dream state of that neurosis, by an amnesia of conservation. In manic-depressive cases, on the other hand, we have to do with periodic variations of mood, while in psychasthenia the impulse acts as though it were an abnormal suggestion thrust into the mind from without. In these latter cases, and in drunkenness generally, when amnesia occurs it is due to the toxic action of alcohol, and is then merely an amnesia of reproduction, in which the lost memories may be revived by various psychological devices. In accordance with its epileptic origin, we find that dipsomania is effectively treated with bromide and salt-free diet, but that it is entirely uninfluenced by psychotherapy. In the other varieties of inebriety, on the contrary, the only treatment of value is some form of suggestion, preferably given in hypnosis. By this method the author claims to have obtained 66 per cent. of recoveries and a further 20 per cent. of improvements in the cases of inebriety which he has treated. A short popular lecture on Alcohol and Work, by Sir Thomas Oliver, is also of interest.

The Universal Medical Record.—With the New Year another addition to the ranks of English medical journalism makes its appearance in the *Universal Medical Record*, edited by Mr. George S. Elliston (London: 36–38, Whitefriars-street. Price 2*s.* 6*d.* each monthly number, or 25*s.* per annum). The first (January) issue contains an instructive paper by Sir Clifford Allbutt on the Importance of Precision in Nomenclature, which it could be wished that every intending contributor to the medical press would read, mark, learn, and inwardly digest. Sir Clifford Allbutt closes his remarks with the assertion that "our present danger is lest the analytic tendency of modern pathology dissolve the outlines of disease drawn by the freehand of our forefathers, who, being farther from the trees, were able better to see the woods." Mr. B. G. A. Moynihan contributes an article on Jejunal Ulcer. A number of presumably editorial articles on various medical and surgical themes are followed by 36 pages of abstracts from current medical literature relating to the various departments of medicine. The abstracts are discriminating.

The Journal of Anatomy and Physiology. Conducted by Sir WILLIAM TURNER, K.C.B., Professor ALEX. MACALISTER, Professor ARTHUR THOMSON, Professor ARTHUR KEITH, and Professor ARTHUR ROBINSON. Vol. XLVI. Third Series: Vol. VII., Part II. January Number, 1912. London: Charles Griffin and Co. Annual subscription, 21*s.* post-free.—The current number of this journal contains only four papers. The first of these, by Mr. T. Manners-Smith, occupies considerably more than one-half of the entire subject-matter, and concludes the studies undertaken at Cambridge on the Limb Arteries of the Primates. Twelve coloured plates add to the value of the paper, which, with the parts published in 1910, makes a valuable contribution to our knowledge of the morphology of the vessels of the limbs. Professor J. Symington contributes a paper upon the Topographical Anatomy of the Salivary Glands. This article, which is excellently illustrated, describes the relations of the glands as they are seen in frozen and formalin-hardened sections of the head. The study is a careful one; but although Professor Symington says that "the variations in the shape and relations of the salivary glands are generally slight and unimportant," this is not perhaps the experience of all anatomists and surgeons, and three subjects seem all too few to warrant the findings being necessarily typical. Dr. Douglas E. Derry, in a paper on the Influence of Sex on the Position and Composition of the Human Sacrum, shows how the pelvis in the transition to the upright posture tends to become situated nearer to the hind end of the spinal column. In this migration the female has not gone so far as the male, although the illustrations provided by the author would appear to depict the opposite condition. These facts are undoubted, but it is questionable if they can be called upon to explain more of the variations of the vertebral column than those which fluctuate about the lumbo-sacral region. Dr. F. Wood Jones contributes a description of some cases of Extroversion of the Bladder, and discusses the problems in connexion with this well-recognised condition. These problems are somewhat complex, for they concern the dual origin of the processus vermiformis, as well as the causation of the primary anomaly. The theory put forward by the author hinges on an early distension of the allantois, and many points appear to fit in with this, but it must always be remembered that any "distension" theory, however attractive, cannot be universally acceptable.

Caledonian Medical Journal.—The greater part of the January issue of this journal is a long article by Dr. R. C. Maclagan, of Edinburgh, on various ceremonies and festal observances associated with New Year's Eve in Scotland. As that country may be roughly divided into an English-speaking portion or Lowlands, and a Gaelic-speaking portion or Highlands, it it easy to understand that there are two names for the last day of the year, these being Calluinn in Gaelic and Hogmanay in English. Dr. Maclagan's article is largely philological and contains much information on topics connected with the folk-lore of many nationalities—English, Scotch, Irish, Welsh, Manx, French and Breton, German, ancient Greek, and ancient Roman. Most of it will be of interest to Gaelic scholars. Some critics may consider his philology to be imaginative now and then, as when he suggests that the word Amen after a prayer is derived from Ammon in Egypt, where there was a famous temple of Jupiter, and that the word Jehovah comes from Evoe, the shout of the frenzied congregation at a festival of Bacchus. The paper is very interesting.

CENTRAL MIDWIVES BOARD.—A meeting of the Central Midwives Board was held at Caxton House, Westminster, on Jan. 18th, Sir Francis H. Champneys being in the chair. A letter was considered from the Director of Public Prosecutions with regard to the case of a woman who had tendered a false and fraudulent certificate of birth with the object of being accepted as a candidate at the examination of Dec. 15th, 1911. The Board decided that the Director of Public Prosecutions be thanked for his letter, and that he be informed that the Board acquiesces in the course which he proposes to adopt. A letter was considered from Mr. T. H. Barlow, of 30, Rodney-street, Liverpool, with regard to the difficulty which arose through a mistake having been made at the October examination at Manchester. The secretary presented a draft reply which, after discussion and amendment, was approved by the Board. Sir George Fordham asked leave to propose that application should be made to the Insurance Commissioners that their draft regulations in regard to the maternity benefit should be sent to the Central Midwives Board with a view to the Board's making any observations upon them. The chairman admitted the resolution as a matter of urgency, and it was agreed that the request should be preferred to the Commissioners through the Privy Council.

THE LANCET.

LONDON: SATURDAY, JANUARY 27, 1912.

The National Insurance Act.

IN another column we record briefly the various occurrences of the past week, which go to show that the members of the medical profession are preparing themselves to meet the situation that has been created by the National Insurance Act in a manner creditable to themselves and useful to the community; and it is becoming certain that many divergencies of opinion are more apparent than real.

Our Edinburgh correspondent indicates that the formation of a Central Council in Scotland for the purpose of dealing with the medical questions arising out of the Insurance Act is now within sight. On Saturday last, Jan. 20th, a conference was held under the auspices of the Royal College of Surgeons of Edinburgh, which was attended by members of the governing bodies of the Scottish medical corporations and by representatives of the Universities of Edinburgh, Aberdeen, and Glasgow, a sympathetic message being also received from the University of St. Andrews. At this meeting the many different plans which have been for some weeks discussed crystallised into a simple decision that joint action was desirable, and that a Central Medical Insurance Council for Scotland should be formed, to consist of representatives of the Scottish universities, the medical corporations, the Scottish Committee of the British Medical Association, and delegates from each of some 50 or 60 areas in Scotland. This seems to us to be a most satisfactory procedure, as supplying the profession with exactly the support which it ought to receive in the difficult situation in which all medical men are now placed. The formation of such a Central Council must also impress the public favourably, who, for obvious reasons, are too ready to attribute the discontent of our profession with the Insurance Act to a desire to seize an opportunity for self-aggrandisement at the expense of the community. In particular we welcome this action on the part of the Scottish Universities and corporations, because not only in this way is notice taken of the ominous position of the medical practitioner, but the threat that is uttered by the Act against medical education and the organisation of medical charities is also recognised. The Scottish Central Council has for its object not only to uphold the material rights of those whom it represents, but to consider the effect that the Act may have upon medical education and upon the higher developments of medical science.

We are not without hope that our great medical corporations in England may take a similar step. It is not so easy in England as it is in Scotland to obtain the general coöperation of the universities, which are much more numerous and not so easily comparable with each other. But the majority of our practitioners are Members of the Royal College of Surgeons of England, and very many are also Licentiates of the Royal College of Physicians of London, whether or no they possess also a degree in medicine. We believe that the Royal Colleges might at this juncture serve in a most valuable manner the interests of their Members and Licentiates if they would establish under their ægis, if not actually out of their own governing bodies, a Central Council which would be prepared to take a definite line regardless of the numerous private and personal differences that have so far marked and marred the actions of the medical profession as a whole. Such a council would not be tied down necessarily to the demand for the recognition in the Act of the six cardinal points, and would not be affected by the attitude of one section of the British Medical Association towards another section. In a Central Council, established on large lines, the British Medical Association would receive valuable recognition as the obvious medical organisation to take action in representation of a united profession; while the Central Council would help the Association to decide in what way such action could be most effective. The position of the general hospitals, which play so important a part in medical education, and the position of the students, the great majority of whom may expect to receive diplomas at the hands of the corporations, could be considered by such a Central Council at the same time as they were regarding the professional outlook of those who were already included upon their rolls; and to any sort of pronouncement put forward by such a body the public as well as the medical profession would listen with respect. We believe the guidance of a Central Council promoted by the Royal Colleges would be welcomed in England as a similar body has apparently been welcomed in Scotland; and we believe further that upon the formation of this Central Council a number of persons, now dissenting violently among themselves about details, would be prepared to make a common stand against exploitation of the medical profession, while desirous of associating that profession with any great measure for the advancement of health and the alleviation of misery in this country.

The Medical Profession in India.

WE have received from a valued correspondent in one of the Presidency towns a communication setting forth some aspects of the present dissatisfaction that exists among the native Indian members of the profession, with the object of allaying which we understand the Indian Government is now proposing to make certain important changes. It is perhaps not generally understood at home that the position is really one of considerable complexity, deserving anxious thought. When the Government provided medical treatment for the millions of India it established hospitals and dispensaries, and set on foot an educational system for the training of native medical men. So far as concerns the native troops of the Indian Army, these are medically cared for by European, Eurasian, or native medical officers, under whom is a large staff of "hospital assistants" (or, as

they have been recently styled, "sub-assistant surgeons"), who have been professionally trained for their position during three years by the State, but are not technically "qualified" practitioners. The British troops are attended by European medical officers, under whom serve the Indian Subordinate Medical Department, composed of "assistant surgeons"; these are of European or Eurasian parentage, have also been professionally educated (during four years) by the State, and frequently possess great experience and professional skill, but they are not, as a rule, technically "qualified" practitioners. The hospital assistant class are also largely employed throughout the country in subordinate charge of civil hospitals, and some military assistant surgeons also discharge civil duties, though available for military duty if required.

The ordinary native medical practitioner, not in Government service, who has obtained a licence in medicine and surgery after five years' study and who practises independently as a native doctor, generally speaking amongst the poorer inhabitants, is not, as a rule, so efficient as either of the other two classes, though his curriculum of study has been longer; for he practises by himself, whereas the other two classes do their work to a great extent under the supervision of European medical men, and are quick to assimilate the skill and experience of these latter. The two former classes have been educated at Government expense, and they remain in Government service because, in nearly every case, they have no legal qualification to practise independently; occasionally they do take out full qualifications, sometimes even going to Europe for the purpose; but these are quite exceptional cases. It must be allowed that the condition of things is not ideal; many of these subordinate officers are really extremely capable men, but they are not technically "qualified"; on the other hand, there are a great number of "native doctors" all over the country, possessed of a technical qualification, but really very imperfectly educated, and owing to the circumstances of their position not really capable of developing into a professional body of high standing. It is not perhaps generally realised that India is almost overrun with native doctors of various degrees of professional ability; the great complaint is that the cities are overstocked with them, all trying to scrape together a living, but apparently forced to follow dubious courses of professional conduct, such as advertising or the sale of nostrums, in order to make both ends meet. For it should be understood that these practitioners are not generally of independent means; the Indian gentleman of substance does not often put his son into the medical profession, he sends him into law; not only does the law offer greater pecuniary rewards (for going to law is one of the chief pleasures of a large part of the population), but its opportunities are greater, and the prestige it carries is considerably superior.

Now, it is only with a high standard of professional attainment that a good type of student can be attracted to any profession; in the present case a higher standard would mean fewer doctors, but these few would obtain a living wage, and some of them would attain eminence, either professionally, or scientifically, or financially, and so induce others to emulate them. According to present conditions it has to be acknowledged that India does not turn out a high class of practitioner. There has recently been an outcry that the native doctor does not get a fair chance of improving his professional knowledge and position, since all the appointments and professorships at the medical colleges are in the hands of the official Indian Medical Service. It must be admitted that this is the case, and if the service considers appointments of this nature to be its reward for hard work and expatriation, surely there is a great deal to be said for the view. A great service cannot be recruited unless there are some tangible and dignified returns. However that may be, it is quite certain that the "independent" body of native practitioners must study harder and must have a higher standard of general culture before they can be considered capable of occupying professorial appointments. It would, we believe, be generally admitted by those conversant with the facts that even in the large cities, where native doctors of a good type are to be found, their status of professional attainments is not sufficient to qualify them satisfactorily to hold a professorship. The advance of education has been extraordinarily rapid in the large centres of India during recent years; it is not in the least surprising that there should be discontent at the deficiency of pecuniary rewards and prospects among those who have qualified themselves by examination for the exercise of a profession. The situation is not an easy one to deal with; but (1) there must be a gradual and deliberate evolution and development before the office of *teaching* can be safely entrusted to the hands of a class that have only been themselves *learners* for little more than a single generation; and (2) there must be more evidence than has at present appeared of a pursuit of knowledge for its own sake, of a desire for research, before the higher offices of teaching can be committed to Indian medical graduates. There have been a few brilliant exceptions; but the intellectual characteristic of the class that enter our profession in India has been aptitude for the acquisition of knowledge, rather than capacity for original research. It might also be said that they have been especially liable to suffer from what BACON called the first distemper of learning, when men study words rather than things.

Annotations.

"Ne quid nimis."

THE PREVALENCE OF THE NEUROPATHIC TAINT.

IT is a commonplace of psychiatry that a kinship of origin connects several of the different clinical forms of mental disease not only with one another but also with the numerous eccentricities of thought and conduct that are met with in individuals of that large and ill-defined class formerly described as "degenerates." These latter minor abnormalities may therefore be regarded as indicating a morbid tendency in the stock, and since this tendency may be expressed in graver forms of decadence in later generations, the prevalence of such neuropathic conditions is a matter which must nearly concern the vitality of the race. On this account there is an obvious practical interest in endeavouring to ascertain to what extent these conditions are really present in the general population. As statistics bearing directly on this point do not, however, exist, we are obliged to have recourse

to indirect methods of inquiry, and of these the most promising would appear to be the method which proposes to use the known amount of certifiable insanity as an index of the total amount of degeneracy of which it is the most extreme expression. Data which can be used in this way may be collected, in what should soon be sufficient quantity, from the series of detailed pedigrees which are being worked out with so much care and industry in recent investigations dealing with the hereditary factor in insanity. In one of the latest of these investigations, reported by Dr. A. J. Rosanoff and Miss Florence Orb in the *American Journal of Insanity* for October, 1911, special reference is made to this point. The writers, after an apparently adequate scrutiny of the history of each of the neuropathic individuals, 437 in all, included in the pedigrees which they have studied, arrive at the conclusion that only 115, or 26·3 per cent., presented at any time in their lives indications for commitment to asylums for the insane. If, therefore, this percentage is to be regarded as fairly representative of the proportion of certifiable cases in an average series of individuals showing neuropathic symptoms it would be necessary to multiply the number of certified lunatics in the community by about four to find a true estimate of the incidence of the neuropathic taint in the general population. It is interesting to note that this ratio of the certifiably insane in the degenerate families studied by Dr. Rosanoff and Miss Orb corresponds very closely with Dr. Mott's estimate of the proportion of offspring of insane parentage who themselves become insane—viz., 1 in 4 or 5.[1] Dr. Rosanoff and Miss Orb, who approach the question from the Mendelian point of view, suggest that it is necessary to take account further of those individuals who, though themselves normal, are carrying the neuropathic taint as a latent character, and they bring forward some rather speculative arguments tending to show that a relatively large proportion of the general population may be in this unsound state. However that may be, the facts reported in their interesting paper are a useful reminder that our available restrictive measures, which deal only with the patently insane, and but intermittently and ineffectively even with them, touch no more than a fraction of the tainted members of the community, and for that reason can be of little influence in checking national degeneracy. The remarks of Dr. T. Claye Shaw (in a lecture on the Mental Processes in Sanity and Insanity at p. 211) bear on this matter.

KING EDWARD'S HOSPITAL FUND AND THE EVELINA HOSPITAL.

THE chairman of the Evelina Hospital for Sick Children, Mr. D. Malcolm Scott, has published an explanation of the omission of that charity from the list of awards granted to hospitals by the King Edward VII. Hospital Fund Committee. From this statement of the case for the Evelina Hospital it appears that in 1909 the King's Fund suggested that the hospital should appoint an "inquiry officer," and in December of that year a grant of £150 was made on condition that such an officer was appointed. As a matter of fact, the experiment cost the hospital over £200 a year, so that the management were actually some £50 a year out of pocket. The governing body of the hospital then referred the matter to a subcommittee, and the result was that the plan was adopted of establishing a Samaritan Fund in order that the almoner, or "inquiry officer," should have means at her disposal to assist necessitous patients. The next year, 1910, the hospital received a legacy of £3620, left unconditionally; and it was decided, under legal advice, to allocate the sum to the Samaritan Fund. The King's Fund objected to this, and informed the Evelina authorities that the money must be transferred to the general fund; failing compliance, the annual grant was imperilled. The hospital committee refused to alter its decision, and the result is that the Evelina Hospital receives no grant this year from the King's Fund. On the merits of the whole case it is not easy to decide, since Mr. Scott's version is necessarily an *ex parte* statement. But if it is assumed that the facts are as set forth, and that no considerations other than those alleged have determined the attitude of the King's Fund, it would certainly seem that a very rigid discipline is being enforced. The King's Fund insisted on an almoner at the Evelina Hospital, and paid the greater part of the cost. A Samaritan Fund is a recognised and approved adjunct of an almoner's work, and exists at many other hospitals without interference from the King's Fund. Therefore, it may be inferred that to the Samaritan Fund itself the King's Fund has no objection. Since the Samaritan Fund has to be financed somehow, the difference between endowing it with the interest of a legacy and contributing the same sum annually from the income of the hospital is, to the ordinary mind, one of accounts. In either case the principal sum is retained as an asset of the hospital, and in either case the interest on it is applied to one of the legitimate purposes of the charity. We do not understand the principle which has guided the King's Fund, unless, indeed, the £3620 was to be spent instead of being invested as an endowment for the Samaritan Fund. The exact destination of a legacy seems to be the proper province of the managers of a hospital, and the function of the King's Fund should be rather to see that it is not squandered or applied to purposes other than those for which the hospital exists. Too much interference with the internal economy of individual hospitals is to be deprecated.

THE MINE-DUST PROBLEM IN SOUTH AFRICA.

THE difficulties of dealing with dust in mines are acknowledged to be extremely great, and the subject has received the closest attention from every point of view. As is well known, in South Africa pulmonary affections in miners are of frequent occurrence, and "miners' phthisis" produced by the dust occasions a high mortality. In THE LANCET of Dec. 2nd, 1911, p. 1588, we published a letter from Mr. J. L. Aymard, of Johannesburg, charging the mine-owners and Government with neglect by not generally enforcing measures which had been found to be successful in the Nanse mines. In our issue of Jan. 13th, p. 121, will be found a letter from Dr. Charles Porter (medical officer of health of Johannesburg) and others, giving the history of the Mining Regulations Commission, which, though well known in Johannesburg, is naturally little known elsewhere. This letter throws a more favourable light on the proceedings of the Commission, and it is gratifying to learn that practically all of its recommendations, including those regarding dust prevention, mine ventilation and air standards, scavenging, water-supply, and so on, were promulgated almost verbatim as regulations with the force of law. These regulations are also printed after the letter. We have received another communication from Mr. Aymard in the form of a paper which was submitted at the monthly meeting of the Chemical, Metallurgical, and Mining Society of South Africa on Jan. 21st of last year. In this paper many points are discussed in relation to miners' phthisis and its prevention. He quotes Dr. J. H. L. Cumpston, an Australian Government medical official, who in a recent report holds the view that the very finest dust merely circulates in the

[1] Inborn Factors of Nervous and Mental Disease, Presidential Address to the Neurological Section of the Royal Society of Medicine.

blood without doing any material harm, and he contends that it is a coarser dust which, by its constant passage through the air channels, causes the fibrous growth. Mr. Aymard discusses at length the various procedures which he considers necessary to help to solve the dust problem. Since this paper was read, as will be seen by the regulations above mentioned, a great deal has been accomplished to remedy the defects which have hitherto existed. This will do much to decrease the anxiety which has been felt, and doubtless by enforcing the regulations which have been formulated the incidence of miners' phthisis will be materially lessened.

RUPTURE OF THE BRACHIAL ARTERY DURING FOOTBALL.

IN the *Australian Medical Journal* of Nov. 25th, 1911, Dr. W. Moore has reported a rare accident during football—rupture of the brachial artery. A man, aged 21 years, was playing on August 26th. The ball was kicked down the centre of the ground. He ran from one side, whilst an opposing player ran from the other side. They both jumped for the ball and touched one another in the air and fell to the ground. The patient rose to his feet immediately, found his right arm painful at the elbow, and noticed a large swelling at the inner side of the front of the elbow. He walked off the ground holding the right wrist with his left hand. When examined in the dressing-room the right hand and forearm were found pale and cold, and there was considerable swelling about the right elbow and a rounded lump about the size of a hen's egg at the front and inner aspect. The lump was very hard and did not fluctuate or pulsate, and the skin over it was abraded. At the wrist no pulse could be felt. Within five minutes of the accident the hand and arm had become absolutely pale and corpse-like. They were quite cold and devoid of sensibility. No injury to the bones or elbow-joint could be made out. The patient's colour was good, but the pulse at the left wrist was feeble. The arm was wrapped in cotton-wool and bandaged. It seemed that the brachial artery had been torn across just above its bifurcation. The inner and middle coats might have curled up, allowing very little blood to pass. Dr. Moore feared that it would be necessary to incise freely and clear out the clot to relieve tension, and then to secure the vessel. But a little over an hour later the hand was slightly warmer, the extreme pallor had disappeared, and some sensibility had returned. The hard lump at the elbow had disappeared, and there was a general soft swelling at the elbow and upper part of the forearm and lower part of the arm. No pulse could be felt at the wrist. The limb was wrapped more thoroughly in cotton-wool, carefully bandaged, kept almost fully extended, and raised on a pillow. About four hours later the arm was again examined and sensibility was found quite distinct. The swelling had extended almost into the axilla and to the distal third of the forearm. There was no pulse at the wrist. A skiagram taken next morning showed that the bones and joint were intact. Sensibility in the limb was good and it was warm. The finger-nails were fairly red and the colour returned to them quickly after pressure was removed. There was still no pulse at the wrist, and the arm and forearm were much swollen. The arm was bandaged, slightly flexed at the elbow, and the patient was allowed to get up. On August 29th there was further improvement and he was allowed to go out. Two days later he was much better, but in the morning he noticed that the right hand was colder than the left. He was very tender about the elbow, where there was a slight localised swelling at the front and inner side. There was no sign of pulsation at the site of the injury. The arm was still greatly swollen from the axilla almost to the wrist, but most at the elbow. There was brownish, yellow, and blue discolouration from the axilla to the wrist. The arm was still wrapped in cotton-wool and bandaged, and was carried in a sling. On Sept. 6th the swelling was much less and was most marked at the back of the elbow. There was distinct hardness at the front and inner side, and over this was a small scab. The patient could extend the arm fully. Pulsation could be felt in the brachial artery below the middle of the arm but not traced to the elbow. The bandage was left off and gentle massage was ordered. On the 13th the swelling and discolouration were much less and a feeble radial pulse could be felt. On Oct. 2nd movements of the arm were practically normal. The right arm was smaller than the left from wasting of the muscles. There was still a little hardness on the front and inner side of the elbow-joint, which was distinctly tender. The pulse could easily be felt at the wrist, but pulsation in the brachial artery could not be traced to the elbow.

CRUMB AND CRUST.

LAY discussion not infrequently turns upon the relative merits of the crust and crumb of bread, but it has come to our attention that the matter is often referred to the family medical adviser, generally in the form of a question as to which of the two is more digestible. Analysis shows very little difference in regard to the constituents of each, but the crust, of course, contains much less moisture, and so is richer in solid constituents. The crumb contains on an average 43 per cent. of moisture, while the crust contains only 20 per cent. One important dietetic difference between crust and crumb is the fact that the former contains an increased amount of soluble carbohydrates owing to the action of intense heat which the crust receives compared with the crumb during baking. Moreover, the crust has a more pronounced "bready" flavour than the crumb, a flavour which is attractive and which stimulates the flow of digestive juices. That the digestion of crust in the mouth is much more likely to be complete than is the case with the crumb everyone has generally found out for himself, as the plasticity of the crumb, and especially that of new bread, prevents to some extent the salivary attack. If new bread were as thoroughly masticated as dry stale bread is bound to be, there would be no reason why it should be less digestible, but it seldom receives the necessary treatment in the mouth.

SPONTANEOUS HÆMORRHAGE INTO THE KIDNEY.

HÆMORRHAGE into the substance of the kidney, or into the peri-renal tissues, is a fairly common result of injury to the abdomen; but apart from this it is a rare event. The principal causes are aneurysm of the renal artery or one of its branches, of which there are 26 recorded instances, injury causing the arterial lesion in a majority; new growths of the kidney, intense congestion in the course of a nephritis, and arterial disease without aneurysm. There is also an interesting and mysterious group of cases to which the term "renal apoplexy" has been applied. The case recorded by Dr. R. S. Fowler in the *Annals of Surgery* for December, 1911, is of this latter type. A woman, 52 years of age, was attacked ten days before admission with a dull pain in the back, which soon became more severe and was associated with considerable hæmaturia. Micturition, though not abnormally frequent, was accompanied by sharp pain in the left renal area, and the left lumbar region was tender. There was a chill with fever, and the patient vomited several times. No cause could be assigned for these symptoms. Examination disclosed a fixed, tender swelling in the neighbourhood of the left

kidney as large as a cocoanut. There was no evidence of a stone, and the urine contained nothing abnormal apart from a microscopic quantity of blood and a few hyaline casts. The case was regarded as one of hydronephrosis. At the operation, however, a large amount of blood was found in the left peri-renal region, and the capsule of the kidney was torn. It was thought wise to perform nephrectomy, after which the patient recovered completely. A careful examination of the kidney failed to disclose any reason for the hæmorrhage, which had apparently originated in the cortex near the lower pole, spreading subsequently to the pelvis, and also to the peri-renal tissues through the rent in the capsule. Fowler gives an interesting summary of the recorded cases, and says that there are apparently two distinct pathological conditions, one in which the hæmorrhage begins in the renal substance and spreads into the surrounding tissues later, as in the case recorded by him, and the other arising in the fatty capsule of the kidney. This latter type is comparable to the hæmorrhage which may occur after slight exertion in obese persons into fatty tissues in other situations. Whatever the origin, the blood may burst through into the peritoneal cavity. In the eight cases recorded there was no special incidence as regards either age or sex. The onset was sudden in every instance, with pain referred to that side of the abdomen which corresponded to the affected kidney and usually with some shock. Three times the urine was normal. In all cases a tumour could be felt; in three instances there was local discolouration of the skin. Diagnosis is obviously difficult. Fowler recommends operation in every case: if the hæmorrhage arises from the peri-renal tissues these should be excised, while if the source of the blood lies within the kidney itself nephrectomy is necessary. The infiltrated tissues should be freely removed in order to avert the septic infection which is liable to follow.

THE VISCERAL LESIONS OF EPIDEMIC POLIOMYELITIS.

IN THE LANCET of Jan. 20th, p. 181, we commented upon certain aspects of the epidemiology of epidemic poliomyelitis. We have since received a reprint of a note published in the *Journal of the American Medical Association* of Jan. 13th by Professor Simon Flexner, Dr. Francis W. Peabody, and Dr. George Draper, of New York, upon the visceral lesions of human cases of this disease. They point out that in 1888 Rissler described swelling of the agminated and solitary follicles of the intestine and enlargement of the mesenteric glands and spleen in two children, and swelling of the spleen without changes in the mesenteric glands in an adult, the cases having been observed clinically by Medin. Similar changes, together with enlargement of the thymus, were described in 1910 by Strauss in four children dying during the acute stage of the disease. Harbitz and Scheel and Wickman have also referred to the hypertrophy of the lymphoid tissue of the intestine and the spleen in children. Professor Flexner and his collaborators have examined the organs from 11 children dying from the disease, their ages ranging from 3½ months to 9½ years. Ten of the children died between the third and the eleventh day of the disease. The remaining one, having survived the acute stage of the disease, died two months later from laryngeal diphtheria. They found in all of these cases some hypertrophy of the lymphoid tissues, which was widespread if not universal, and included the tonsils, small intestine, thymus, and the superficial and deep lymphatic glands. The spleen was enlarged, the Malpighian bodies were prominent, and the pulp was increased. Microscopically changes were also found in the parenchymatous organs. The changes in the lymphoid structures consist of hyperplasia of the cells of the lymph nodes and of the lymph sinuses of the lymphatic glands. The changes in the parenchymatous organs were chiefly observed in the lungs and in the liver. The lungs in several instances showed within the capillary and other small vessels a considerable number of myeloid cells of the megakaryocytic type. The changes in the liver were conspicuous and apparently constant, and consisted of hyaline, focal necrosis of liver cells, followed by regeneration and invasion by lymphoid cells and polynuclear leucocytes. The number of these areas of necrosis was remarkably large, and the rapidity with which regeneration was attempted was a striking feature. Professor Flexner, Dr. Peabody, and Dr. Draper, therefore, conclude that epidemic poliomyelitis is one of the diseases in which the organs generally suffer injury, the main stress of which falls upon the nervous system, then upon the lymphatic structures, and lastly upon the parenchymatous organs. Whether these lesions, exclusive of those of the nervous system, are to be attributed to parasitic action, or to the action of toxic elements of parasitic origin, they state can only be a matter of conjecture at present. Their observations constitute a further addition to our knowledge of this important disease, and are worthy of note as enlarging our conception of its nature and effects.

ANTIVACCINATION TACTICS IN INDIA.

A SHORT while ago we received from an Indian correspondent a communication calling our attention to a pamphlet that was being circulated in India, entitled "Small-pox and Vaccination in British India." The pamphlet can now be obtained in this country we understand. The futility of wasting space in a medical journal to go on killing the dead has long been obvious. It is hardly likely that 1 per cent. of the medical profession need any further demonstration of the utility of vaccination than their own studies and experience have brought them. The general public, on the other hand, which does need the instruction, would be more appropriately and successfully reached by competent writers through the lay press. We have looked through the pamphlet, which is a reprint of letters and other contributions addressed by antivaccinationists to some 150 Indian papers. There are also two voluminous criticisms of a book (bearing the same title as this pamphlet) by Major S. P. James, I.M.S., statistical officer to the Government of India. The pamphlet consists of the usual compound of illogical deduction, inaccurate statement, and wild assertion—such, for instance, as that cancer, consumption, paralysis, epilepsy and St. Vitus's dance, and defective teeth in the younger generation have vaccination as the main cause of their prevalence. We are further told that "zymotic diseases are caused by bad food, famine, overcrowding, bad drainage, neglect, dirty houses, and impure soil, lack of pure water, and filthy surroundings"—which, of course, is about as correct as it would be to say that the wheat crop is caused by fertile soil. Again, we are told that "the experience of the British Isles, however, has proved that the only thing that matters where small-pox is concerned is the presence or absence of dirt, neglect, overcrowding, bad air, or bad food." Notwithstanding this, an argument against vaccination is based on the fact that "the statistics of soldiers attacked by small-pox in India show a heavier death-rate per million men than that per million living in the British Isles, in spite of the fact that the soldiers are thoroughly vaccinated and revaccinated, are in the prime of life, and are properly looked after"; and that "the countries mentioned contain a large proportion of very young, very old, delicate, neglected, unvaccinated, unwashed,

ill-fed, and crowded inhabitants, while the army of India consists of picked men in the prime of life who are properly cared for in every way." Any deduction that can be drawn from these data tells just as much against "the only thing that matters where small-pox is concerned," namely sanitation, as against vaccination. The pamphlet, in its notice of Major James's book, adopts the view that the admitted decline in small-pox is chiefly due to the suppression of the practice of inoculation, and cites in support thereof the testimony of Major James that the provinces in which small-pox has declined least—viz., Bengal, Assam, and Lower Burma—are the provinces which Major James himself names as being hot-beds of inoculation. When, however, Major James points out that the diminution of small-pox also "has been very great in provinces where inoculation was never practised widely, if at all," the rebuttal is spoken of as "feeble." It is not Major James's argument that is "feeble." Again, when in support of his contention that vaccination has mitigated the severity of small-pox in India Major James quotes figures showing that out of 1118 vaccinated people attacked with small-pox there were only 97 deaths (a mortality of 8·6 per cent.), while out of 1177 unvaccinated people attacked there were 610 deaths (a mortality of 51·8 per cent.), and further supports it by showing that the case-mortality of 1691 European troops and 3420 native troops, all well vaccinated, is only 10·1 and 7·7 respectively, the only comment made is: "We need not take up space in exposing the farcical character of the Major's unvaccinated fatality rate." There is, in fact, absolutely nothing in the pamphlet calling for fresh consideration, for its argument is in no sense novel, but of the kind to which we have been treated *ad nauseam*. On the other hand, long experience shows that the conversion of the professional agitator is practically never accomplished, though, as in the case of a former health officer of Cleveland, U.S.A., an academic antivaccinationist who has been temporarily led astray by specious arguments has occasionally found them dissolve into nothing before the logic of inexorable fact encountered at first hand. The pamphlet, of course, contains the usual railing at the mercenary character of the medical support of vaccination. "We know that gold appealed powerfully to Jenner; to say, therefore, that vaccinators in this country are actuated by the desire for lucre is simply to assert that they preserve intact the traditions of their profession" (p. 8), and more to the same effect. It will hardly be suggested, however, that the members of the medical profession at large are influenced by a desire for lucre in getting vaccinated and revaccinated themselves, and still less in insisting on vaccination and revaccination for their wives, children, and all whom they hold dear.

TUMOURS OF THE PINEAL BODY.

AN interesting paper upon the symptomatology of tumours of the pineal body, based upon a study of a case of teratoma of that organ and upon a review of all the recorded cases of pineal tumour, is published in the *Archives of Internal Medicine* of Dec. 15th, 1911, by Dr. Pearce Bailey and Dr. Smith Ely Jelliffe, of New York. They give a brief account of the origin, histological structure, and anatomical relations of the pineal body. After the seventh year of life the normal pineal body undergoes a process of involution, the ganglion cells disappear, the glia cells persist, and the connective tissue is increased. The glandular cells become more vacuolated and their nuclei more prominent and pigmented. The view that it is in part a rudiment of a third eye, like that of the Hatteria punctata, is doubted by Cajal, who asserts that it is one of the many blood glands of the body. The symptoms produced by tumour of this body may be those indicative of brain tumour with certain focal signs, and, in addition, certain distinct and noteworthy disturbances in nutrition, so that in some cases the diagnosis may become reasonably certain. The neurological symptoms are at first those due to increased intracranial pressure resulting from the hydrocephalus which often develops with great rapidity, owing to pressure on the veins of Galen and obstruction to the aqueduct of Sylvius. There are also some reasons for believing that growths in the region of the pineal body may stimulate the production of cerebro-spinal fluid. Headache is usually the first symptom. Papillary œdema soon develops, and half of the patients have become blind. Abnormal drowsiness has been observed in many cases, even in the early stages. Certain motor phenomena, such as increased muscular tonus, weakness without paralysis of the extremities, and increased tendon reflexes may be due to the hydrocephalus alone, but when the tumour reaches a certain size it usually gives rise to special symptoms from pressure upon such structures as the corpora quadrigemina, the floor of the aqueduct, and the superior peduncles of the cerebellum. Pressure on the corpora quadrigemina gives rise to ocular and pupillary signs similar to those of tumours of these structures. Isolated eye palsies are common, and occasionally develop very early. Nystagmoid movements or nystagmus often occur. The pupils are usually widely dilated, frequently unequal, and are sluggish both to light and on accommodation. Facial palsies, slight and usually unilateral, and certain auditory symptoms, such as buzzing in the ear or advancing deafness, have also been observed. Pressure on the cerebellar peduncles may lead to the suspicion of cerebellar tumour. Giddiness and dizziness have been constant; staggering gait has been an early sign in nearly half the recorded cases. Polydipsia and polyuria have been recorded, and are probably due, according to Dr. Bailey and Dr. Jelliffe, to remote pressure on the fourth ventricle. The recognition of the metabolic symptoms produced by tumours of the pineal body is due to Marburg. These appear to be adiposis, early sexual maturity, and cachexia. The adiposis seems to be independent of the nature of the tumour. It is known that disease of the hypophysis may lead to adiposis, and as yet it cannot be definitely decided whether the adiposis occurring in pineal tumours is due to disturbance in the function of the pineal body itself or to interference with the hypophysis through the hydrocephalus of the third ventricle. The sexual changes have been enlargement of the penis, increase in the genital hair, early masturbation, and sometimes changes in the voice. The explanation of these changes is also difficult, more particularly as to their relation to the pineal body or the hypophysis. The third metabolic symptom is cachexia, and as yet it is not determined whether this has any special relation to the pineal body, the tumour, or the hydrocephalus. The case observed by Dr. Bailey and Dr. Jelliffe was a boy, aged 12, admitted for failing memory and difficulty in walking. He had grown very rapidly and was markedly fat. His voice was high-pitched, and he was sleepy and apathetic. He showed a papilloedema of 2 diopters in each eye. Movements of the eyes upwards were completely lost, the superior oblique was affected, and movements outwards were diminished. There was an irregular nystagmus at times. The pupils were equal, irregular in outline, and reacted sluggishly. Hearing was poor and vision was also affected. There was a coarse tremor of both hands together with a good deal of ataxia. The knee and ankle reflexes were exaggerated; ankle clonus and the Babinski and Oppenheim reflexes were present on both sides. While in the hospital, the left side of the face became weaker than the right, and the boy's gait became very ataxic. At the necropsy, made three hours

after death, there was a large amount of cloudy cerebro-spinal fluid, and there was marked distension of the third ventricle. On section, a large rounded encapsulated tumour about 1½ inches in diameter was found replacing the pineal body. It was soft and consisted of sebaceous matter, hair, and pieces of cartilage. Brief histories are also given of 59 cases from the literature, several of which have been recorded in THE LANCET, one of them as long ago as 1837.[1] Dr. Bailey and Dr. Jelliffe have performed a useful service in the careful recording of their own case and in supplying such a complete study of the other cases in the literature.

PRAISE AND BLAME.

THE suggestion that when it is found that the seller has sold goods which on analysis under the Sale of Food and Drugs Acts prove to be genuine he should receive a certificate to that effect deserves careful consideration. Of course, when it happens that the goods are not genuine considerable publicity is commonly given to that fact. We think, therefore, that the request for well-earned praise is logical, provided that no abuse of the issuing of such a certificate is capable of being put into practice. It may be urged that the certificate would be used for purposes of advertisement, but it seems to us that there can be no objection even if that were done. The grocer who exhibits a certificate of genuineness of one or other of his goods would be encouraged, we imagine, to keep up the whole of his commodities to a high standard lest the merited certificate should be stultified by disclosure of subsequent offence. If he decides not to advertise the certificate its purport will at least afford him the satisfaction, which he does not get directly or definitely now, that his goods have passed the requirements of the food laws. The system would have the further advantage that if in the analyst's opinion the sample was perilously near condemnation the shopkeeper might be warned.

THE FEBRILE FORM OF CANCER OF THE RECTUM.

CANCER of the rectum is often overlooked. The patient may preserve all the appearances of health or show only progressive anæmia without any local symptoms.[2] At a meeting of the Société Médicale des Hôpitaux of Paris on Dec. 1st last M. J. Thiroloix and M. Mora reported a rare case in which the local and general symptoms of cancer of the rectum were absent, and the disease manifested itself as a chronic cryptogenic infection with daily rises of temperature such as may be produced by a chronic inflammation of one of the natural cavities (biliary or urinary passages, bronchi, nasal sinuses, or appendix). Still more curious, the general symptoms—fever, anæmia, and wasting—were not uniformly progressive, but regressed and disappeared, and the patient appeared to regain perfect health. A robust man, an engineer, aged 41 years, came under observation. He was athletic, sober, and intelligent, and a careful observer of the least derangement of his health. None of his relatives had suffered from cancer, and his mother was living. He had never had syphilis or any other serious disease. Early in February, 1911, he had febrile attacks every afternoon which consisted of three stages—shivering, hot, and sweating. The rectal temperature rose to from 102·8° to 104° F., and the attack lasted from three to four hours. On the following morning he was fairly well and could continue to direct works of which he had charge. His general health was little affected; he became a little pale, lost some flesh, and was fatigued more readily than previously. Appetite, digestion, and sleep were unimpaired. The perfect daily periodicity of the attacks suggested malaria, but parasites could not be found in the blood, which always showed the same conditions—hypoglobulia and hyperleucocytosis with polynucleosis. Cultures of the blood were negative. All the organs were normal on examination. He never complained of any pain or trouble in defæcation. For four months (February to May) the intermittent quotidian fever remained of the same type, but showed great variations. During complete rest the evening temperature was only 98·6° to 100·4°, while after fatigue it reached 102·2° to 104°. Quinine in large doses had an undoubted action on the fever, which it reduced. In April the anæmia was very marked. The spleen was large and easily felt, and there was a double continuous souffle in the veins of the neck. Thus all the facts seemed in favour of the diagnosis of malaria. In April the medullin of Merck and the cytuline of Couturieux (the juice of yeast and nucleinate of soda) were given in addition to quinine, and his general condition greatly improved. In June the temperature fell, the anæmia disappeared, and strength was regained, and he was sent to the country to complete his convalescence. In September he returned a different man. He had gained from 8 to 10 kilogrammes in weight; he had a good colour and a normal spleen and temperature. His life was accepted by an assurance company which had declined it in January. On Sept. 24th he complained of great pain in the anus which was bearable at ordinary times but terrible on defæcation. It was thought that he must be suffering from anal fissure. On introducing the finger into the rectum on Oct. 4th the pain was so great that he nearly fainted. Though the examination was brief, hard growths could be felt surrounding the upper orifice of the anal canal. Under chloroform a more complete examination was made on the following day, and cancer involving the lower third of the rectum and invading the anus was found. The ano-rectal region was covered with growths, hard below and soft above, which bled on the slightest touch. Excision was performed and death from pulmonary embolism occurred four days after the operation. Microscopic examination showed that the growth was a columnar epithelioma of the rectum which involved the sphincter ani. The moral of this case is that a rectal examination should be made in all cases of febrile anæmia of which the cause cannot be found.

THROMBOSIS OF THE ABDOMINAL AORTA AND OBLITERATIVE ARTERITIS IN THE SAME CASE.

THROMBOSIS of the abdominal aorta is very rare. In the *Yale Medical Journal* for October, 1911, Dr. George Blumer has reported a case which derives additional interest from the fact that obliterative arteritis also occurred. A Russian Jew pedlar, aged 48 years, was admitted into hospital on Jan. 5th, 1909, complaining of pain in the left foot. There was no history of syphilis. Three days before admission, after exposure to cold, he took a Russian bath. Severe cramp in the left leg and foot followed. The foot was so tender that even the pressure of the bed-clothes caused extreme pain and sleep was prevented. The pain was paroxysmal. The patient was well nourished. At the apices of the lungs there was diminished resonance and a few moist râles were heard. The heart was normal and the pulse regular, but there was slight diffuse thickening of the radial artery. In the left femoral artery pulsation was diminished, and the left second, third, and fourth toes were blue and cold and their sensibility was diminished. The blueness extended to about the middle of the foot and the remaining part was red and shiny. The junction of the cyanotic and red areas was very sensitive. Pulsation of the arteries of the foot was feeble. Dry gangrene of the parts supplied by the dorsalis pedis and the branches of the internal plantar artery developed, and on Feb. 12th the leg was amputated at the

[1] S. Stanley: Dropsy of the Pineal Gland, THE LANCET, 1837, p. 935.
[2] THE LANCET, Dec. 30th, 1911, p 1821.

junction of the middle and upper thirds. Healing was perfect and he was discharged on March 4th. On June 18th, 1911, he was readmitted, complaining of great pain in the thighs and gluteal regions. Two hours previously he had fallen to the ground with agonising pain in the back. On admission the pain was so severe that he could not lie recumbent or sit up; he therefore assumed a semi-recumbent posture. The pain was stabbing in character. The right leg and foot felt numb and cold. When seen by Dr. Blumer next morning he was perspiring freely, looked very anxious, and evidently suffered great pain. The abdomen was not distended, but there was a distinct spasm of the abdominal muscles in the lower zones. Pulsation could not be felt in the abdominal aorta. The stump of the left leg was blue and cold to a point 16 centimetres above the knee, and there was doubtful pulsation in the femoral artery. The right leg was cold and cyanotic as far as the middle of the thigh, and pulsation could not be felt in the femoral artery or its branches. Sensation to touch and pain was impaired in both stump and leg. On the right side the knee-jerk was abolished. There was no definite gangrene. On the following day the eyes were sunken and the expression anxious with rather pinched features. The pulse was feebler and more rapid. The cyanosis had extended as high as the buttocks. There was no gangrene of the foot or stump, but on the anterior surface of the scrotum there were two or three superficial areas of dry necrosis. The urine, which was secreted freely, contained a trace of albumin and some hyaline casts. The patient failed rapidly and died on the following morning. Thrombosis of the abdominal aorta between the origin of the renal arteries and the bifurcation was diagnosed. Only a partial necropsy was permitted. There was chronic pulmonary tuberculosis of the fibroid type at both apices. The heart was flabby and its muscle pale and cloudy-looking. On the coronary arteries were a few patches of early arteriosclerosis. The aorta showed only slight sclerosis. The liver and kidneys showed cloudy swelling. In the abdominal aorta just above the bifurcation of the iliacs was a fresh, white, slightly adherent, occluding thrombus, capped above by a red thrombus which reached almost to the origin of the renal arteries. The symptoms and signs were characteristic of thrombosis of the abdominal aorta. The extreme rapidity of onset might have led to a suspicion of embolism rather than thrombosis, but this rapidity has been noticed in previous cases. There was no evidence in the heart or upper part of the aorta of a pre-existing thrombus which might have been detached. On the other hand, the appearances of the lesions were those of thrombosis. There is one point in the case not mentioned in Dr. Blumer's commentary—the patient's race. Dr. F. Parkes Weber has pointed out the comparative frequency of obliterative arteritis among male Jews of the East End of London, some of whom smoke a large number of cigarettes. He suggests that unwholesome food and racial factors play a part. J. Israel has also drawn attention to the occurrence of idiopathic gangrene in Russian Jews.

THE DEATH OF SIR HENRY BUTLIN.

WE have to record with much regret the death of Sir Henry Trentham Butlin, Bart., which took place on Wednesday, Jan. 24th, at his residence in Harley-street. It is only 11 weeks ago that we announced his resignation of the Presidency of the Royal College of Surgeons of England owing to ill health, and expressed on behalf of the profession the hope that with that release from public duties his strength would be restored. Sir Henry Butlin was equally distinguished as a surgeon and as a leader of the profession, and his personality and his many gifts can ill be spared at this critical time. He held many high positions and adorned them all.

THE King has given to Dr. Charles Todd, of the Public Health Department at Cairo, His Majesty's Royal licence and authority to accept and wear the decoration of the Third Class of the Imperial Ottoman Order of the Medjidieh, which has been conferred upon him by His Highness the Khedive of Egypt in recognition of valuable services rendered.

WILL SICKNESS BE INCREASED UNDER THE INSURANCE ACT?

BY FRANK MILTON, M.R.C.S. ENG., L.R.C.P. LOND.,
LATE PROFESSOR OF CLINICAL SURGERY, EGYPTIAN GOVERNMENT SCHOOL OF MEDICINE, CAIRO.

I HAVE no intention of touching upon the question of what would be adequate remuneration for work under the Act; but, since the scale of remuneration must ultimately be based upon the amount of work to be done, it is of interest to try to get some idea as to the probable increase in the amount of sickness likely to be developed by the Act.

In 1910 I was asked by the Association of Carnarvonshire Slate Quarry Owners to go into the question of the surgical results of the Workmen's Compensation Act, and to give evidence on their behalf before the Royal Commission on Metalliferous Mines and Quarries. With this object in view I was supplied with the returns of accidents in six of the largest quarries under the association for the years 1900 to 1909 inclusive. These returns included all accidents known to the management of the quarries concerned, and probably included all accidents which were sufficiently severe to cause a man to absent himself from work.

The number of men employed in these quarries varied from year to year, but for the whole period the average number was 1750 actual employees.

The points to be kept in mind are, that under the original Act compensation was only paid to an injured person after the expiration of 15 days' disablement, and the compensation began on the fifteenth day, the first two weeks of actual disablement not being compensated; but that under the present Act, which came into force on July 1st, 1907, compensation begins at the end of the first week, and if the disablement lasts more than 14 days the claim to compensation is dated back to the day of the accident. It thus happens that if a man receives an injury which disables him for 14 days he gets compensation for seven days only; but if the disablement lasts for 15 days he gets compensated for the whole period.

Before coming to the actual figures it may be premised that slate-quarrying is a fairly hazardous employment, the fatalities being 0·14 per cent. of the men employed, and the severe accidents—that is, accidents involving the fracture of a bone, dislocations, injury to the eye involving impairment of vision, and multiple injuries—being 0·34 per cent. Owing, however, to the nature of the material handled the number of cuts, especially cuts of the fingers and hand, is large, these being due to the excessively sharp edge of the newly split slate. Suppuration does not, as a rule, follow these cuts, and as they are simple incised wounds their healing is rapid and their treatment simple.

In Table I. is given the number of men employed year by year, the total number of accidents of all kinds, and the percentage of accidents to the number of men employed, the latter being visualised in Chart 1. It will be noticed that at the beginning of the period (in 1900) the percentage of accidents was small, being only 1·56 per cent., and rising in 1901 to 2·13 per cent. It is possible that during these early years accidents were not recorded with the care that it was found necessary to give to them later on, and that the cause of the men being absent from work was not inquired into with the same strictness that now holds. This might have, in part, accounted for the small number registered, but that the smallness of the number was not entirely due to this is shown by the fall which occurred between 1903 and 1906, when the percentage fell below that for 1901.

With the coming into force of the present Act in 1907 a

CHART 1.

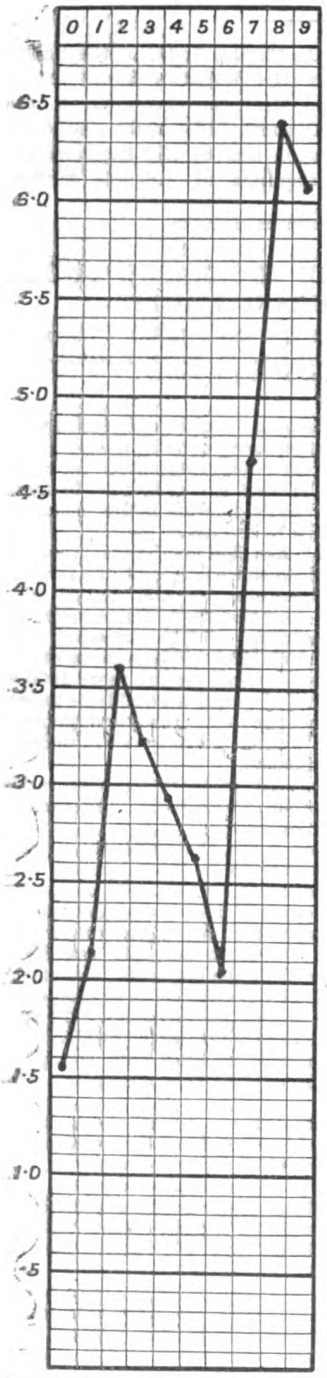


CHART 2.

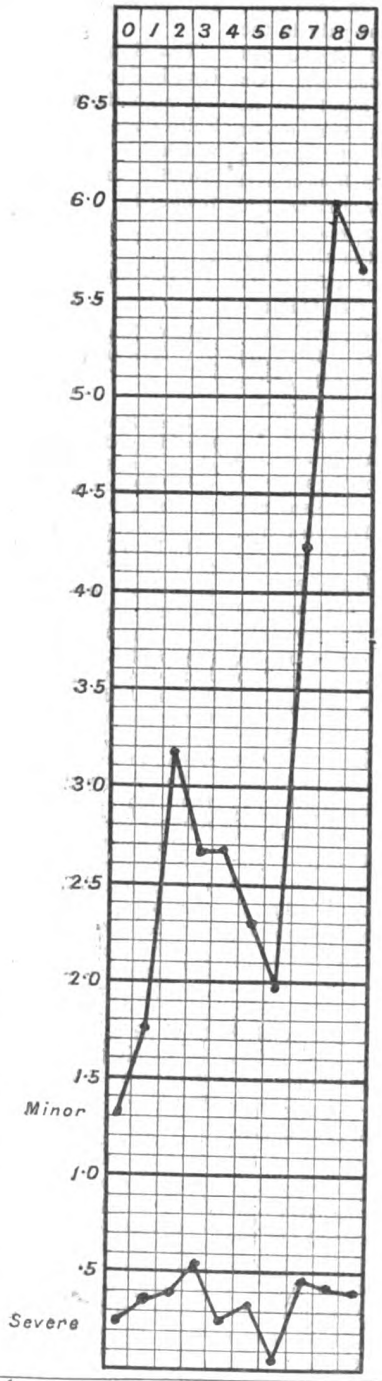


CHART 3.

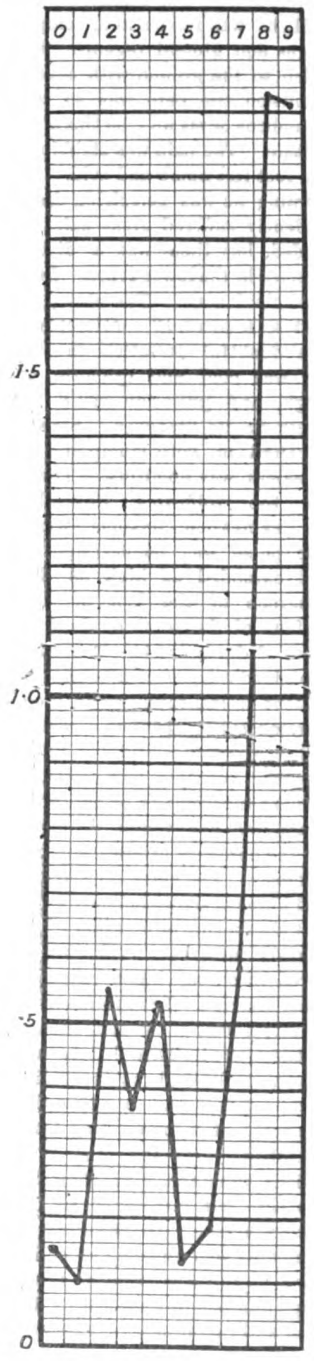


TABLE I. (*Chart 1*).—*Total Accidents and Percentage of Men Employed.*

Year.	Number of men employed.	Number of accidents.	Rate per 100 men.
1900	1,982	31	1·56
1901	1,966	42	2·13
1902	1,972	71	3·60
1903	1,867	60	3·21
1904	1,899	56	2·94
1905	1,741	46	2·64
1906	1,611	33	2·04
1907	1,539	72	4·69
1908	1,452	93	6·40
1909	1,464	89	6·07
Total.	17,493	593	3·38

TABLE II. (*Chart 2*).—*Severe and Minor Accidents, and Percentage of Men Employed.*

	Severe.		Minor.	
Year.	Number.	Rate per 100 men.	Number.	Rate per 100 men.
1900	5	0·25	26	1·31
1901	7	0·35	35	1·77
1902	8	0·40	63	3·19
1903	10	0·53	50	2·67
1904	5	0·26	51	2·68
1905	6	0·34	40	2·30
1906	1	0·06	32	1·98
1907	7	0·47	65	4·22
1908	6	0·41	87	5·99
1909	6	0·40	83	5·66
Total.	61	0·34	532	3·04

TABLE III. (*Chart 3*).—*Percentage of Men Employed Disabled for Two Weeks and less than Three.*

Year.	Cases.	Per 100 men.
1900	3	0·150
1901	2	0·101
1902	11	0·557
1903	7	0·374
1904	10	0·526
1905	2	0·126
1906	3	0·186
1907	9	0·584
1908	28	1·928
1909	28	1·912
Total.	103	0·588

large rise took place, and the percentage jumped from 2·0 to 4·6; and in 1908, the first complete year under the new Act, the percentage, as compared with 1906, increased no less than threefold, and remained nearly as high in 1909.

I was directly interested in one of the quarries concerned, and I made careful inquiries as to the other quarries to see if there had been any alteration in the methods or conditions of working which might have in any way accounted for, or helped towards, this increase in the number of accidents; but whilst the increase had occurred in each one of the quarries, in no case had any alteration been made in the system of working which could have had any tendency to increase the number of accidents.

Table II. shows the total accidents, the severe and the minor being differentiated. Under the heading "Severe" are included all fatal accidents, all accidents involving fractures and dislocations, all injuries to the eye causing permanent impairment of vision, and all multiple injuries.

By this table it will be seen that whilst the severe accidents have not undergone any increase in late years, the whole of the rise in the percentage has been due to the increased number of minor accidents.

The increase in the more trivial accidents noted in Tables I. and II. would certainly suggest that the benefits received under the Compensation Act of 1907 might have had something to do with the alteration in their number. Remembering that the full benefit under the Act is not secured until the disability has lasted a full fortnight, it becomes of interest to see what has been the effect on the number of cases under treatment during this critical period. Table III. accordingly has been constructed to show the percentage of men employed who were under treatment for two weeks and less than three. From this it will be seen that, as compared with the years 1905 and 1906, the years immediately preceding the coming into force of the new Act, the percentage of employees remaining under treatment for 15 days and less than 21 has increased more than tenfold.

In face of these figures it is difficult to avoid coming to the conclusion that the benefits to be obtained under the Workmen's Compensation Act have had a distinct tendency towards increasing the number of cases of accident applying for treatment.

I wish here to say a word on the question of malingering. The impression likely to be created by the foregoing is that some, at any rate, of this increase is due to malingering on the part of the men, but I am convinced that this impression would be a wrong one. I have had occasion to become closely acquainted with a large number of the men supplying the basis of these figures, and without having been medically responsible for the treatment of their injuries I have had a very close knowledge of what they have been suffering from, and I do not know of a single case in which true malingering could have been alleged. The class of men concerned in these records are, for the most part, a highly intelligent, hard-working, and steady lot, in no way inferior to the skilled workmen found in similar occupations all over the country; and although I have only had access to the returns relating to this one occupation I have no reason to doubt that if the returns of any other hazardous trade in the United Kingdom were analysed the result would be very similar.

This being so, the question which has to be faced by us is this: If, in the case of accidents where the lesion is plain and the question of disability is comparatively simple, the number of cases occurring has increased fourfold under the stimulus of the Workmen's Compensation Act, what will be the rate of increase in the number of cases of disease where the disability may depend largely upon the subjective symptoms as experienced by the patient, whose sufferings may possibly be accentuated by the consciousness that, though he be kept from work, there will be a certain amount of money coming in?

And when to this certain increase is added the increase due to patients—instead of, as now, having to go to see their doctor during his hours—being entitled to call their own chosen man in at any time that may suit their own convenience by day or night, and all this tempered by the very human desire to secure full value for money paid, the tale of attendances is likely to mount to heights far beyond any possible present calculation. And yet it is upon an estimate of what the increase in the number of cases is likely to be that the question of "adequate remuneration" must be settled.

It is obvious that *if* 6*s.* a year a head is a fair price for the work under present conditions, should the cases increase fourfold or fivefold, as would seem possible from the figures given above, then the remuneration must also increase in proportion, and the price to be paid must be reckoned in pounds rather than in shillings.

Ramsgate.

INTERNATIONAL HYGIENE EXHIBITION, DRESDEN, 1911.

REPORT OF THE BRITISH COMMITTEE.

THE following highly satisfactory report has just been issued by the British Committee of the International Hygiene Exhibition, Dresden.

The report, which is signed by Sir Thomas Barlow (chairman), Lord Ilkeston (treasurer), and Mr. H. W. Armit (secretary), states that: "The great exhibition at Dresden has served two large purposes. It has been the means of placing on record the scientific achievements in the realms of hygiene from the earliest times up to the present, thus assisting the expert in his endeavour to progress. It has also served a vast humanitarian purpose in instructing millions of lay visitors with regard to health, the dangers associated with the various modes of life, and the best means of avoiding these dangers." We can support this statement, which has already been developed in articles in THE LANCET.[1]

The report then continues:—

"*Its International Character.*

The exhibition was primarily a German undertaking, but the fact that all the civilised nations were invited to coöperate in carrying out the humanitarian object rendered it truly international. Among the States officially represented were Austria, Brazil, China, France, Hungary, Italy, Japan and Formosa, Russia, Spain, and Switzerland. It became a necessity, in order that Great Britain should not earn the reputation of an unfriendly nation, that our country should also join hands with Germany in attempting to improve the health conditions of the whole world.

The Government Commissions.

Each of the States represented had a special pavilion. The respective Governments appointed a Commission and voted a sum of money for the equipment of the section and for the proper management of the same. The Commissions were placed under the care of a Chief Commissioner, save in the case of Japan, which had six Commissioners, acting conjointly. In each section a staff of assistants and clerks were engaged to carry out the business of the section. Sums varying up to £35,000 were voted for the purpose by the various Governments.

The British Section.

Owing to the refusal of the British Government to undertake to organise the British Section this duty devolved on the committee appointed *ad hoc*. The difficulties with which the committee had to contend were partly due to the smallness of the financial support, partly to the lateness of beginning which was occasioned by the difficulty in obtaining funds, and partly by the exclusion of support of Governmental departments. An exception to the last-named was found in the case of the Board of Education, which lent a small but valuable exhibit dealing with the hygiene of schools.

In spite of the necessity of economising by acquiring a small pavilion the British Section was by no means the smallest in regard to the number and variety of exhibits. The scheme followed was to illustrate a large number of British methods of dealing with the various hygienic problems. The exhibits were, for the most part, not prepared with a view to elaborate elegant display, but in practically every case scientific excellence was the primary consideration. A catalogue of the section will be sent on application, enclosing 2*d.* for postage, to any subscriber or member of the committee.

The committee was represented by the secretary, who conducted the work without the assistance of a staff, thereby

[1] THE LANCET, vol. ii., 1911, pp. 547, 712, 1162.

effecting a considerable economy. During the period of the exhibition the committee were continually in receipt of congratulations on the excellence of their work, and the presence of the British section was obviously appreciated in no small degree, as may be gathered from the fact that it was visited by large crowds of visitors, among whom were the leaders of the various hygienic professions of practically every country. Numbers of experts paid repeated visits to the section.

The Financial Statement.

The accounts of the committee have been audited by Mr. F. W. Osborne, certified accountant. His statement is appended below. As will be seen, the sum of £4784 14*s.* 6*d.* was subscribed by the public for the purpose of equipping the section. Not allowing for certain receipts in respect of the sale of furniture, &c., the expenditure of the committee was £4214 13*s.* 2*d*, leaving a balance of £707 3*s.* 8*d.* Of this balance £396 8*s.* have been returned to the guarantors, who, in response to a request, converted their guarantees into subscriptions, and who have now received the sums thus given, back in full. A further balance remains of £310 15*s.* 8*d.*, of which a certain small sum will be required for the purpose of winding up the business of the committee.

The committee suggests that the ultimate balance, which is estimated at £275, should be devoted to a cause which is most closely connected with the object for which the funds were originally given. It appears to this committee that such an object is the Parkes Museum of the Royal Sanitary Institute. It is therefore proposed by the committee that the sum available be given to the Royal Sanitary Institute on the condition that it be used for the improvement of the Parkes Museum. This will be carried into effect if the subscribers consent.

Thanks of the Committee to the Subscribers.

In conclusion, the British Committee of the International Hygiene Exhibition desire to express their best thanks to the generous subscribers, who have enabled them to carry out their task to the evident satisfaction of their German hosts and of the visitors to the exhibition."

Summary of Financial Statement.

We congratulate the committee on their public-spirited action and practical success. They maintained the position of this country as leaders in hygiene with a very insufficient backing and an unfortunate lack of official support. It is unnecessary to publish the vouched account of receipts and expenditure alluded to as "appended below," as a brief statement will cover all the ground. The committee received all told just short of £5000. Some £660 were returned to the guarantors or remain as balance. The expense of maintaining the pavilion, including cost of building electric and water installation, electric fittings, furniture, decorations, lighting, cleaning, attendants' wages, &c., was £1305 10*s.* 3*d.* The management expenses, including salaries, clerical and general expenses, printing, stationery, postages, telegrams, travelling expenses, cost of appeal, and charges incurred in London office amounted to £2151 16*s.* 8*d.* The exhibits' account, including show cases, stands, insurance, transport and packing, was £757 6*s.* 3*d.* The small balance is accounted for by winding up expenses.

THE WEST AFRICAN MEDICAL STAFF: AN INTERESTING DINNER.

THE winter dinner of the West African Medical Staff took place on Friday last, Jan. 19th, at the Trocadéro Restaurant, London, when there was a large gathering of the past and present members of the staff.

Dr. W. T. Prout, C.M.G., of the Liverpool School of Tropical Medicine, late principal medical officer of the West African Medical Service, presided, and the guest of the evening was the Right Hon. L. Harcourt, Secretary of State for the Colonies. Other guests were: Sir Ronald Ross, K.C.B.; Mr. A. Fiddian, Mr. W. A. Robinson, and Mr. D. L. H. Baynes, of the Colonial Office; Mr. Kenneth Millican, of the staff of THE LANCET; Major C. H. Armitage, C.M.G., D.S.O., Chief Commissioner, Northern Territories, Gold Coast; Mr. R. H. Maude, Solicitor-General of the Gold Coast; Dr. A. E. Cooper; and Staff-Surgeon H. Hunt, R.N. The senior members of the staff present included Dr. R. M. Forde, principal medical officer, Sierra Leone; Dr. P. J. Garland, C.M.G., late deputy principal medical officer, Gold Coast; Dr. E. H. Tweedy, deputy principal medical officer, Gold Coast; Dr. F. Manning, deputy principal medical officer, Northern Nigeria; Captain W. H. G. H. Best, provincial medical officer; and Dr. St. George Gray and Dr. W. F. Macfarlane, senior medical officers.

After the toast of the King had been duly honoured, the chairman called upon Dr. Langley Hunt, who was leaving the staff, to propose the toast of prosperity to that staff.

Dr. LANGLEY HUNT said that it would be a difficult matter to over-estimate the importance of the West African Medical Staff as a factor in the civilisation of the colonies concerned, and it was only those who had come into close contact with the natives who could realise the value of gaining their confidence. He looked upon the staff as a most important asset in the development of West Africa, and he was certain their influence would increase, and that they would continue to maintain the high reputation which they had earned.

Dr. PROUT, in proposing the health of their distinguished guest, the Secretary of State for the Colonies, and their other guests, said that he felt it was almost an impertinence to attempt anything in the way of a speech in the presence of one who was accustomed to the flights of oratory which he was credibly assured was the daily nutriment of the House of Commons. They welcomed the Secretary of State not only as the head of the Colonial Office, but because they recognised in him the actual head of the West African Medical Staff—the final arbiter to whom all questions connected with their profession on the coast must finally be referred, and by whom they must be decided. It was a source of gratification to them that he had found time, amidst the many claims of a busy official life, to show his appreciation of their work by honouring them with his presence there. It would be an act of presumption on his part to attempt to refer to the multifarious duties and responsibilities of a Secretary of State for the Colonies, but there was one direction which closely affected them—namely, the attitude which a Colonial Secretary might take up towards the great question of medical research and tropical hygiene; and it was a matter for congratulation that they had had at the Colonial Office a succession of statesmen who had fully realised the vital importance of putting these matters in the foreground. He had himself been associated for over 25 years with the tropics, and had seen a great change come over the attitude of the public and of the official mind. Formerly tropical diseases were regarded with a species of fatalism, which was possibly largely due to the lack of knowledge of their causes. But now, owing to the advances of tropical research, it was realised that diseases in the tropics were as preventable as those in temperate climates, while it was essential for the economic development and future civilisation of the colonies that they should first be made healthy. And among those who had had the privilege of administering the colonies no one had shown a greater interest in all questions of medical research, had given greater encouragement to tropical sanitation, and had shown a more sympathetic appreciation of the work of the medical profession than the present Secretary of State for the Colonies. He (the speaker) had had, as a member of the Advisory Committee to the Colonial Office, many opportunities of becoming personally acquainted with the keen interest which Mr. Harcourt took in these matters, and would instance as an example the Nyasaland Commission on Sleeping Sickness, which was largely due to that gentleman's personal influence. It was often said that the Colonial Office did not do enough and did not give enough money, but they must remember that behind them was a stern and inexorable Treasury, from which it was much less easy to extract money than, say, to extract a recalcitrant molar from the jaw of a negro; and while they, like Oliver Twist, asked for more they were grateful for what Mr. Harcourt had succeeded in doing. If he might for a moment be permitted to dream, he foresaw in the Advisory Committee to the Colonial Office the nucleus of a vast Imperial health organisation, with its headquarters in the seat of the empire, but with ramifications extending all over the globe, reinforced by men of eminence in science in this country, and mainly staffed by those who had had a personal knowledge and experience of the problems to be dealt with in the colonies. There would be departments to deal with different diseases, to collect

statistics, to collate information, and to stimulate research, and the health of that great Empire of which we are so proud would be promoted. Dr. Prout concluded by alluding to the great work done by Sir Ronald Ross and by welcoming the permanent officials of the Colonial Office, because unofficial meetings promoted good feeling and a better understanding between those who worked abroad and those whose work lay at home.

In responding to the toast of his health, the SECRETARY of STATE for the COLONIES said: "I esteem it an especial honour to be the guest of the West African Medical Staff, and I am deeply grateful for the terms in which your chairman has proposed this toast. Never since the days of Daniel has there been witnessed such an act of signal courage as the presence at this moment of a Cabinet Minister at a dinner of doctors. Perhaps I ought to attribute the hospitable immunity I have so far enjoyed to the fact that in West Africa—a land of ordinance rather than of legislation—there is for the present at least no Insurance Bill. I forbear from sketching for you the touching picture of a head of a house sticking stamps upon a missing card for an equally missing Jimmy Johnstone, or a doctor under contract speeding down the unfinished Bauchi line in a special to diagnose a tin-miner for ankylostomiasis. But in all seriousness, and home politics apart, I wish to assure you of the gratification it is to me to have this opportunity of expressing to you, and through you to all your colleagues, my deep gratitude for, and high appreciation of, the splendid services you are rendering in your exile to the cause of humanity and Empire. A Colonial Secretary, whatever his tastes, however deep his ignorance, must, by his daily experience and anxieties, become a 'médecin malgré lui.' I do not, however, admit myself to be wholly an ignoramus. It has been one of my relaxations in life—I do not say it as commendation to you—to have been in medicine a judicious mixture of the quack, the empiric, and the amateur. You will, no doubt, after such a description wonder why I have not long ago appeared before the coroner. The reason is that in the last resort my valour has been so subject to my discretion that in anything more serious than a common cold I have generally sought the advice and paid the fee of those who are qualified to give the one and receive the other. Perhaps I may be permitted the harmless gratification of saying in my own justification that I was one of the first, is not *the* first, now thirty years ago, to experiment with the leaves of Erythroxylon coca (then a little known plant obtained for me from South America by the Editor of THE LANCET), and with the tincture, I myself made the cocaine, to procure, I believe for the first time, the complete and rather alarming anæsthesia of the throat and eye. If I could have retained an exclusive knowledge of its effect on the vocal cords, how much trouble and suffering I might have saved by its secret administration in my present profession to opponents and colleagues.

But, gentlemen, I am not going to inflict anything on you in the way of a speech; this is only the exordium to an imminent peroration. I said just now that in the Colonial Office one must be, or ought to be, Molière's 'involuntary physician.' I say this because perhaps the saddest incidents of an anxious day are the telegrams which pour in on me from all quarters of the globe of yellow fever here, plague there, blackwater fever somewhere else, malaria almost everywhere, sleeping sickness in ill-defined and, I fear, extending regions. There is pathos, as one of your colleagues has written in 'Lyra Nigeria,' in the—

> Thought of the workers of yesterday,
> The men on whose bones we build.

And there is a sardonic truth in his picture of life on the coast as—

> The woof of farce, together bound
> By warp of grimmest Tragedy.

I wish that by my words to you to-night I could bring home to the rest of you who are fighting the great fight in the swamps, the jungle, and the desert, that we, who live at home in so-called ease, chained to an administrative desk, are not unconscious and not unmindful of the hopes, the fears, the struggles, and the triumphs of the pioneers of tropical medicine. As the area of research broadens while it concentrates, your opportunities for distinction and achievement extend with the painstaking record of receptive and perceptive minds. If Condy's fluid could make Colon into a sanatorium, there should be no limit to your aspirations. I am comforted and consoled by the thought that there is in your pursuits, what is essential to a Briton, an element of sport. Foxes may be scarce and hounds deficient, but you can always pursue the stegomyia of yellow fever to its earth in a jam-pot, or have a drive of mosquitoes to be decimated with a syringe. I am not sure that your colleagues in Central Africa may not have to become big game hunters if Glossina morsitans is going to affect the vices of its degenerate brother palpalis.

If I talk lightly after dinner of these incidents, do not imagine that I take anything but a serious view of your difficulties, your duties, and your prospects. If it were not for my official position I should tell you that as a private individual I consider you to be miserably underpaid, but departmentally I avoid any further reference to the stipend you are *willing* to accept. This at least I will say, that the insufficiency of the material rewards you reap seems to have no discouraging influence on the efficiency of your service. You have some experimental advantages and opportunities of practical research which are denied to your stay-at-home colleagues. You are occupying one of the actual fields on which the battles of new methods are being fought and their results tested. In the domain of pure medicine I suppose that it would be true to say that, apart from synthetic drugs, no true prophylactic has been discovered since Jesuit's bark developed into quinine. But the work on other lines of Pasteur, Koch, Almroth Wright, Sir Ronald Ross, and Rubert Boyce—though not commanding by any means universal assent—has opened new avenues of fruitful inquiry and fertile hopes. It may not be what Sir Benjamin Brodie once called 'ideal chemistry,' but it is full of possibilities which may stir the imagination of the most phlegmatic. It is true that much caution is required lest the latest hypotheses should be too readily accepted as postulates, but nearly all great discoveries have advanced through the experimental adoption of unproved—sometimes unprovable—assumptions. You are, by the locality of your practice, specially interested in the study, the treatment, and the cure of yellow fever. I should share the usual and proper fate of amateurs if I ventured upon the dangerous discussion of the differentiation of yellow fever from bilious remittent as distinguished by black vomit, or if I trenched upon the speculation as to semi-immunity derived from adolescent and unrecognised attacks. I only mention these doubts and discussions because I am sure we all feel that all avenues of possible progress should not be closed by prejudice or prejudgment.

Research is not an end—it is only a means. But it is true that it is also one of the pleasures of life to him who knows how to pursue it. The pursuit of truth—even when unsuccessful—has given happiness to generations of great scientists; its attainment is the golden crown reserved for the very few. If a time came when all was known, when investigation and experiment were at an end, half the pleasure and profit of life would have died with the knowledge. We may remain happy, then, in the anticipation of the possession of knowledge yet unwon. The questioning of Nature, the causes of disease, the problems of life and death, will last as long as the generations of mankind. I apologise to you for the excursions of an ignoramus. They have been made not as the speculations of a thinker, but to try to show you that in all that concerns your great profession, in the services you render, in the results you attain, you have a true friend and well-wisher in Downing-street."

Sir RONALD ROSS also briefly responded, and said that progress in tropical sanitation was now really going ahead. It generally took about ten years before any new discovery in medicine was accepted, and it was just over ten years since the transmission of malaria was definitely explained. He thought that though the Americans had done much in the way of the application of tropical sanitation, England, which was first in the field, still showed the way in tropical research and medicine. He was sure that a new era was dawning for West Africa, and he was confident the West African Medical Staff would do all in their power to forward it.

Dr. FORDE then proposed the health of the chairman, who suitably responded, after which an adjournment was made to the ante-room, where the Secretary of State took the opportunity of making the personal acquaintance of members of the staff.

THE INAUGURAL DINNER OF THE MEDICAL OFFICERS' JOINT COMMITTEE.

AT a meeting of the Association of Medical Officers of Health which was held in the summer of 1910 the possibility of forming a federation of all the various societies of part-time medical officers was discussed, and last year a joint permanent committee, consisting of representatives of Poor-law medical officers, public vaccinators, postal medical officers, police surgeons, certifying factory surgeons, and Metropolitan Water Board surgeons, was formed, Dr. Rashell T. Davison, Dr. Crookshank, and Mr. D. A. Belilios being appointed to represent the Association of Medical Officers of Health. The committee so formed may be taken to represent the interests of between 7000 and 8000 medical men, and on Jan. 19th its first annual dinner was held at the Holborn Restaurant. A well-managed dinner and a wisely arranged programme of instrumental and vocal music lightened the proceedings without diverting the attention of those present from their main object—viz., the discussion of the disabilities which threaten the medical profession at the present moment and which call for a wise and united action among part-time medical officers. Mr. H. Bott presided over a representative company.

After the loyal toasts, which were proposed by Mr. BOTT, had been honoured,

Dr. MAJOR GREENWOOD proposed the toast of the evening, "The Joint Committee of the Medical Officers' Associations." He said there never was a time when union among the members of the profession included in this most important toast was more necessary. The part-time medical officer and the general practitioner formed a very large proportion of the profession, and their power would be great if they would stand together. Any jealousy existing between the constituent associations, and between them and the general practitioners who did not hold appointments, must be resolutely suppressed, and the importance of combination kept constantly before them all. Like a destroying angel recent legislation had fallen upon them, and indirectly, if not directly, most of the associations represented at that gathering would be affected. The joint committee could do nothing to avert the evil unless it was backed up by the rank and file of the profession. He most sincerely hoped that the committee would receive whole-hearted support.

Mr. BOTT, in his reply, said he was confident that the joint committee, which had been inaugurated by the Association of Medical Officers of Health, would be a very powerful engine in assisting not only part-time medical officers, but also the general practitioners throughout the country. He then briefly sketched the history of the attempt to dispense with the services of part-time medical officers, who, he believed, served the interests of the public health better than the whole-time men; and pointed out that the part-time men knew the district in which they were engaged, they were more in touch with the community, and their comparative financial independence gave them exceptional opportunities for securing acceptance of their views. If the part-time officer was abolished, sooner or later the medical officer of health would have thrust upon him all the medical appointments of his district without being adequately remunerated. One of the natural expectations of the general practitioner was to secure a public appointment in his own district; but unless the part-time officer and the general practitioner banded themselves together in a community of interest they would find themselves in a very serious position. On all sides an attempt was being made to take away from them their just rights, and he hoped that the opposition to the Insurance Act would be the means of inducing the whole of the profession affected by it to join the Medical Officers' Association. Seven or eight thousand practitioners would be a force that could move any Government. If they were true to themselves they would be adequately paid for their work.

Mr. G. ELLISTON, in proposing "The Constituent Associations," a toast which he coupled with the names of Dr. Davison and the Presidents of the various associations, reiterated the need for a strong combination, remarking that the number of associations represented was an eloquent testimony of interest and future action.

Dr. RASHELL DAVISON, after referring to the inauguration of the public health service, said that if the Public Health Department was satisfactory to the nation it might be claimed that the department was built up by the part-time officers. Mr. Fremantle, the county medical officer of Hertfordshire, and other medical officers of health had supported the Association of Medical Officers of Health in every possible way because they knew the good work that had been done by the part-time medical officer. He hoped that the Association of Medical Officers of Health and the Joint Committee would take important places among the societies of the profession.

Mr. G. H. W. PARKINSON urged that the part-time medical officers should recognise that their interests were common to each other. If any of the part-time departments were successfully attacked the others would also suffer. The time had come when it was absolutely necessary for the general practitioner to unite in the protection of themselves. Branches of the Association of Medical Officers of Health should be formed all over the country, spreading the good work they were doing, strengthening themselves, and helping the general practitioner.

Dr. A. WITHERS GREEN emphasised the views of the previous speakers.

Dr. A. E. COPE exhorted the profession not to allow sanitary matters to be involved in politics. It was very important that one kind of appointment should not be allowed to merge into another kind, for that meant the cutting down of adequate remuneration.

Dr. JOHN MATHIESON also replied.

Dr. C. OWEN FOWLER proposed the toast of "The Guests," coupled with the names of Sir John Collie, Mr. A. G. R. Foulerton, and Mr. Michael H. Taylor.

Sir R. J. COLLIE, in replying, said that out of 70 medical members of the Metropolitan Water Board no less than 68 had joined the Association of Medical Officers of Health.

Mr. FOULERTON said the interests of the public and the profession were identical. If the profession was degraded the public would suffer from a bad service. A State service should be well paid, but a combined general and clinical service with a minimum salary would be a very bad thing for the country. Such a State service would put the standard of professional education back. The part-time officer was an absolutely necessary servant of the State. The medical profession had more influence if it chose to use it than any other profession in the country. With regard to the Insurance Act, the alternative, if the profession gave way, was the appointment of a badly paid public service. If the bulk of the profession stood together this could be defeated. The Joint Committee represented the men who would stand or fall by what happened in the course of the next 12 months, and he hoped the profession would not allow themselves to be misled by specious promises.

Mr. TAYLOR also replied.

Dr. CROOKSHANK, in proposing a vote of thanks to the chairman, explained the idea of the Association of Medical Officers of Health in bringing together the Joint Committee at a dinner, and expressed the general approval of the appointment of Mr. Bott as its chairman.

Mr. BOTT briefly replied and the meeting terminated.

Public Health.

ANNUAL REPORTS OF MEDICAL OFFICERS OF HEALTH.

County of Nottingham.—The population of this county at the date of last year's Census was 344,135; its rate of increase during 1901–10 has been considerably greater than that during 1891–1901. The birth-rate remains high, 29·9 per 1000 in the urban and 25·2 in the rural districts. As in some other counties, this is mainly to be attributed to the presence of a large coal-mining population. The town of Mansfield, with 35,738 inhabitants, showed a birth-rate for 1910 of 33·1, and the adjoining district of Mansfield-Woodhouse a rate as high as 39·8. In reporting on administration of the Midwives Act, Dr. Henry Handford refers to the fact that the new rules of the Central Midwives Board practically take away such powers of suspension as the local supervising authority formerly possessed. He considers that the finding of a *primâ facie* case of negligence or misconduct with subsequent investigation and decision by the Central Midwives Board requires at least three or four months and sometimes longer, and that exceptionally much harm may be done in

the meantime. During 1910 the notices of sending for medical help were 365, out of 4120 maternity cases attended by midwives, or 8·8 per cent. In regard to isolation hospitals the arrangements in this county have for some time been at a standstill, and are likely to remain so in the absence of action by the county authorities to unite districts for hospital purposes. There has been a small but quite definite increase during 1910 both in the number of deaths from pulmonary tuberculosis and in the deaths from other forms of tuberculous disease; the county rates stand at 0·77 and 0·48 respectively. Dealing with tuberculous milk and the inquiries made in Nottinghamshire under the milk clauses of the London Acts Dr. Handford points out that so long as very little is being done in most parts of the county to prevent milk containing tubercle bacilli from being sold, no reasonable complaint can be made of London taking steps to protect itself, but under the procedure adopted there is nothing to prevent the diseased milk which has been rejected by London from being consumed locally or sent to Nottingham or other large towns. He strongly advocates improvement in ventilation of cowsheds, and keeping cows merely in open sheds, and protests against medical officers of health being ridiculed for advising in agricultural matters of this kind. The natural laws which govern human health and disease apply in many respects to the higher mammals also, and are not merely "an appanage of agriculture" where the cow is concerned. Mechanical milkers, which are now in use in several places, prevent dust and dirt falling into the milk pail, but introduce a new danger from the difficulty of cleaning the long india-rubber tubes which form a necessary part of the apparatus. It is the old trouble of the long tube of the babies' feeding-bottle in a new form. The tubes should be sterilised by steam each time they are used. In this, as in several other counties, the direction of sampling under the Food and Drugs Acts and administration in regard to adulteration of food appears to be undertaken by the police, without any reference to the sanitary officers of the county council.

County of Gloucester.— Dr. J. Middleton Martin reviews the attempts which have been made to remove the infectivity of scarlet fever by inunction and swabbing on the lines recommended by Dr. R. Milne, the experimental trial of which in Gloucestershire was advocated by the late Dr. F. T. Bond and adopted in the Cirencester isolation hospital and elsewhere. He concludes that there is great variation in the infectivity of cases, and that our present knowledge is insufficient to decide definitely (apart from patients with discharges) which are actively infective and which are not; apparent success in any line of action would follow if we dealt with the second class of case alone, while failure would similarly be the result of any lack of proper precautions of the first class. In his view it would be most unfortunate if, as appears to have been done in one district at least, those responsible for the protection of the public health advised delay in making proper provision on the very slender evidence thus far adduced in the matter. Dr. Martin insists that the increasing knowledge of the manner in which disease may be carried by house flies makes it now specially necessary for small local authorities to put their arrangements for public scavenging on a better footing or to undertake scavenging which hitherto has been left to householders. It would appear from annual reports that systematic scavenging is only undertaken in ten urban districts and in very few villages in the county.

County of Cambridge.—Dr. F. Robinson expresses much satisfaction at the passing of the Cambridge Water Company's Act, the provisions of which will result in the abandonment of the suspicious sources of supply from the wells in the chalk to which public attention was drawn a few years ago, and the addition of water from a new and satisfactory source. Apart from the areas which this company supplies, there has been considerable activity in dealing with the problems of water-supply in this county, which are particularly difficult, as no large upland surface supplies are available and the risks of pollution of underground water are by no means negligible. A detailed list of the chalk water-supplies in the Newmarket and Linton rural district appears in the report, but would have been of greater value if the opportunities of pollution, as ascertained by local investigation and by the use of fluorescin had been indicated in each instance. During 1910 arrangements were made by the county authorities for bacteriological examinations for the detection of diphtheria in elementary schools. The county council adopts the useful practice of making grants in aid of isolation hospitals in the county, after inspection and recommendation by its medical officer. Dr. Robinson urges the advantage of a central small-pox hospital to serve the whole of Cambridgeshire.

VITAL STATISTICS.

VITAL STATISTICS FOR 1911.

THE following statement shows the birth- and death-rates and the rates of infantile mortality in England and Wales and in certain parts of the country during the year 1911, the figures being provisional:—

—	Annual rates per 1000 living.			Deaths under one year to 1000 births.
	Births.	Deaths.		
		Crude.	Corrected.*	
England and Wales	24·4	14·6	14·6	130
77 great towns including London	25·6	15·5	16·4	140
136 smaller towns	23·4	13·8	14·4	133
England and Wales less the 213 towns	23·4	13·9	13·1	118
London	25·0	15·0	15·8	128

* The corrected death-rates are the rates which would have been recorded had the age and sex constitution of the populations of the several areas been identical with that of England and Wales as enumerated in 1901.

The aggregate death-rates from the principal epidemic diseases have not been calculated in the General Register Office, and cannot therefore be included in the table. On the other hand, figures relating to London have been added to the table.

HEALTH OF ENGLISH TOWNS.

IN the 94 largest English towns having an estimated population of 17,559,219 persons in the middle of this year, 7638 births and 4979 deaths were registered during the week ending Jan. 20th. The annual rate of mortality in these towns, which had been 15·3 and 15·4 per 1000 in the two preceding weeks, declined to 14·8 per 1000 in the week under notice. During the first three weeks of the current quarter the mean annual rate of mortality in these large towns averaged 15·2 per 1000, while in London during the same period the average annual death-rate did not exceed 14·7 per 1000. The annual death-rates last week in the several towns ranged from 5·2 in Gloucester, 8·7 in Acton, 9·1 in Ipswich, 9·4 in Leyton, and 9·8 in Lincoln, to 21·3 in Walsall, 22·7 in Merthyr Tydfil, 25·0 in West Bromwich, 26·3 in Dewsbury, and 30·4 in Dudley.

The 4979 deaths from all causes in the 94 towns were 193 fewer than the number in the previous week, and included 297 which were referred to the principal epidemic diseases, against 313 and 323 in the two preceding weeks. These 297 deaths from the principal epidemic diseases included 81 from whooping-cough, 64 from measles, 60 from diphtheria, 55 from infantile diarrhœal diseases, 19 from scarlet fever, 17 from enteric fever, and 1 from small-pox. The mean annual death-rate from these diseases last week was equal to 0·9 per 1000, against 1·0 in the preceding week. The deaths attributed to whooping-cough, which had been 78 and 88 in the two preceding weeks, fell to 81 last week, and caused the highest annual death-rates of 1·3 in Gateshead, 1·6 in St. Helens, 1·9 in Gillingham and in Merthyr Tydfil, 2·0 in Barnsley, 2·3 in Edmonton, and 2·8 in Walsall. The deaths referred to measles, which had been 83 and 69 in the two previous weeks, further declined to 64 last week; the highest death-rates from this disease were 1·1 in Manchester, 1·3 in Norwich, and 1·4 in Warrington and in Burnley. The fatal cases of diphtheria, which had been 49 and 69 in the two previous weeks, fell last week to 60, and included 15 in London and its suburban districts, 7 in Liverpool, 6 in Leeds, 5 in Manchester, and 3 each in Gillingham, Birmingham, and Leicester. The deaths attributed to infantile diarrhœal diseases numbered

55, against 57 and 58 in the two preceding weeks; 19 deaths were registered in London and its suburban districts, 7 in Liverpool, and 6 in Birmingham. The 19 deaths referred to scarlet fever were equal to the number in the previous week, and included 2 in Birmingham and 2 in Liverpool. The 17 fatal cases of enteric fever, which were 5 fewer than the average in the two preceding weeks, included 4 in London and 2 each in Stoke-on-Trent, Stockport, and Rotherham. The death from small-pox was registered in London.

The number of scarlet fever patients under treatment in the Metropolitan Asylums and in the London Fever Hospital, which had steadily decreased from 2213 to 1762 in the nine preceding weeks, had further declined to 1654 on Saturday last; 162 new cases of this disease were admitted to these institutions during the week, against 162, 193, and 165 in the three preceding weeks. These hospitals also contained on Saturday last 1201 cases of diphtheria, 306 of whooping-cough, 117 of measles, and 47 of enteric fever, but not one of small-pox. The 1217 deaths from all causes recorded in London were 42 less than the number in the previous week, and were equal to an annual death-rate of 14·0 per 1000. The deaths referred to diseases of the respiratory system, which had been 381 and 290 in the two preceding weeks, rose to 303 in the week under notice, but were 64 less than the number registered in the corresponding week of last year.

Of the 4979 deaths in the 94 large towns last week 190 were referred to different forms of violence, and 433 were the subject of coroners' inquests. The causes of 51, or 1·0 per cent., of the deaths registered in the week under notice were not certified either by a registered medical practitioner or by a coroner after inquest. All the causes of death were duly certified in London and its 14 suburban districts, Sheffield, Leeds, Bristol, Bradford, Newcastle-on-Tyne, Portsmouth, Salford, and in 48 other smaller towns. The 51 uncertified causes of death last week included 10 in Birmingham, 4 in Stoke-on-Trent, 4 in Liverpool, and 3 each in Bootle, in St. Helens, in Preston, and in Newport, Mon.

HEALTH OF SCOTCH TOWNS.

In the 18 largest Scotch towns having an estimated population of 2,182,400 persons in the middle of this year, 1024 births and 725 deaths were registered during the week ending Jan. 20th. The annual rate of mortality in these towns, which had been 16·9 and 18·7 per 1000 in the two preceding weeks, declined to 17·3 per 1000 in the week under notice. During the first three weeks of the current quarter the mean annual rate of mortality in these Scotch towns averaged 17·6 per 1000, and was 2·4 per 1000 above that recorded in the 94 large English towns during the same period. The annual death-rates in the several Scotch towns last week ranged from 7·9 in Hamilton, 8·4 in Partick, and 9·2 in Falkirk, to 20·1 in Coatbridge, 22·0 in Greenock, and 26·4 in Ayr.

The 725 deaths from all causes in the 18 Scotch towns were 56 fewer than the number in the previous week, and included 103 which were referred to the principal epidemic diseases, against 83 and 82 in the two preceding weeks. Of these 103 deaths, 56 resulted from measles, 18 from whooping-cough, 10 from diphtheria, 9 from infantile diarrhœal diseases, 6 from scarlet fever, and 4 from enteric fever, but not one from small-pox. These 103 deaths from the principal epidemic diseases were equal to an annual death-rate of 2·5 per 1000, or 1·6 per 1000 above that recorded in the 94 large English towns. The deaths attributed to measles, which had been 34 and 41 in the two preceding weeks, further rose last week to 56, and included 43 in Glasgow, 4 in Greenock, 3 in Aberdeen, and 3 in Clydebank. The deaths referred to whooping-cough, which had been 13 and 12 in the two preceding weeks, rose last week to 18, of which 6 occurred in Aberdeen, 4 in Glasgow, and 2 each in Edinburgh, Greenock, and Ayr. The 10 fatal cases of diphtheria were equal to the number in the previous week, and included 4 in Dundee and 3 in Glasgow. Of the 6 deaths referred to scarlet fever, which were also equal to the number in the previous week, 2 were registered in Leith. Three of the 4 fatal cases of enteric fever occurred in Glasgow and 1 in Falkirk.

The deaths referred to diseases of the respiratory system, which had been 134 and 147 in the two preceding weeks, declined to 120 last week; and 24 deaths were attributed to different forms of violence.

HEALTH OF IRISH TOWNS.

In the 22 town districts of Ireland, having an estimated population of 1,157,014 persons in the middle of this year, 586 births and 483 deaths were registered during the week ending Jan. 20th. The annual rate of mortality in these towns, which had increased from 18·0 to 20·3 per 1000 in the three preceding weeks, further rose to 21·8 per 1000 in the week under review. During the first three weeks of the current quarter the mean annual death-rate in the 22 Irish towns averaged 20·2 per 1000; in the 94 large English towns the mean annual death-rate during the same period did not exceed 15·2, while in the 18 Scotch towns it was equal to 17·6 per 1000. The annual death-rates last week in the several Irish towns were equal to 25·4 in Dublin (against 14·0 in London), 20·7 in Belfast, 19·7 in Cork, 10·2 in Londonderry, 25·8 in Limerick, and 17·1 in Waterford; while in the 16 smallest of the Irish towns the death-rate last week was equal to 19·3 per 1000.

The 483 deaths from all causes in the 22 Irish towns were 33 in excess of the number in the previous week, and included 41 which were referred to the principal epidemic diseases, against 29 and 28 in the two preceding weeks; of these 41 deaths, 19 resulted from whooping-cough, 11 from diarrhœal diseases, 3 from enteric fever, 3 from scarlet fever, 3 from diphtheria, and 2 from measles, but not one from small-pox. These 41 deaths from the principal epidemic diseases were equal to an annual death-rate of 1·8 per 1000; the death-rate from these diseases last week did not exceed 0·9 in the 94 English towns, while in the 18 Scotch towns it was equal to 2·5 per 1000. The deaths attributed to whooping cough, which had been 4 and 11 in the two preceding weeks, further rose to 19 last week, of which number 12 were recorded in Belfast, 6 in Dublin, and 1 in Dundalk. The deaths referred to diarrhœal diseases, which had been 6 and 4 in the two preceding weeks, rose to 11 last week, and included 9 of infants under two years of age; 4 deaths were registered in Dublin and 4 in Belfast. Of the 3 fatal cases of diphtheria 2 occurred in Dublin and 1 in Dundalk. The 3 deaths from enteric fever, the 2 deaths from measles, and the 3 deaths from scarlet fever were all recorded in Dublin.

The deaths referred to diseases of the respiratory system, which had increased from 83 to 109 in the four preceding weeks, further rose to 111 last week. Of the 483 deaths from all causes in the 22 Irish towns, 174, or 36 per cent., were recorded in public institutions, and 13 were attributed to different forms of violence. The causes of 20, or 4·2 per cent., of the total deaths in the week under notice were not certified either by a registered medical practitioner or by a coroner after inquest; in the 94 English towns the proportion of uncertified causes of death last week did not exceed 1·0 per cent.

THE SERVICES.

ROYAL ARMY MEDICAL COLLEGE.

Major Harold B. Fawcus, Royal Army Medical Corps, to be an Assistant Professor, vice Major C. F. Wanhill, whose tenure of that appointment has expired (dated Jan. 1st, 1912).

ROYAL ARMY MEDICAL CORPS.

Supernumerary Lieutenant-Colonel Charles C. Reilly is restored to the Establishment, vice H. C. Thurston, C.M.G., Supernumerary (dated Dec. 20th, 1911).

Major Arthur E. Thorp retires, receiving a gratuity (dated Jan. 20th, 1912).

Captain Herbert O M. Beadnell, from the Half-pay List, is restored to the Establishment (dated Jan. 17th, 1912).

Colonel S C. B. Robinson, principal medical officer of the First (Peshawar) Division from Cherat, has taken up duty at Peshawar. Lieutenant-Colonel J. M. F. Shine has arrived home on duty from India on completion of his tour of foreign service. Lieutenant-Colonel S. Hickson, on return from South Africa, has been posted to the Aldershot Command and appointed to hold charge of the Cambridge Hospital, vice Lieutenant-Colonel F. H. Treherne, who has embarked for India on promotion. Lieutenant-Colonel E. A.

Burnside, from Golden Hill, has taken up duty with the Ninth (Secunderabad) Division of the Southern Army in India. Lieutenant-Colonel C. A. Lane, at present holding charge of the Military Hospital at Hounslow, has been placed under orders to proceed to India, and on arrival will be appointed to command the Station Hospital at Madras. Lieutenant-Colonel M. L. Hearn has taken up duty as Senior Medical Officer in Ceylon in succession to Lieutenant-Colonel N. Manders, tour expired. Lieutenant-Colonel C. J. MacDonald has taken up duty as Senior Medical Officer to the Military Forces in North China, vice Lieutenant-Colonel J. M. Irwin. Lieutenant-Colonel H. J. Pocock has been transferred from Nowshera to command the Station Hospital at Sialkot. Lieutenant-Colonel B. J. Inniss, from Gravesend, has taken over charge of the Military Hospital at Belfast.

Major C. F. Wanhill, assistant professor of military hygiene at the Royal Army Medical Corps College, Grosvenor-road, has embarked for a tour of service with the Southern Army in India. Major H. P. Johnson has been transferred from Bloemfontein to the Military Hospital at Wynberg. Major J. McD. McCarthy, from Naini Tal, has taken up duty at Rawal Pindi. Major C. W. Reilly, at present commanding the Station Hospital at Dum Dum, Bengal Presidency, has been detailed as Senior Medical Officer on board the transport s.s. *Rohilla*, leaving Karachi for Southampton on Jan. 31st. Major J. P. Silver has been transferred from the Scottish Command to the Irish Command. Major H. B. Fawcus has arrived home from South Africa for duty. Major W. T. Mould, from Dover, has arrived in India for a tour of foreign service. Major W. R. Blackwell, from Lucknow, has taken up duty at Delhi. Major F. W. Begbie, from Colchester, has been granted one month's leave of absence. Major J. A. Hartigan, from Malta, has joined for duty at Tientsin. Major C. H. Straton, specialist sanitary officer, North Thames area of the Eastern Command, has been placed under orders for a tour of service in South Africa, and on arrival will be appointed Specialist Sanitary Officer.

H.E. the Commander-in-Chief in India has sanctioned one year's extension of tour of foreign service of Captain T. B. Moriarty. Captain A. F. Weston, from the Royal Victoria Hospital, Netley, has joined for duty at Jamaica. Captain C. D. Myles has been transferred from Gosport to the Military Hospital at Chester. Captain E. S. Worthington, M.V.O., has taken up duty in Canada as medical officer on the personal staff of Field-Marshal H.R.H. the Duke of Connaught and Strathearn, K.G., K.T., K.P., G.C.B., G.C.S.I., G.C.M.G., G.C.I.E., G.C.V.O., Governor and Commander-in-Chief of the Dominion of Canada. Captain E. W. Powell and Captain G. W. W. Ware have arrived home from India on duty. Captain J. S. McCombe has been granted eight months' leave of absence home from India with effect from March 1st. Captain J. E. H. Gatt, from Allahabad, has been appointed to the Station Hospital at Benares. Captain F. P. Lauder has been transferred from Youghal to Tralee. Captain J. W. S. Seccombe, on return from a tour of duty in India, has been posted to the London District. Captain E. C. Whitehead, from Edinburgh, has been appointed for duty at Glencorse. Captain B. Johnson has been transferred from the Ninth (Secunderabad) Division to Burma. Captain H. F. Shea has been appointed Specialist in Advanced Operative Surgery to the Third (Lahore) Division. Captain A. H. Heslop has been granted eight months' leave of absence home from India with effect from Jan. 31st. Captain F. A. Stephens has embarked for a tour of service in India. Captain T. H. Scott, from Jullunder, has taken up duty at the Military Hospital, Ferozopore.

Lieutenant T. H. Dickson, on completion of relief duty at Galway, has joined at Dublin. Lieutenant C. T. V. Benson, from Aldershot, has taken up duty at Deepcut. Lieutenant P. S. Tomlinson, from the Military Hospital at Tidworth, has been transferred to Bulford Camp, Salisbury Plain. The undermentioned officers have been ordered to Ireland, and on arrival will be posted as noted: Lieutenants E. S. Calthorp and R. T. Vivian to the Dublin District, and Lieutenants H. J. G. Wells and W. L. Webster to the Cork District.

INDIAN MEDICAL SERVICE.

Colonel C. F. Willis, C.B., principal medical officer of the Fifth (Mhow) Division, has taken up duty at Delhi. Lieutenant-Colonel W. R. Edwards, C.M.G., agency surgeon and chief medical officer in the North-West Frontier Province, has arrived home on one year's leave of absence from India. Lieutenant-Colonel J. M. Crawford, civil surgeon, of Benares, has been appointed to hold Visiting Medical Charge during the absence on leave of Captain H. R. Nutt.

Major C. R. Green, Bengal Presidency, has embarked for India on the termination of his leave of absence. H.E. the Governor of Bombay in Council has been pleased to appoint Major J. L. Marjoribanks, on relief, to officiate as Presidency Surgeon, Second District, Marine Surgeon, and Superintendent of the Lunatic Asylum at Colaba, in succession to Major J. H. McDonald. Major A. W. Tuke has taken up duty at Bombay Medical College as officiating Professor of Midwifery and in charge of Bai Motlibar and Sir D. M. Petit Hospitals during the absence on leave of Major S. C. Evans. Major H. Innes has been appointed Civil Surgeon at Shillong. Major J. W. D. Megaw has been granted privilege leave combined with furlough for 15 months. Major A. W. R. Cochrane, Bengal Presidency, has arrived home on leave of absence from India. Major W. Selby has been selected for appointment as Principal of the Medical College at Lucknow. The services of Major D. N. Anderson, officiating civil surgeon, have been placed at the disposal of the Government of India, Army Department. Major J. W. Cornwall has been granted combined privileged leave and furlough home from India for two years.

Captain A. G. Coullie has been appointed Specialist in Advanced Operative Surgery, Third (Lahore) Division. Captain J. W. McCoy has returned to India on the expiration of his leave. Captain W. MacKelvie, officiating civil surgeon at Darbhanga, has been granted one year's furlough. Captain F. P. Mackie, officiating civil surgeon at Fategarh, has been transferred to Bijnor. Captain H. C. Keates has relinquished charge of the duties of Superintendent of the Jullundur District Jail. Captain K. G. Gharpurey has joined for duty at Larkana as Civil Surgeon. Captain H. P. Cook has been granted an extension of his leave of absence by the Right Honourable the Secretary of State for India. Captain J. F. James has been appointed Civil Surgeon at Dhubri. The services of Captain S. B. Mehta, plague medical officer at Rohtak, have been replaced at the disposal of the Government of India, Education Department. Captain W. Tarr has been appointed a Civil Surgeon of the Second Class in the Central Provinces, vice Major P. F. Chapman, promoted First-class Civil Surgeon. Captain A. E. Grisewood has taken up duty as Plague Medical Officer at Delhi. Captain A. J. H. Russell has arrived home on leave of absence from India.

Lieutenant M. A. Rabman has been selected for appointment as Specialist in Otology, Laryngology, and Rhinology.

DEATHS IN THE SERVICES.

Brigade-Surgeon George Perry, late Coldstream Guards, at Sidmouth, on Jan. 20th, in his seventy-ninth year. He received his first commission in the army in 1855, and served in the Crimean campaign, and was present at the siege and fall of Sevastopol (mentioned in despatches). In 1882 he served with the Egyptian expedition and took part in the action of Mahuta and the battle of Tel-el-Kebir. He retired in 1888.

Surgeon-General Sir John Andrews Woolfreys, K.C.B., C.M.G., K.H.P., at his residence at Wells, in his eighty-ninth year. He entered the service in 1847 and retired in 1883. He served in the Ashanti war, 1873–74, as principal medical officer (mentioned in despatches, medal and clasp, and promoted to the rank of deputy surgeon-general). In South Africa, 1877–79, he served throughout the Galeka and Gaika rebellions, the Zulu war, and the Sekukuni campaign (mentioned in despatches).

SPECIAL RESERVE OF OFFICERS.

Royal Army Medical Corps.

Lieutenant Charles W. C. Myles is confirmed in his rank.

The undermentioned to be Lieutenants (on probation): Gilbert Malise Graham (dated Dec. 20th, 1911); and Cadet Colour-Serjeant Robert Glen Shaw, from the Edinburgh University Contingent, Officers Training Corps (dated Dec. 22nd, 1911).

TERRITORIAL FORCE.

4th Battalion, The Duke of Edinburgh's (Wiltshire Regiment): Surgeon-Major and Honorary Surgeon-Lieutenant-Colonel Herbert P. Tayler resigns his commission, and is granted permission to retain his rank and to wear the prescribed uniform (dated Jan. 20th, 1912).

Royal Army Medical Corps.

2nd East Lancashire Field Ambulance, Royal Army Medical Corps: Major William B. Pritchard to be Lieutenant-Colonel (dated Nov. 18th, 1911).

3rd East Lancashire Field Ambulance, Royal Army Medical Corps: Lieutenant George A. Jelly resigns his commission (dated Jan. 20th, 1912).

2nd Welsh Field Ambulance, Royal Army Medical Corps: Lieutenant Henry John Dunbar, from the 3rd Lowland Field Ambulance, Royal Army Medical Corps, to be Lieutenant (dated Jan. 20th, 1912).

4th London General Hospital, Royal Army Medical Corps: Major Sir Hugh R. Beevor, Bart., resigns his commission (dated Jan. 20th, 1912).

2nd Western General Hospital, Royal Army Medical Corps: Lieutenant Henry Herbert Rayner, from the 3rd East Lancashire Field Ambulance, Royal Army Medical Corps, to be Captain (dated Jan. 20th, 1912).

For Attachment to Units other than Medical Units.—Surgeon-Captain Robert John Richard Cobden Simons, from the Glamorgan Royal Garrison Artillery, to be Captain (dated Jan. 20th, 1912).

Unattached List for the Territorial Force.—Captain Henry Wade (serving with the Edinburgh University Contingent, Senior Division, Officers' Training Corps) resigns his commission (dated Jan. 20th, 1912).

TERRITORIAL DECORATION.

The King has conferred the Territorial Decoration upon the undermentioned officers of the Territorial Force, who have been duly recommended under the terms of the Royal Warrant dated August 17th, 1908:—

4th (Cumberland and Westmorland) Battalion, The Border Regiment: Surgeon-Major William Symington.

Royal Army Medical Corps.

1st Lowland Field Ambulance, Royal Army Medical Corps: Lieutenant Colonel William Francis Somerville. 1st Eastern General Hospital, Royal Army Medical Corps: Colonel Joseph Griffiths.

SOLDIERS' RATIONS.

The War Office has decided that the diet of soldiers may be varied at the discretion of commanding officers by the issue of rabbits in lieu of fresh beef once a week, provided that any extra expense is made good regimentally. A somewhat similar variation was tried last year when fresh pork was offered instead of fresh beef.

Correspondence.

"Audi alteram partem."

THE MEDICAL PROFESSION AND THE NATIONAL INSURANCE ACT.

To the Editor of THE LANCET.

SIR,—There cannot be the least question of the great resentment of the medical profession at the way in which this measure has been introduced, and the light way in which the vital interests of the profession have been spoken of by politicians. Such resentment is perfectly natural, but there is undoubted danger lest the feeling of irritation should blind the eyes of the members of the profession to the real facts of the situation. Many seem to be acting and arguing as if we were dealing with a Bill instead of an Act, and others seem to forget that the Act is a very different thing from the Bill which was introduced, thanks to the determined attitude taken by members of the profession in all parts of the country. We have not gained all we wanted, but we are standing to lose even that which we have gained unless we set ourselves to understand the Act and leave no stone unturned to obtain for the profession conditions under which alone it is possible to give an efficient medical service to the poorer classes of the country and at the same time to do justice to the profession.

There is another point also which seems to be overlooked. Contract practice as now carried on is an evil of the greatest magnitude, and involves an injustice to the profession which can hardly be over-estimated. There seems to be a possibility at the present moment of righting some of these wrongs if the profession resolutely act together. Therefore it is of the utmost moment that we should get together for business discussions and leave aside mutual recriminations. It seems to me that one mistake which is being made is the failure to recognise the different issues with which we have to deal at the present moment, and I would like to distinguish these by the two expressions, *Terms* and *Tactics*.

(1) We want, on the one hand, to find out what are the *Terms* under which the medical profession will accept service under the Insurance Act. It will no doubt be replied that our terms are the six cardinal points, but these need to be greatly elaborated before they can be brought to any practical issue. We claim that "the method of remuneration" should "be according to the majority of the members of the medical profession in any particular district," and the "method of remuneration" is to be what the medical profession considers adequate. But the question is, What method of remuneration will the profession demand? Is it to be a capitation fee, or payment for work done? And again, in either contingency, what payment is to be regarded as adequate? It is such problems as these that ought to engage the earnest attention of every body of medical men all over the country, for it is useless for us to abuse either the Government, or the Insurance Commissioners, or even the Friendly Societies if we do not know what we want under these heads. I suppose that the result of inquiries will show that the members of the medical profession in different areas desire different methods of remuneration, and that therefore we shall have to come to the system laid down in the Act—viz., that of local option in each district.

(2) Turning now from the question of *Terms* we come to the question of *Tactics*, and it is under this head that I should like to make some special comments.

(*a*) We ought to realise, in the first place, that very large powers have been given to the Insurance Commissioners, and this is very clearly shown in the pamphlet, "A Guide to the Insurance Act," by Mr. Thomas Smith, reviewed in your columns last week. He says:—

> So wide are the powers conferred upon the Commissioners by the Act, that it is hardly an exaggeration to say that they themselves are empowered to make a new Act of Parliament. The framework of the scheme is, admittedly, contained in the Act under consideration, but upon the regulations to be drawn up by the Commissioners will depend the success or failure of the measure in its daily construction and administration.

No one can doubt the truth of this statement who has seriously studied the Act. If, then, this is the case there is surely no time to be lost, first in agreeing as to the regulations which we should like the Insurance Commissioners to frame, and then in bringing all possible pressure to bear to obtain these. I have no doubt that the central authorities of the British Medical Association are doing their best to consider these points, but if they are to meet votes of censure and to spend their time in replying to hostile criticisms concerning incidents which are now matters of history, we may lose the great opportunity which we now have. I have heard some indignation expressed because apparently some representatives of the Friendly Societies have had a conference with the Insurance Commissioners. The fact is that these men are masters of *Tactics*, and if we want to get justice for our cause it would be well for us to take a leaf out of their book.

(*b*) The next point of importance in my opinion consists in utilising the power to form Local Medical Committees, and I am inclined to think that the clause of the Act which deals with this is the pivot upon which the power of the medical profession under the Act is to be exercised. If the medical practitioners in each locality act together on such a committee, and there are no splits, and if the various Local Committees act in concert with one another, then the future of the Insurance Act lies in our hands, for we can now dictate our terms. It is quite true that it may be some time before the Local Insurance Committees can be formed with which these local medical committees could be brought into contact, but we want to anticipate the formation of these committees, and to be ready with our nominees to represent us on these committees and to arrange the terms upon which the local profession would be willing to act. These medical committees will have a big task before them, and there is no time to be lost in getting together for this purpose. Of

course, no panel must be formed anywhere until the rightful terms of the profession are accepted all over the country, but we shall not compromise our position by forming the local medical committees.

(c) Much objection has been raised to the Act because of the inadequate representation of the medical profession on the various administrative bodies, but I think that with local Medical Committees safeguarding the interests of the profession it will only be necessary to have representatives on the committees. I believe that it will be difficult to get general practitioners to devote the time which will be involved in filling the posts now open to medical men on these committees, and it is a mistake to think that medical men could be found in large numbers to give the time that will be required to attend to the detail of these insurance committees.

I trust that these matters may be taken into the most careful consideration. I am, Sir, yours faithfully,

Leyton, E., Jan. 22nd, 1912. CHARLES F. HARFORD.

To the Editor of THE LANCET.

SIR,—I am sure my friend Dr. Major Greenwood will forgive me for not at present entering further into the controversy concerning the merits of the *per capita* or per attendance systems of payment for medical service. He and I are well aware how impossible it is to induce the enthusiasts for either method to look favourably upon the other. We both took part in formulating the compromise which is embodied in the "local option" clause as to method of remuneration amongst the so-called six cardinal principles, and I am sure neither of us desires to interfere in any way with that compromise or to do anything that might for a moment be regarded as a weakening of the profession's attitude towards its six-point programme.

My recent intervention in your columns and elsewhere has been entirely due to the fact that two influential members of the profession, no doubt in ignorance of the difficulty with which the compromise had been arrived at, had written urging upon their colleagues a course which, if persisted in, must lead to the abandonment of one of the cardinal principles and cause serious dissension in our ranks. Until "local option" as to method of remuneration is firmly established in the Commissioners' regulations it is unsafe for the medical profession to reopen their discussions on the merits of the respective systems.

I am, Sir, yours faithfully,

Jan. 22nd, 1912. LAURISTON E. SHAW.

To the Editor of THE LANCET.

SIR,—It is with great dismay that I note so little protest is made concerning our independence, the most important point of all, under the Insurance Act. As the Act stands three-fifths of the Local Insurance Committee is composed of members of Friendly Societies and Post Office contributors; thus, technically, this seems to satisfy one "cardinal point"; but as a matter of actual practice and in effect is it not clearly evident that we are as badly off (or worse) as if we were entirely under the control of Friendly Societies? This point the council of the British Medical Association, if it claims to represent the profession, must immediately and definitely insist on being rectified.

Surely the silence of the Friendly Societies on this point speaks volumes, for they know full well that if we are fools enough to work under the Act without a drastic alteration on this particular point at least, no matter what our remuneration may be, they will be able to dictate to us. The newspapers may be full of accounts of medical men being hauled up before these tribunals. Are we content, on matters of discipline, to be subject to such bodies with only a right of appeal to the Commissioners? Surely the deciding body should be the General Medical Council.

Can anyone expect any self-respecting father to permit his son to enter our profession where service under such debasing conditions exists? I believe this Act to be the "beginning of of the end" for our profession as an honourable calling.

I am, Sir, yours faithfully,

Manchester, Jan. 22nd, 1912. E. T. LARKAM.

RETROGRADE SANITATION.

To the Editor of THE LANCET.

SIR,—In spite of the pressure of other business, last Session the Government found time to pass a "Factories and Workshops Act," 1911, and Mr. McKenna has just issued some "Regulations as to Humidity and Ventilation in Cotton Cloth Factories" (Statutory Rules and Orders, 1911, No. 120). It is headed "Health and Safety," but after careful perusal it is only safe to conclude that those portions of these regulations relating to ventilation can but tend to deterioration in the health of the operatives.

It is true that these rules contain certain orders relating to humidity and the care of clothes, which had been previously in force, but which are now dealt with in more detail and with greater definiteness of language than had been done in previous regulations, and this is truly an excellent thing. When, however, it is seen that, in reference to ventilation, the standard of purity of the air is greatly reduced, the conclusion will be reached that a grievous mistake (or I would rather say a crime against the laws of health) has been thereby committed.

In Regulation 9 of this document it is enacted that "In every *humid shed* and in every *dry shed* the arrangements for ventilation shall be such that at no time during working hours shall the proportion of carbon dioxide in the air, in any portion of the shed, exceed the limit specified below for that shed, namely:—

for *humid sheds* 8 } parts by volume of carbon dioxide per 10,000 of air
for *dry sheds* 11 } in excess of the proportion in the outside air at the time.

Now, in the regulations previously in force the amount of carbon dioxide allowed per 10,000 volumes of air had only been five volumes in the case of humid sheds, and the same standard was recommended by the then Home Office Committee for dry sheds as well. It will therefore be seen at a glance how great a fall in the purity of the air in all these sheds will follow this enactment. The history of the last-named standard is briefly as follows.

In the year 1896–97 a Home Office Committee was appointed to inquire into the conditions of humid sheds. It consisted of Sir H. Roscoe, F.R.S., the late Sir William Roberts, F.R.S., and myself, and among other matters requiring attention we found that the amount of ventilation in these workplaces required by statute was insufficient. In our report to the Home Office we therefore recommended that as a measure of the respiratory impurity no greater proportion than nine volumes of carbon dioxide per 10,000 volumes of air (i.e., five volumes more than was contained in the outer air) should be allowed in the sheds, and that the ventilating arrangements should be sufficient to secure the general attainment of this standard. We pointed out that "this limit will secure an amount of ventilation corresponding to about 2000 c.f. per head per hour, and your committee believe that such a requirement would bring about a material improvement in the health and comfort of the workers." This proposal was accepted without protest by both masters and workpeople.

Two years later, in 1899, Mr. Williams, the inspector under the Cotton Cloth Factories Acts, noted that "the scientific tests had already led to a great improvement in the working conditions of the operatives, and that it had also done much to promote an intelligent interest and a more exact knowledge on the subject of ventilation." He also drew up the following table showing the results before and after the improved means of ventilation had been installed.

Table showing Approximate Number of Volumes of Carbon Dioxide per 10,000 due to Respiration.

Before improvements.	After.	Before improvements.	After.
8·0	3·1	9·2	3·8
6·8	4·2	11·	3·6
10·7	3·1	7·7	2·4
11·3	2·6	10·4	3·7
6·9	3·0	7·8	2·4
9·0	4·2		

Mr. Williams further remarked that the health of the operatives had greatly improved and the sickness-rate had been much smaller.

All the evidence drawn from public health annals shows that this final result of improved ventilation is only what

might have been anticipated, and I greatly fear that the new and degraded standard will lead to more ill-health, to respiratory disease, and especially to an increase in the number of consumptives.

I am, Sir, yours faithfully,

Bournemouth, Jan. 22nd, 1912. ARTHUR RANSOME.

INTESTINAL MYIASIS.

To the Editor of THE LANCET.

SIR,—The addition of a few references to Dr. E. A. Cockayne's bibliography in his interesting paper on Intestinal Myiasis would make it more complete. I have seen five such cases in infants, in four of which the larvæ were present in the stools and in one they were found in the vomit. The particular varieties were not identified.

I am, Sir, yours faithfully,

Park-street, W., Jan. 23rd, 1912. EDMUND CAUTLEY.

Additional bibliography.—1. Cohn: Deutsche Medicinische Wochenschrift, March 24th, 1898; age 3 months; larvæ in vomit and fæces. 2. Keenan: THE LANCET, 1903, vol. i., p. 200; infant; larvæ in vomit. 3. S. M. Lawrence: Brit. Med. Jour., 1910, vol. ii., p. 376. 4. A. E. May: Brit. Med. Jour., 1906, vol. ii., p. 180. 5. A. B. Northgate: Brit. Med. Jour., 1906, vol. ii., p. 180. 6. J. Smyth: THE LANCET, 1902, vol. ii., p. 1487. The last four cases consisted of a girl, 9 years old, and three males, an adult, a boy, and an infant with larvæ in the stools.

To the Editor of THE LANCET.

SIR,—Dr. E. A. Cockayne in his interesting article in THE LANCET of Jan. 20th on "Intestinal Myiasis" says: "There is still a little doubt as to how the larvæ gain access to the intestinal tract," and then mentions various articles of food, among which milk is conspicuous by its absence. I have on several occasions observed that the ovipositor of a fly drowned in milk has been extruded, and I have little doubt that the eggs were in the milk, though I did not search for them. I have recorded observations that when temperature conditions were favourable, *fermentation* of food stuffs was not an essential factor in the growth of the larvæ of the house fly. In cases of intestinal myiasis the eggs or young larvæ might easily be introduced in milk from which a drowned fly has been removed—a not infrequent incident in many homes in the "fly" months.

Flies will live through the winter in a warm kitchen or bakehouse, and milk is frequently kept in such places. The colour of the milk prevents the ova or larvæ being observed without careful straining and minute examination. Even the extraordinary cases in which larvæ have been passed for months or years may also thus be explained.

I am, Sir, yours faithfully,

Norwich, Jan. 20th, 1912. J. T. C. NASH.

SENSORY DISTURBANCES AND CEREBRAL LESIONS.

To the Editor of THE LANCET.

SIR,—Among the many conclusions arrived at by Dr. Henry Head and Dr. Gordon Holmes in their studies of the sensory disturbances resulting from cerebral lesions,[1] I find none more interesting than that which assigns to the optic thalamus, or rather the "essential organ" of this structure, a leading rôle in the genesis of feeling (affective) tone. This element of feeling tone not only enters largely into the massive sensations of pleasure and discomfort, but also into emotional feelings, such as fear, joy, anger, gloom; it constitutes, moreover, the essential ingredient of mental temperament and of moods.

The suggestion that feeling tone is largely determined by the activity of a limited portion of brain tissue may to some appear somewhat startling. When, however, we call to mind that a creature with a brain no larger than a pea, such as a mouse or small bird, is capable of as highly developed affective tone as man himself, it becomes evident (1) that a diminutive mass of brain tissue suffices for the genesis of affective tone; and (2) that the enormous development of the cerebral hemispheres in the higher mammals is not for the purpose of adding to feeling capacity in its grosser aspects, but, on the contrary, is essentially bound up with intellectual development—a conclusion, needless to say, in entire harmony with the views of Dr. Head and Dr. Holmes as to the rôle which the cerebral hemispheres play in sensation.

The identification of feeling tone with the optic thalamus helps us to understand the anatomico-physiological mechanism pertaining to moods and mental temperament. If these depend, as they undoubtedly largely do, on feeling tone, and if feeling tone is closely associated with the activity of the optic thalamus, then moods and temperament must be closely dependent upon the activity of this organ. Now feeling tone is profoundly influenced by the state of the blood (witness the change in the affective nature during the rutting time, and as the result of the action of such substances as alcohol and morphine), and we therefore seem justified in assuming that temperament and moods depend in large measure upon the manner in which that subtly complex and ever-changing fluid, the blood, plays upon a particular part of the mind instrument—to wit, the optic thalamus.

I may here remark parenthetically that there is strong evidence in favour of the conclusion that differences in mental temperament essentially depend, not upon differences in brain organisation, but upon differences in blood composition; not upon differences in the structure of the mind instrument, but upon differences in the way that instrument is played upon by the blood.

May I, Sir, in conclusion suggest that the authors of these remarkable articles might throw still more light on a subject they have done so much to illuminate, by investigating the effects on the various forms of sensibility of substances such as alcohol and morphine?

I am, Sir, yours faithfully,

Wimpole-street, Jan. 20th, 1912. HARRY CAMPBELL.

[1] THE LANCET, Jan. 6th (p. 1), 13th (p. 79), and 20th (p. 144), 1912.

NON-TUBERCULOUS MILK IN GUERNSEY.

To the Editor of THE LANCET.

SIR,—The recent report of the Royal Commission upon Tuberculosis has called attention to the fact that a large proportion of the tuberculosis of children and young people is due to the consumption of milk from cows affected with this disease. Until 1906 tuberculosis was apparently unknown amongst Guernsey cattle, but it was then introduced by cattle re-imported after having been to England for exhibition. This re-importation is now forbidden, and drastic laws have been passed compelling the slaughter of all infected cattle and granting State compensation. As a result the disease has been practically stamped out, and of the 1364 animals exported during the past three years, all of which were tested with tuberculin, only six were found to be affected. This gives tuberculosis a rate of under ½ per cent. compared with the estimate of Sir John McFadyean, principal of the Royal Veterinary College, London, of 20 per cent. of adult cows in England.

The forms of human tuberculosis chiefly caused by bovine tuberculosis (tubercular glands of neck, abdominal tuberculosis, and lupus) are consequently exceedingly rare in the island of Guernsey. Channel Islands' cows give the richest milk in the world, the average of fat for Guernsey cattle being over 60 per cent. above the English legal standard for fat. It is impossible to over-rate the importance, especially where children and delicate persons are concerned, of milk so rich in butter fat, and above all so free from the germs of the scourge of tuberculosis.—I am, Sir, yours faithfully,

HENRY DRAPER BISHOP,
Medical Officer of Health, States of Guernsey.

Health Office, Guernsey, Jan. 20th, 1912.

THE FINSBURY MEDICAL SOCIETY AND TUBERCULOSIS DISPENSARIES.

To the Editor of THE LANCET.

SIR,—At a meeting of the Finsbury Medical Society held on Friday, Jan. 19th, the following resolution was unanimously passed:—

That the Finsbury Medical Society presents strenuous opposition to the establishment of a tuberculosis dispensary in Finsbury on the lines proposed by the Central Committee for the Establishment of Tuberculosis Dispensaries.

I am, Sir, yours faithfully,

W. FRANCIS ROE, Hon. Sec.

Northampton-square, E.C., Jan. 20th, 1912.

PSYCHOTHERAPY AND GENERAL MEDICINE.

To the Editor of THE LANCET.

SIR,—I have read with much interest Dr. W. P. S. Branson's paper in THE LANCET of Jan. 13th, p. 92, on "Psychotherapy and General Medicine." But I cannot help thinking that whilst he has done a good service by drawing attention to a much neglected branch of medicine, he has, unwittingly, no doubt, minimised the rightful position of psychic treatment in therapeutics. In the first place, Dr. Branson has confined himself to that simple form of psychotherapy which consists mainly of prolonged conversations with patients, in which persuasion and optimistic affirmations find a conspicuous place. This is a method which is most certainly well adapted to the uses of the general practitioner, as Dr. Branson points out, but unquestionably owes much, if not all, of its success to the principle of "suggestion." Professor Dubois and others have eloquently endeavoured to differentiate "persuasion" from "suggestion," and in theory one can no doubt do so. But when it comes to a matter of practical application, who can truthfully say that the forcible "conversation" of the kind in question, with its optimism, its confidence, and its reiterated affirmations of future well-being, is not, indeed, an example of the method of treatment by suggestion in the waking state? It is, in fact, a form of direct suggestive influence that has brought success to many an understanding doctor, and was in use centuries before Dubois clothed its description in imposing psychological terms.

Now it is a common-place among those who have had extensive experience of psychotherapy that whilst this conversational method of suggestive therapeutics is found to be successful in numbers of "easy" cases, there are many that are quite unrelieved by it—as Dr. Branson quite rightly acknowledges—and for these "difficult" cases more direct methods of psychic treatment are well known to be successful. In the face of this it is surprising that Dr. Branson should stigmatise "all forms of bald suggestion" as "pure chicanery," for the understood meaning of that phrase, as may be seen on reference to any good dictionary, is some shifty artifice or trickery.

When Dr. Branson further says that, in contra-distinction to the methods of direct suggestion, "rational psychotherapy, on the other hand, attempts to discharge the pathogenic notion by an appeal to the reason," he is surely dealing with psycho-analysis, in which the morbid idea is first unearthed and then "discharged." His conversational method of carrying this out as compared with the proper technique employed by psychotherapists to-day is unscientific and necessarily uncertain, and so scarcely "rational." Let it be understood by all means that the conversational method of benefiting patients by suggestion can be a most important adjunct to routine treatment ready to the hands of every medical practitioner; let every effort indeed be made to demonstrate its advantages to the profession at large. But do not let us elevate this method beyond its due position. To say that the so-called "rational psycho-therapy" as described by Dr. Branson is immeasurably superior to all direct methods, when the former is actually based on the influence of active verbal suggestion, and at the same time contains a proportion of arm-chair psycho-analysis, is to say that parts may be greater than the whole.

There is just one more point in connexion with the part unquestionably played by direct suggestion in Dr. Branson's method, and it is this. That writer asserts that he has not been as successful as he expected to be in its use; presumably, therefore, not as successful as Dubois himself. This experience is paralleled in regard to many psycho-therapeutic methods in which the generality of investigators have been unable to reproduce the success of a few others. It is a recognised condition of things that can only be explained—unsatisfactorily enough, to be sure—by saying that "personality" makes all the difference between success or failure in psycho-therapy. And it must be remembered that Professor Dubois happens to be a man of tremendous personality. Can it be doubted that the "driving-force" inherent in such a personality is not always to be found ready to hand in the case of everyone else. The factor of "personality" seems to be the crux of the whole matter.

Apropos I am reminded of a recent review in your columns of a book on suggestive therapeutics in which, referring to the author's opinion that the man behind the method is of more importance than the method itself, the reviewer commented that "it would be interesting if ..... someone ..... would try to express scientifically just wherein the differences between the successful and the unsuccessful practitioner—i.e., of psychotherapy—consist."[1] This is, of course, one of the most difficult problems to be met with in attempting to formulate hypotheses which will reasonably account for the phenomena of psychic treatment.

The value of Dr. Branson's paper is unquestionable, but it seems a pity that in advocating the particular psychic method which he himself has worked with, he should lend the weight of his name to condemning other methods of which, from the practical point of view, he can have had little experience as compared with those who devote the greater part of their time to them.

I am, Sir, yours faithfully,

Seymour-street, W., Jan. 18th, 1912. EDWIN ASH.

THE PREVENTION OF TUBERCULOSIS: A CORRECTION.

To the Editor of THE LANCET.

SIR,—Writing from the Galton Eugenics Laboratory Dr. David Heron has kindly drawn my attention to certain matters which seem to require correction. In my article on the Prevention of Tuberculosis published in THE LANCET of Jan. 6th I referred to certain statistics on the physical condition of school-children which I obtained from a report presented by Mr. Culpin. It would appear that these statistics were originally brought forward by Dr. Leslie Mackenzie and Captain Foster published by the Scottish Education Department. Dr. Heron informs me that "in getting the averages boys of all ages were lumped together. When correction is made for age, instead of boys from one-roomed houses being 11·7 lb. lighter and 4·7 in. smaller than boys from four-roomed houses, these differences become 5·5 lb. and 2·4 in. The explanation of this marked change is that among boys from one-roomed houses only 2·4 per cent. are aged 14 and upwards, while among boys from four-roomed houses the percentage is 11·9."

Allowing for this correction would therefore make the statistics from the point of view of my argument less striking than the uncorrected figures. On the other hand, as the result of an error in transcription the ages of the children were given by me as from 15 to 18 instead of from 5 to 18, and a difference of 2·4 in. and 5·5 lb. would be more remarkable in children of an average age of 11·5 years than if the children referred to had really been of the average age of 16·5. I am, Sir, yours faithfully,

Harley-street, W., Jan. 20th, 1912. J. SIM WALLACE.

A CASE OF FATAL HÆMOPTYSIS IN A BABY 13 MONTHS OLD.

To the Editor of THE LANCET.

SIR,—Dr. Ralph Brown, in THE LANCET of April 30th, 1910, reports as uncommon a case of fatal hæmoptysis in a child 3 years of age. I wish to record a case of fatal hæmoptysis occurring in a baby 13 months old. I attended at the birth of this child on May 5th, 1910. Labour was natural, the mother delivering herself. No consumption in either father's or mother's family as far as is known. The child was quite healthy up to Feb. 9th, 1911, when he developed broncho-pneumonia of both lungs accompanying measles and was extremely ill. I saw him three or four times a day for about a fortnight. Up to March 15th I saw him daily, after which date I attended irregularly till April 13th. The child made a fair recovery from the broncho-pneumonia. He never really got over it so well as I would have wished on account of the mother's carelessness. When I asked her to take the child out into the air she either went into a neighbour's house or kept him out until he was blue with cold. I did not see the child from April 13th to May 22nd. During the interval he had been anything but well, the mother neglecting to let me know the condition of the child.

[1] THE LANCET, Jan. 21st, 1911.

On the evening of May 21st I saw the father, who asked me to call on the following day, which I did, and was much surprised to find the child in a very serious condition. The lungs were in a terrible state. Nothing could be done for the suffering mite. I attended every day, doing my best to relieve the child, but he gradually grew worse and on May 29th, while on my rounds, I was met and asked to see the little patient at once as he was vomiting blood. I accordingly hurried to the house, only to be met with the cry that the child was in a neighbour's house. The mother, when she saw the blood, screamed, and ran and threw the baby into the lap of a neighbour. The child had given a very slight cough, when blood began to flow from mouth and nose. He vomited three times within the hour, in all about 3 to 4 ounces. There was no blood vomited from 12 noon to 4 A.M. on the 30th, when vomiting again commenced, the vomit being only coloured with blood at the time. About 9 30 A.M. he had another attack of vomiting, about one ounce of blood at this time. There was no more vomiting till 12.50 P.M., when he vomited about three drachms of blood with fatal result. Treatment was confined to staying the blood if possible, cold water, ice, with adrenalin and ergot. There was no necropsy.

Can any of your readers let me know how frequently hæmoptysis occurs in so young a child?

I am, Sir, yours faithfully,

P. CARRUTHERS WATT, L.R.C.P. Edin., &c.

Gatehouse of Fleet.

THE DETERMINING FACTOR IN SEX.

To the Editor of THE LANCET.

SIR,—Professor Ciesielski of Lwow has after 30 years' hesitation published a short pamphlet in Latin giving the result of experiments in the production of sex. He is a botanist, and his initial experiments were on plants. Naturally a dicœcious plant had to be employed; most dicœcious plants produce occasional staminal flowers on female individuals, but such a "sport" occurs with extreme rarity in *Cannabis sativa*, and accordingly this species was chosen for experiments. Professor Ciesielski concluded, as far back as 1878, that the determining factor is the freshness or otherwise of the pollen cell. His first conclusive experiment gave 94·6 per cent. of male plants in the case of artificial impregnation with pollen from an anther which was just dehiscing, and 100 per cent. of female plants when the pollen had been kept some 12 hours before use. The experiment was several times repeated with similar results.

He thereafter investigated the question in the animal kingdom. The conditions of experiment being less fully under the control of the investigator, the results are not so striking, but they are numerous enough and consistent enough to deserve attention. His statement of the law governing sex is as follows:—

Pari modo in animalibus et hominibus destinari tantum zoospermiis sexum orituri fetus. Zoospermia enim recentiora (i.e., ducentia originem ex ejaculatione spermatis masculini, quae fit ante decursum spatii unius diei ab antecedente coitu) producere fetum masculum, zoospermia autem vetustiora (quae ejaculata sint post longius spatium quam unius diei ab antecedente coitu) prodere fetum femineum.

He made experiments in rabbits, in dogs, horses, and cattle. Of these the first two were not very striking; but he declares that careful analysis of the stud record of a stallion showed that the rule held generally in regard to female foals and invariably in the case of male foals. With a stud bull under the control of an intelligent and careful servant of his own he found only two exceptions to his rule in 156 cases, and he believes these to be only apparent exceptions.

Denique non est silentio prætereundum, mihi per triginta tres annos sæpius potestatem ejus legis in hominibus probandæ non defuisse, consultus enim a multis meis cognatis, amicis, familiaribus præcepta idonea dabam, quæ quotiescunque observata erant diligenter, prosperos eventus habebant.

Many investigators have believed they had solved this problem; very few, one fancies, have maintained a firm belief in their solution for 30 years, and yet not published it. Professor Ciesielski deliberately kept his solution to himself, "verebar enim, ne cognita ad depravandos rectos mores conferret," and has now deliberately enshrined it in this brief Latin pamphlet of 15 pages. The law is so simple, depending on a single factor, and is stated so definitely by him, that confirmation or disproof of its truth ought to be obtained without much difficulty by other observers.

I am, Sirs, yours faithfully,

Norwood, Jan. 22nd, 1912. S. W. CARRUTHERS, M.D. Edin.

THE MORBID DIATHESES.

To the Editor of THE LANCET.

SIR,—Sir Dyce Duckworth has done good service in drawing attention to this now unfashionable but vitally important subject; perhaps you will allow me slightly to elaborate it. The "constitution" includes all the intrinsic tendencies, normal and morbid, of the individual; a "morbid diathesis" is a particular, recognisable constitutional defect. These morbid diatheses, or constitutional defects, are just as effective in causing symptoms of disease as are microbes, and far more ubiquitous. If we consider four individual patients, a diabetic child, an asthmatic man, a hysterical young woman, and a *bonâ fide* chronic lunatic, it will be acknowledged, even by surgeons and bacteriologists, that the symptom-groups shown are not due to any "extraneous influence," to any extrinsic cause. In these and many other cases the symptoms are due to a morbid diathesis, to a cause of purely intrinsic origin.

Each of these patients is an example from a series of cases, a "known series" in our science. From each such series we may, if we will, derive a conception that will in each case represent a true disease. "The diseases" diabetes, asthma, hysteria, insanity, would thus become "diseases of intrinsic causation." They would correspond with, for instance, typhoid fever, lead poisoning, and heat-stroke, these latter being conceptional diseases of extrinsic causation. It will no doubt interest Mr. Clement Lucas to hear that his old friend Dr. Walter Moxon said, in his introductory lecture in 1884: "The causes of disease have been divided in the past into predisposing and exciting; they will be divided in the future into intrinsic and extrinsic." Dr. Moxon was before his time, but he was no false prophet.

I am, Sir, yours faithfully,

Clevedon, Jan. 22nd, 1912. SYDNEY W. MACILWAINE.

THE ADMISSION OF VENEREAL CASES TO GENERAL HOSPITALS.

To the Editor of THE LANCET.

SIR,—In the paper on Venereal Diseases[1] by Dr. D. White and Lieutenant-Colonel C. H. Melville it is suggested that patients suffering from them should be admitted to general hospitals, that special arrangements and wards should be provided for these cases, and a special course of instruction should be given to the medical staff as to the diseases and their treatment at the State expense. The nursing, however, has not been considered, and a special staff of trained male and female nurses would have to be provided and maintained. The need for male nurses for such male patients needs no demonstrating, especially in the hospitals without medical schools, where there are no dressers to give injections and to do the dressings, unless the patients are to carry out the local treatment themselves.

A well-paid staff of trained women would also be requ red, for it would not be justifiable to force young probationers to nurse in the venereal wards as part of their training in order to gain their certificate. Nurses who enter small-pox hospitals or volunteer as plague nurses do so with full knowledge of the risks they run. The ordinary well brought up girl of from 20 to 25, the usual age at which probationers enter hospitals, is ignorant of the existence of venereal disease and of the horrible consequences of contracting it, and certainly should not be exposed under compulsion and in ignorance to such a vile contagion. It has been said that students and doctors run the same risk. But young men are not brought up in ignorance of these diseases as their sisters are, and they are fully aware of their dangers; also the risk incurred in a daily visit to the wards and the performance of dressings and examinations with every precaution against infection is a very different one from that incurred by the nurse. For she has to live all day and every day from 7 in the morning to 9 at night (except for two off duty hours and meal times) in the offensive atmosphere of a

[1] THE LANCET, Dec. 9th (p. 1615) and 16th (p. 1692), 1911.

ward of syphilitic patients, during which time she is constantly performing details of nursing which bring her into contact with infectious discharges and which in many cases it is not possible to carry out with the gloved hand.

The mental as well as the physical atmosphere must be considered, and the forced daily companionship of fallen and vicious women is a strain entirely unsuitable for a young probationer to be subjected to. No real nursing can exist where the patient's personality is treated as non-existent and the area of disease alone is considered. You cannot nurse the disease and ignore the patient suffering from it; mind and body are too interdependent. It is difficult for a young girl to overcome the horror and repulsion following the knowledge of sexual vice and its results, and to feel anything but disgust for its victims. Older and more experienced women while retaining their loathing for vice can at the same time feel profound pity and the desire to raise the fallen. The "intolerance of youth" has merged into the realisation that, at all events sometimes, *tout comprendre, c'est tout pardonner*, and that hatred of sin may coexist with tenderness and help for the sinner. So for the patients' sakes, as well as for the probationers, a staff of specially qualified women would be needed to undertake nursing of venereal cases in the female wards and in the out-patient department if such cases were admitted to general hospitals.

I am, Sir, yours faithfully,

Jan. 15th, 1912. A HOSPITAL MATRON.

SCOTLAND.

(FROM OUR OWN CORRESPONDENTS.)

University of Edinburgh.

THE annual report of the University of Edinburgh for 1911 shows that during the year the total number of matriculated students (including 630 women) was 3421. Of these, 1353 (including 19 women) were enrolled in the faculty of medicine. Of the students of medicine 593, or nearly 44 per cent., belonged to Scotland; 265, or nearly 20 per cent., were from England and Wales; 91 from Ireland; 99 from India; 256, or nearly 19 per cent., from British colonies; and 49 from foreign countries. The following medical degrees were conferred during 1911:—M.B., C.M., 1; M.B., Ch.B., 164; M.D., 72; and Ch.M., 2. The diploma in tropical medicine and hygiene was conferred on 9 candidates.

Edinburgh Royal College of Physicians: Annual Dinner.

This dinner was held on Jan. 19th, in the hall of the College, the chair being occupied by the President, Dr. Byrom Bramwell. The toast of the City of Edinburgh was responded to by the Lord Provost; the Houses of Parliament by the Secretary for Scotland, Lord Pentland, and by the Lord Advocate, Mr. Ure. The toast of the College, proposed by the Earl of Aberdeen, was responded to by the President.

Glasgow's Unhealthy Areas.

Dr. A. K. Chalmers, medical officer of health of Glasgow, has prepared a report on insanitary buildings in congested areas in Glasgow. He points out that in eight wards the annual death-rate always exceeds that of the city; in eight other wards the rate is occasionally above the city rate; while in the ten remaining wards the rate is always below the general average. Attention is directed to the internal defects met with in the older class of houses. The most frequent of these are common lobbies deficient in light and ventilation, which can now be dealt with under the Buildings Regulation Act; and concealed beds, which are prohibited in new buildings and illegal in existing houses. Another very serious defect is where "houses" are functionally back to back, although contained in the same tenement. This occurs when one apartment enters through another, and the windows of both are in the same external wall. This feature is almost characteristic of the older two-apartment houses in Glasgow, and it presents the same difficulty of through ventilation as gained notoriety for the back-to-back houses in England. The Housing and Town Planning Act of 1902 prohibits the erection of back-to-back houses in separate buildings, while allowing it in tenements if the medical officer is satisfied that they are so arranged as to secure effective ventilation of all habitable apartments. As a result of the operations carried on under the City Improvements Act, 1897, there have been cleared away from congested areas 773 houses. Under the Glasgow Police Amendment Act 918 houses have been closed as unfit for habitation, and 1539 have been closed under the Housing of the Working Classes Act, making a grand total of 3228 undesirable houses closed. Under the Building Regulations Act it was intended to secure that there should be proper restriction of the kind of building to be erected on any area of ground enclosed by a continuous wall of tenements and that due provision was made for ventilating the space. This applied only to new buildings, and the problem has been how to get rid of such as already existed. Dr. Chalmers suggests that the provision of open spaces on the margins of overbuilt areas fails to accomplish as much for the population as would be done by enlarging the intervals between the tenements. He suggests that the corporation should set aside a sum annually for reforming the worst areas. The report is accompanied by another from the town clerk detailing the statutory powers already available for the handling of these problems.

A Scottish Medical Insurance Council.

After weeks of difficulty and of delicate negotiations Scotland is now within sight of the formation of a central council for the purpose of dealing with the medical questions arising out of the Insurance Act. The aim has been to make this projected council representative of all the medical interests in Scotland—the Universities, the Medical Corporations, and of course the British Medical Association, as it is officially recognised in Scotland through the Scottish Committee of the Central Council of the Association. On Saturday, the 20th inst., a conference called by the Medical Corporations was held in the Royal College of Surgeons. It was attended by members of the Councils of the Corporations, by three representatives from Edinburgh and Aberdeen Universities, by two or more from Glasgow University, while St. Andrews sent a letter expressing sympathy with the movement and regretting that owing to another engagement no member of the Senate could be present. It was also attended by all the members of the Scottish Committee of the British Medical Association, of which Dr. Michael Dewar is chairman, and Dr. G. R. Livingston, of Dumfries, secretary. The chair was taken by the President of the College of Surgeons, Dr. G. A. Berry, on the motion of the President of the College of Physicians. After a good deal of discussion it was decided that joint action was desirable, and that steps should be taken to form a Scottish Medical Insurance Council, to consist of representatives of the four Universities, the three Medical Corporations, the Scottish Committee of the British Medical Association, and of one representative from each of the areas in Scotland, numbering between 56 and 60. A small committee was appointed to take the necessary steps to summon this body to meet as early as possible. The representative from the areas is to be selected by postal voting papers. When this council or conference meets it will have to decide what line or lines of policy the profession is to adopt in connexion with the Insurance Act. It is felt that such a council, with the executive that will have to be formed from it, will give steadiness to the profession in Scotland, will command public confidence, and will make the community realise how very seriously the Act threatens to disturb, not only medical practice, but medical education and all the higher things that modern medicine stands for. What steps and what policy may be ultimately determined upon it is impossible to say, but meanwhile there is time given for a calm and clearer view of the position, and from this it is not to be doubted that a wise policy will ultimately emerge. It is no small credit to Scotland that the various interests and different views have been brought so far together.

Scottish Poor-law Medical Officers' Association.

In the committee's report for 1911, signed by Dr. Gilbert Campbell, Dr. Matthew Martin, and Mr. W. L. Muir, it is stated that during the year detailed information was supplied to a large number of applicants in regard to the following appointments,—viz: Barra, Aberdeen Poorhouse, Colonsay, Gesto Hospital, Skye, Burra Isles, Resolis, Rosemarkie, Lunasting, Nesting, Tiree, Ochiltree, Dunnet, Olrig, Glenlivet, Coll, Far, and Arrochar. The outgoing medical officers willingly supplied the necessary details in every case, so that each applicant knew with accuracy the nature of the

appointment. Many members asked for advice in their difficulties. On behalf of a member a question put to the Local Government Board elicited the reply that no complete set of rules for the guidance of medical officers is in existence, but the Board have in view the issue of a book of rules and regulations relating, *inter alia*, to the duties of Poor-law medical officers. In reply to many queries, members were apprised that medical officers must attend pensioners as private patients, unless in cases where the parish council grants a medical relief order, then the medical officer must attend the case as part of his duties without any extra remuneration from his parish council. If the medical officer's salary is inclusive of medicine he must supply the medicines as to ordinary paupers. But if his salary is exclusive of medicines he will charge the cost and recover it from his parish council. A communication received from the Local Government Board states that questions are arising in connexion with the granting of medical relief to old-age pensioners, as to which no general instructions have yet been issued. A member asking if he was entitled to a fee for attending a pauper confinement in a case belonging to an outside parish was advised that this would wholly depend on whether midwifery cases were specially excluded in his agreement with his parish council, but it was believed that a parish council in such cases could legally pay a fee. Several cases of dismissal of non-resident medical officers have occurred. The advice given was that no medical officer has any tenure of office, but can be dismissed by the parish council without stating cause, that the length of notice must be reasonable, and depends on how the salary is paid—monthly or quarterly. Where another medical man starts practice in the district of a non-resident medical officer in the interests of the public the new man should hold the appointment. Several cases of dismissal of medical officers without cause being given have occurred, and the committee have been asked to use their influence on behalf of the dismissed medical officers, but the committee, after considering the statements of the medical officers, as well as information from independent sources, concluded that in no case would their interference be justified. A large correspondence has taken place in connexion with the Insurance Act. No definite advice could be given, as everything would depend on what terms, if any, could be arranged with the Insurance Commissioners concerning amount of remuneration, wage limit, mileage in country districts, and supplying of drugs. Combination of the profession is essential. No movement has been made regarding Parliamentary action; in the present state of affairs it is utterly hopeless. An association has been formed to get Poor-law officials—inspectors, governors of poorhouses, medical officers, clerks—brought under a scheme of superannuation. The annual general meeting will be held in the St. Enoch Hotel on Jan. 26th, at 4.30 P.M., to adopt the report and elect office-bearers for the coming year. All Poor-law medical officers are urged to join the association. The financial report was good. The secretary is Mr. W. L. Muir, 1, Seton-terrace, Glasgow.

Lead-glaze Dangers.

An important prosecution under the Factory Act was heard in Paisley Sheriff Court last week. His Majesty's inspector under the Factory Act prosecuted, and stated that the firm, who were fireclay manufacturers, had employed a woman in the process of ware cleaning without having arrangements made for the scrapings to fall into water. In this case they had been allowed to collect on a piece of brown paper. Samples of the scrapings were analysed, and one contained 60·7 per cent. of lead monoxide and the other over 40 per cent. Against the same firm another instance was cited where a woman was found engaged in the process of painting majolica glaze without being provided with suitable overalls. In each case the sheriff imposed a fine of £5.

Aberdeen and Consumption.

It has been decided to erect at the City Hospital, Aberdeen, a second open-air shelter, capable of accommodating seven people, and costing, with the necessary bath-room accommodation, about £100. The existing shelter accommodates 15 patients and is at present used for males. The fact that there are 20 applications from females has made it necessary to erect this extra shelter.

Wick Medical Officers' Salaries.

At a meeting of the Wick parish council held on Jan. 15th it was decided, by a narrow majority, to increase the salary of Mr. C. G. Rae, recently appointed medical officer for the southern division of the parish, from £40 to £60, to equalise it with the salary of the medical officer of the northern division of the parish. The salary was originally fixed at £40 on the understanding that the other medical officer's salary was to be reduced to the same figure. This arrangement, however, the Local Government Board has refused to sanction.

Jan. 22nd.

IRELAND.

(FROM OUR OWN CORRESPONDENTS.)

The National Insurance Act and the Poor-law.

A CURIOUS point has arisen in Belfast bearing on the sanatorium benefit. According to the Act a million a year is set aside for sanatorium benefit, while a special grant of 1½ millions is to be given to local authorities—e.g., county councils—for building or for making grants to sanatoriums, but those in receipt of Poor-law relief are excluded from all these benefits. Now, in Belfast the board of guardians have built and equipped at a cost of £40,000 a magnificent sanatorium with 265 beds—by far the largest and finest one in Ireland; yet because a board of guardians built it they cannot be recouped for outlay upon it, while other public bodies will be recouped for outlay on much smaller institutions. Three-fourths of the patients in the Abbey Sanatorium will be of the insured class. In Belfast the city corporation have made pulmonary tuberculosis a notifiable disease, and yet in the Forster Green Hospital, which has 70 to 75 beds, the public health committee have only 20 to 30 beds retained for consumptives. How, therefore, are the insured patients with pulmonary tuberculosis to be dealt with in Belfast? The corporation have not sufficient beds, and under the Act the Abbey Sanatorium with its 265 beds cannot be used. The only solution will be for the city corporation, which is a county council, to take over the institution. Having made the disease notifiable, they will have to provide means to treat it.

Prevention of Infant Mortality in Dublin.

The first annual meeting of the Dublin Committee for the Prevention of Infant Mortality was held last week under the presidency of the Lord Mayor. The work of the committee is carried out by a number of ladies who visit in the poorer parts of the city and give advice to the mothers of young children. They have been especially trained in their duties, and at present some 80 of them are at work. In the six months during which the committee has been active about 2000 visits have been paid.

Medical Inspection of Schools.

Last week Dr. Oliver Gogarty, surgeon to the Meath Hospital, Dublin, gave a public lecture advocating the medical inspection of schools in Ireland. He pointed out that the money of the State was now spent in attending to the effects of disease and not the cause. There was good reason why the Commissioners of National Education should call upon the Treasury to support the Irish schools more thoroughly than they did at present, because Scotland, which had the same population as Ireland, got double the educational grant that Ireland got. The cost of one policeman in Ireland was as much as the cost of the education of 49 children.

Bicentenary Celebrations of the School of Physic, Trinity College.

A meeting of medical graduates of Dublin University was held in the Anatomy Theatre, Trinity College, on Jan. 22nd, under the presidency of Mr. R. H. Woods, President of the Royal College of Surgeons, to consider what part the graduates will take in the bicentenary festival next July. As at present arranged the festival programme will be as follows:—On Thursday, July 4th: Reception of guests and delegates in the College Library at 3.30 P.M. In the evening: Dinner in the dining-hall, followed by a dramatic performance in the Examination Hall by members of the University Amateur Dramatic Society. On July 5th: A commemoration service in the College Chapel followed by unveiling of memorial stone to Dr. Stearne by the Provost and an address by the Rev. J. P. Mahaffy. At noon

presentation of addresses by delegates. In the afternoon a garden party and in the evening the graduates' dinner. On July 6th: Visit to medical school, followed by reception at the Royal College of Physicians. Conferring of honorary degrees at 1 P.M., followed by a garden party. The honorary secretaries of the festival committee are Dr. W. G. Harvey, Mr. S. S. Pringle, and Dr. R. J. Rowlette. It is under discussion that the graduates should present the school with some permanent memorial of their affection.

Fire-guards and Injury to Children.

A case was heard in Kingstown police court the other day in which a woman was prosecuted by the police for leaving her children in a room with a fire and without a fire-guard. The incident had occurred on Dec. 22nd, and one of her children had been fatally burned. Evidence was given by the inspector of the Society for the Prevention of Cruelty to Children that he had warned the prisoner as to the risks she ran in neglecting to provide a guard. The magistrate contented himself with inflicting a fine of 10*s.*, presumably because this was one of the first prosecutions, if not the first, in Dublin for such an offence.

The Women's National Health Association and the Insurance Act.

The movement for organising a "National Health Insurance Society," which I referred to last week, has occasioned a division of opinion in the Women's National Health Association. The Insurance Act is not popular in Ireland with almost any party. The dropping of medical benefits has irritated a great many of the working classes for whom the Act was mainly drawn up—that is, especially those engaged in industries. Why should a worker in England and Scotland have medical benefits and be debarred them in Ireland unless he has been previously registered in those countries? And if, being previously registered in England and Scotland, he comes over to Ireland and claims medical benefits, this very fact puts Irish workmen in an inferior position. Finally, since the medical profession regards the Insurance Act as interfering with its interests, as injuring the hospitals, as sanctioning the very worst type of practice, and as tending to lower the whole scientific status of medicine, it cannot well support a movement to found a society under such an Act until its provisions affecting medical men are adjusted to what they regard as fair. While the Insurance Act is now the law of the land, its proper administration depends really upon the medical profession. The medical profession are quite prepared in Ireland as in other parts of the three kingdoms to work this Insurance Act, but they ask in fairness that their position should not be injured by it, and until it is completely altered they fear that this is what will happen. Ireland is at present being covered with officials, some to explain the Act, others to carry out its provisions, with the natural result that voluntary workers feel that there is no longer need or room for them.

The Shannon Floods.

For several weeks past the floods along the banks of the Shannon have been rising so high that now thousands of acres on both sides of the river are under water. Large districts of the counties of Roscommon, Galway, and Tipperary, and of King's County, have been deserted by their inhabitants. In other places all transit is by boat, and many houses are still occupied which are invaded by water to the depth of a foot or two. A midwife had an extraordinary experience the other day near Derryholmes, in King's County. She was called to attend a patient, and had to drive through a flooded road for a distance of two miles with the water up to the axle of her trap. On getting to the house she found the floor of the bedroom covered with water to the depth of 8 inches, and the posts of the bed upon which the patient lay resting on bricks to keep the bedclothes out of the water. Two buckets were inverted and a plank laid across them to enable the nurse to attend her patient.

Typhus Fever in Listowel.

A severe epidemic of typhus fever has broken out in the town of Listowel in the northern part of county Kerry. So grave is the situation that the quarter sessions, which should have been held last week, were postponed without the transaction of any business. Sir Acheson MacCullagh, Local Government Inspector, visited the town last week and found the streets and lanes in a shockingly filthy condition. In many of them heaps of manure had been allowed to accumulate for months. No attempt had been made to disinfect the houses where deaths had occurred, and in one house people were found sleeping in the bed in which a patient had died of typhus fever a few days earlier. Dr. J. T. Dillon, medical officer of health of Listowel, has frequently warned the urban sanitary authority of the dangers likely to arise from their neglect, but without effect.

Jan. 23rd.

PARIS.

(FROM OUR OWN CORRESPONDENT.)

Prosecution of Physicians.

DURING the summer an epidemic of cholera causing considerable alarm occurred in many countries. In August two cases of cholera were found at Fougères and at Saint-Suliac, two little seaports near Dinard and St. Malo. The news spread quickly, and to prevent an exodus of bathers the municipal authorities declared that the rumour was absolutely unfounded. Some days later, however, an epidemic of choleriform enteritis ravaged Saint-Suliac and its vicinity, lasting two months, at the end of which period the administration of the Prefecture opened an inquiry to fix the responsibility. It was found that the *prélèvements* on the bodies had not been made at Fougères, and that at Saint-Suliac the legal notification, which would have occasioned the speedy intervention of the health department, was not made until long after the appearance of the disease. On the report of Dr. Le Normand, the medical inspector of epidemics, four medical men have been brought before the Procureur-Général by the administration of the Prefecture. Their defence is that they delayed making a return because the cases appeared doubtful, and as they were not sure of their diagnosis they preferred to wait.

Disturbances at Angers.

The medical students of Angers have been indulging in violent displays because, at the request of the executive committee of the Union of French Women, a series of conferences on puericulture had been announced to take place and the first address was made one evening by Dr. Legludic. An audience of 200 women was assembled before the school when 100 students attempted to prevent their entrance. Their efforts being frustrated by the director of the school the students next tried to break up the conference by shouts and deafening yells. At the close of the meeting the audience found the egress obstructed. This demonstration was due neither to political reasons nor to personal animosity against Dr. Legludic, but because they complained that in consequence of a smattering of medical knowledge the women criticised the proceedings of the masters of science.

The Life of Tissues Outside of the Organism.

Professor Carrel, of New York, pursuing his researches on the power of tissues to live and develop outside the organism, has undertaken a new series of experiments, the results of which were reported on Jan. 17th to the Academy of Medicine by M. Pozzi. On placing fragments of living tissues in appropriate organic media Professor Carrel shows that these tissues retain their individual life, their cells living and multiplying, thus increasing the volume of the fragment experimented with. This result hitherto has been maintained only for a brief period, from 2 to 15 days. But in his last experiments Professor Carrel has succeeded in causing fragments of tissue to live and grow for nearly two months, by alternating periods of culture in animal plasma in the incubator with periods of latent life in Ringer's liquid maintained at 1° C. Only the invasion of the culture by microbes seems to have prevented the prolongation of the experiments. We may yet see the day when, all technical difficulties having been surmounted, for instance, a regular circulation of nutritive plasma around living fragments with elimination of their waste products having been secured, the artificial conservation of real life in organs detached from the body—a veritable miracle of physiology—will be realised.

Closing of the Paris Faculty of Medicine.

On various occasions I have referred to the disturbances at the Paris Faculty of Medicine during the past three years and

periodically at the course of M. Nicolas. After the last outbreak the courses were suspended until Jan. 6th. It was hoped that this lesson would suffice for the students and discourage them from further manifestations. The new Minister of Public Instruction, M. Guist'hau, falling back on a measure threatened but not made use of by his predecessor, posted a final notice on Jan. 17th, stating that if order was not maintained at the lecture of Jan. 18th the Faculty of Medicine would be closed to students of the first and second years up to the end of the first semester of the scholastic year. Most of the students had resolved to refrain from further annoyance of M. Nicolas. A notice was posted on the doors of the Faculty that only students of the first and second years would be admitted to the great amphitheatre. No disorder followed, but at 4 P.M. on the day of the course some students left the practical school to gather before the gate of the Faculty and read the notice. Some policemen thought it necessary to interfere and order the gates of the Faculty, which were ajar, to be opened. A hundred young men released from all control rushed into the great amphitheatre, climbed upon the stairs, and began a tumult. M. Nicolas endeavouring to withstand the storm remained a few moments in the well, but the noise continuing he left the place. The rioters thus left in possession called for the dean, M. Landouzy, who responded to their call and pointed out to them that by acting in this fashion they would cause their fellow-students to lose a year of their curriculum and perhaps spoil their career. The students leaving the amphitheatre scattered themselves through the streets, provoking considerable excitement in the Latin Quarter. The students of the first and second years held a meeting of the corporate society at the hotel, and after a lively discussion elected a committee of six, who were deputed to inform the Minister that the "troubles could not be imputed to them, as by the negligence of the dean no control had been exercised at the entrance."

The Rise of the Seine.

Happily the fears recently prevailing of a fresh rise of the Seine have been dispersed, for the river has begun to fall. It is hoped that the fall will continue.

Jan. 22nd.

BERLIN.

(FROM OUR OWN CORRESPONDENT.)

Investigations on the Effect of Internal Treatment in Cases of Malignant Growth.[1]

Professor von Wassermann recently read before the Berlin Medical Society a paper on the use of internal remedies in the treatment of malignant growths in animals. He said that certain very resistant growths in mice were by Professor Ehrlich and others classified as cancer and sarcoma. These growths never disappeared spontaneously, but were composed of most resistant tissue. Remedies directly applied to the growth were useless for therapeutic purposes, because it was obviously impossible to know how wide the growth had already spread. He therefore tried to find a compound which after being injected into a vein would automatically leave the circulation and act directly on the cells of the tumour. By certain experiments he had found that the local administration of selenium and tellurium destroyed the cells of the growth, but intravenous injection of telluride and selenide of sodium in mice had no effect on the growth, the cause being that the compound administered in this way did not reach the tumour. Moreover, the highly poisonous action of the preparations allowed the injection of only very small quantities of them.

Professor von Wassermann said he had tried to produce chemical compounds which would convey the selenium and tellurium from the blood to the growth. This could only be done by substances easily diffusible in the living organism, such as are certain compounds belonging to the fluorescin series, including eosin and others. He succeeded in producing a compound consisting of selenium and eosin, which for the full development of its effect had to undergo a very complicated chemical process. When this substance was injected into the caudal vein of a healthy mouse there was a well-marked reddening of the entire animal, beginning even before the completion of the injection, and by degrees becoming stronger, especially on the mouth, the eyes, and the claws. In mice suffering from tumours no effect became visible after the first two injections made on two successive days, but after the third injection there was a softening of the growth, which after the fourth injection became still more distinct, presenting the appearance of a fluctuating cyst. The liquefied substance was then absorbed; the sac became smaller and the capsule smoother, so that only a long œdematous cord remained. After the fifth and sixth injections the absorption was really complete, and within ten days the animals had recovered. The effect was not, however, always such a good one. In the case of very large growths the animals became seriously ill simultaneously with the liquefaction of the growth and eventually died—a result which was probably due to a toxic influence exerted by the liquefied substance of the growth. A relapse had never occurred, but when for one reason or another the necessary number of injections could not be given so that cells of the growth were left undestroyed a relapse usually happened very quickly. On post-mortem examination it was found after the first injection that the growth was intensely reddened as compared with its unstained or only slightly stained surroundings. This fact showed clearly that the compound has a predilection for the tumour; this latter was found to be disintegrated and to consist of crumbly masses. In the second stage, where the healing had made further progress, the tumour was replaced by a lardaceous detritus in no way resembling the former growth. The effect of the compound was the same whether artificially produced or spontaneously grown tumours were used for the experiment.

Professor von Wassermann concluded that by an intravenous injection of a preparation of selenium and eosin he had succeeded in producing in mice the liquefaction and absorption of malignant growth, and when the tumours were not too large the animals recovered completely without relapses. He was careful to mention that he had not hitherto had any evidence to the effect that the compound would act similarly on the human species, although this might be shown by further clinical experiments. He also said that on microscopical examination he had found that the compound directly destroyed the nucleus of the cells of the growths, so that the growth itself was transformed into a detritus which was absorbed by the spleen and in a lesser degree by the liver. No damage was done to the other tissues of the body.

The experiments of Professor von Wassermann and the results obtained by him are obviously of the greatest importance, because it has now for the first time become possible to act through the circulation exclusively on the tissue of the growth without attacking the normal tissues of the organism. There is, however, some doubt as to the exact relationship existing between the growths which occur in mice and the malignant growths in the human subject, and their identity has been expressly denied by Professor von Hansemann.

Termination of the Epidemic of Poisoning.

The mysterious epidemic of poisoning among the inmates of the municipal shelter in Berlin, after having continued for about a week, came to an end on Jan. 2nd, the number of persons attacked being 171 with 78 deaths. Great uncertainty at first prevailed as to the nature and cause of the disease, but in the summary of the events of the first five days of the outbreak, which appeared in THE LANCET of Jan. 6th, I mentioned that by Dec. 31st it was suspected that the mischief might be due to the consumption of cognac adulterated with methyl alcohol. Chemical examination was undertaken of the cognac supplied in certain public houses in the neighbourhood of the shelter to ascertain if this suggestion was correct, and when these establishments were closed by the police the epidemic at once ceased. The wholesale dealer from whom the adulterated cognac had been procured was also discovered, and in his cellars the police found great quantities of methyl alcohol, a portion of which he had sold as genuine ethyl alcohol. He was arrested and will be prosecuted for manslaughter through negligence.

In the course of a discussion on the epidemic held at a recent meeting of the Medical Society Professor Stadelmann, chief physician to the Friedrichshain Hospital, described the symptoms of the disease, the characteristic points being, in severe cases, sudden colics, vomiting, cyanosis, and paralysis of the respiratory muscles,

[1] See THE LANCET, Jan. 13th, 1912, p. 112.

the heart, however, continuing to beat for some time later. Death in severe cases occurred within a few hours. On the other hand, some patients whose first symptoms were comparatively mild became dangerously ill at a later stage. Amaurosis was frequently observed. According to a statement of Professor Pick, prosector of the Friedrichshain Hospital, the microscopical examination of the retina showed certain alterations of its cells, so that the sight failed. In some cases the optic nerve showed also certain alterations.

During the discussion attention was drawn to several anomalous features observed in the attacks. Some patients, for instance, had died after taking only a small quantity of the deleterious cognac; whereas others had drunk large quantities of it without developing any symptoms of illness. It was also ascertained that only inmates of the shelter were attacked, although the public-houses in question had other customers besides them. Some medical men consider that pure methyl alcohol is not so poisonous as has been stated, and that a combination of methyl alcohol with other unknown substances must therefore have been the cause of the epidemic. The important fact, however, is that the poisoning came to an end at once on the closing of the places where the adulterated cognac was retailed.

Jan. 15th.

VIENNA.

(FROM OUR OWN CORRESPONDENT.)

Retirement of Professor Ludwig.

Professor Ernst Ludwig, the lecturer on chemistry of the Vienna Medical Faculty, has just completed his seventieth year, which, according to our university statutes, is the age-limit for active service upon the teaching staff. In exceptional cases an extension of a year, the so-called Ehrenjahr, or honorary year, is granted, the result being that the teacher in question retires from the university when he is 71 years of age. Professor Ludwig is a favourite with the students in Vienna. He has for many years been teaching medical chemistry, and former pupils of his at present occupy nearly all the chairs of chemistry in the Austrian universities. He is one of the principal members of the Austrian Board of Health, and to his initiative we owe numerous improvements that have been made in the existing regulations as regards public health administration; forensic medicine also owes to him a great deal of its modern development. A number of former pupils and friends of the professor have already offered him their congratulations on the occasion of his birthday, whilst the official celebration will take place some time later.

Suicides and Alpine Accidents in 1911.

The official statistics show that during the 17 years from 1893 to 1910 there was a constant annual increase in the number of persons taking their own lives, the figures rising from 380 in the year 1893 to 640 in 1910, but there is now some consolation in finding that 1911, the year just closed, was in this respect no worse than its immediate predecessor. The number of suicides in 1911 was, in fact, 640, the same as in 1910, only with the difference that the range of age has widened. There were 6 instances of suicides among children, an increase as compared with any previous year, the youngest being a boy of 9 years, whilst at the other end of the scale the oldest person had passed 82 years of age. As regards the age distribution, the majority were between 25 and 50 years, and 75 per cent. were males. As the motive for self-destruction, bad health was assigned in 28 per cent., misfortune in 37 per cent., disappointment in love in 12 per cent., fear of punishment in the case of the 6 children already mentioned and 7 adults (2 per cent.), whilst other reasons not clearly known were responsible for the remainder. With respect to the means employed, shooting was preferred by men and drowning by women, whilst hanging and poison were resorted to in an equal percentage of the cases if sex is considered. Another interesting fact is the prevalence of suicides in the spring and summer months, May heading the list with 73 cases, June following with 64, and August with 63, whilst December and October show the lowest figures, 43 and 50 respectively. It might have been expected that the influence of the weather would cause just the opposite result. The number of fatal accidents to tourists in the Alps also shows a constant increase during the summer months, as is only natural. In 1911 about 130 persons lost their lives in accidents in the Austrian, German, and Swiss Alps; from October till February only 18 such casualties happened, whilst in July, August, and September 70 were recorded.

Restrictions on the Use of Methyl Alcohol.

Owing to the serious loss of life in Berlin caused by the drinking of methyl alcohol the sale of this substance has again been made the object of a special ordinance by the Austrian Board of Health. The employment of even the smallest quantity of methyl alcohol for the preparation of foods, drugs, sweets, or beverages, and in short for any purpose except for a strictly and purely industrial one, is now prohibited; the ordinance also specifies the purposes for which it may be used, such as the manufacture of varnish, polishes, and colours. Sporadic cases of poisoning by this alcohol occurred in Austria some time ago, but the cause of the symptoms was at once recognised and preventive measures were taken.

Salvarsan.

In order to arrive at a definite opinion as to the advisability or otherwise of injections of Professor Ehrlich's salvarsan a circular has been sent out to nearly all the medical men in this country inviting them to give the results of their experience of subcutaneous or intravenous injections of the remedy in question. This collective investigation has no official character, being conducted by a private practitioner interested in the subject. In this country there is a strong feeling against the indiscriminate use of salvarsan. One of our leading dermatologists, Professor Finger, has seen several cases which have made him distrustful of it, and have led him to believe that one of its components is especially dangerous to the auditory nerve. Professor Finger's observations have been corroborated by Dr. Alexander, and the result of this investigation is therefore awaited with general interest.

Jan 22nd.

NOTES FROM CHINA.

(FROM OUR OWN CORRESPONDENT.)

Retrospect of the General Health during 1911.

THE health of foreigners in China during the past year has been better than has as yet been recorded. This is due to the progress of medical science mainly in the matter of sanitation, which is receiving increased attention from the medical officers of the different treaty ports who look after the "concessions" in them. Typhoid fever is being guarded against more strictly by warning notices containing information as to the causes of infection, &c., and malarial fevers are becoming less of a menace by improved drainage of the areas in which the foreign quarters are. One may say, speaking generally, that life in China nowadays has less risk, as regards the preservation of health among Europeans, than in any other country east of Suez, except Japan, if ordinary care be taken. In the Yangtze Valley cases have occurred in several Europeans of infection with schistosomum japonicum. This disease, only discovered in 1904, has become a widespread trouble in the Yangtze Valley, and in some of the rice-growing districts there as many as 50 per cent. of the riverine and lakeside male population suffer from it. So far it has only been observed among the fishermen and rice-farmers, and not at all among the women, who are small-footed and do not wade. In passing, one may add that the practice of foot-binding still remains universal among Chinese women. In the European cases symptomatic treatment, such as aperients, antifebrile medicines, and tonics, generally results in ultimate cure if the patients abstain from incurring further infection by wading in infested waters. But among the natives, who become reinfected many times through their constant occupation in the paddy fields or fishing bare-legged in the rivers and lakes, it is a deadly disease, generally resulting in death in from one to three years, often less. The chief symptoms are continued remittent fever with dysentery and progressive abdominal distension with very marked liver and splenic enlargement. The last stages are marked by ascites and general anasarca. Schistosomiasis is due to a small trematode worm about 11 mm. in length and 5 mm. in breadth. Every

conclusion so far points to the route of infection being through the skin of the feet and ankles. This parasite is being closely studied in several of the Yangtze river ports and well merits investigation. The lessons with regard to rapid spread which have been learnt from trypanosomiasis emphasise the importance of gaining a knowledge as to the extra-corporeal host, the haunts, embryonic development, and mode of spread of this trematode, all of which are as yet undiscovered.

Sickness and mortality rates unfortunately maintain their high level among Chinese. On all hands there is evidence of the increase of tuberculosis. I have frequently referred to this scourge, which is spreading throughout the Empire unhampered by any attempt to check it. Sanatoriums are unknown; not even the most elementary principles to limit infection, now so well established in Europe, are observed. To the student of public health tuberculosis in all its forms seems as hopeless a problem as the country's politics. Cholera and bubonic plague have touched China lightly this year. The former has been almost absent. Probably more accurate methods of diagnosis have resulted in a clearer definition between choleraic diarrhœa and the more virulent cholera Asiatica. Bubonic plague appeared in Canton (200 deaths per diem for a couple of weeks), Amoy, Pakhoi, Shanghai (one or two sporadic cases), and Foochow, but there is no evidence of its having occurred in any inland ports or in the Yangtze Valley. As pointed out in previous notes, typhus and relapsing fever have accounted for the deaths of many thousands of the famine-stricken class, who live huddled together under the most insanitary circumstances. In this land with 500 medical and over 2000 lay missionaries belonging to every imaginable sect there is abundant room and opportunity for those who are willing to practise and preach the Gospel of Public Hygiene. There are not, as in India, innumerable caste or religious restrictions, and, moreover, the average Chinese is a reasonable creature, and willing to listen if he is shown the right way. The incidence of small-pox, for instance, is gradually diminishing because of the willingness to accept vaccination, and, as the pneumonic plague epidemic showed, the officials and people were not averse to the carrying out of rigorous disinfection measures as advised by foreign medical men. What a field there is here for the prosecution of an active anti-tuberculosis campaign, especially at present, when new ideas are being taken up so generally! One would fain see a full half of the £100,000 which is being raised in England and America for a university at Hankow being devoted to medical education and the physical well-being of the people. £50,000 would suffice for the introduction and prosecution of a health campaign that would have a far-reaching effect. In the past few years Western medicine has established itself among the people and has met with a more ready response than has been the case with any other profession or foreign method of doing things.

Red Cross Work in the Rebellion.

Since my last letter the Imperial Government has accepted in its entirety the rules of the 1904 Geneva Convention, and Red Cross work is now being carried out in the field of conflict. The Central Government organised, under a high official, a society which received the recognition of the foreign ministers in Peking as the Red Cross Society of China. The practical work of this society was placed under the superintendence of Dr. J. G. Gibb, of the Peking Union Medical College, and three days later the hospitals in Peking were organised by him as base hospitals with their respective medical staffs, and ambulance and bearer parties were allotted to each. The curriculum of the college had to be interrupted, as three field companies were formed from among its graduates and students, with eight foreign doctors of the teaching staff as officers. Each division was sent out equipped with all that is essential for first aid, dressing station, and field hospital work. Of these three companies one has been to Hankow, and is now being moved to Honanfu in response to a request from General Chiang, who commands the Imperialist forces there. Another is working at Wuchang. The third company has been in the fighting between Government and Revolutionary troops in Shansi and has now moved down with them to Taiyuanfu. Branch societies have been formed in many of the northern cities and preparations have been made for the opening of base hospitals in case of need. In all cases the Chinese officials and foreigners, medical and lay, are working hand in hand. It is gratifying that at this important step in the progress of modern medical science in China the Central Government has, with the assistance of the foreign ministers, adopted so correct an attitude. And it must be hoped that this correctness will hold the field rather than the tendency of the Wuchang Revolutionary authorities to refuse strict adherence to the terms of the Geneva Convention.

Peking, Dec. 26th, 1911.

Obituary.

CECIL YATES BISS, M.A., M.D. CANTAB., F.R.C.P. LOND., M.R.C.S. ENG.

THE death of Dr. Cecil Yates Biss took place on Jan. 20th at his house in Melina-place, St. John's Wood, after many years of illness. Dr. Biss was educated at Downing College, Cambridge, where he was a foundation scholar, and at St. Bartholomew's Hospital. At the University he gained the University Winchester prize. He took a first class in the Natural Sciences Tripos, 1875, proceeding to the M.A. degree in 1879. In 1880 he took the M.R.C.S., and in the same year took his M.B. degree and became a Member of the Royal College of Physicians of London. He proceeded to the M.D. at Cambridge in 1884, and in 1889 was elected to the Fellowship of the Royal College of Physicians. He was at one time examiner in medicine and materia medica at the Apothecaries' Society of London, and in materia medica at the Royal College of Physicians of London. He was appointed physician to out-patients at the Middlesex Hospital and lecturer on pharmacology and therapeutics at the Medical College, and physician to the Brompton Hospital for Consumption, honorary physician to the Western General Dispensary, and assistant physician to the Metropolitan Free Hospital. He was also consulting physician to St. Saviour's Hospital and to Friedenheim (Home for the Dying), a consulting medical officer to the Colonial Mutual Life Assurance Society, and demonstrator of physiology to selected school teachers, South Kensington. Dr. Biss contributed various papers to medical periodical literature, chiefly in relation to diseases of the chest. His work bade fair to bring great credit on himself and his profession when he unfortunately suffered, about 12 years ago, a hemiplegic stroke, which left him permanently paralysed and brought a career of great promise to an untimely end.

CHARLES WARDEN, M.D. ABERD., F.R.C.S. EDIN., M.R.C.S. ENG., L.S.A.,

HONORARY CONSULTING SURGEON TO THE BIRMINGHAM AND MIDLAND EAR AND THROAT HOSPITAL.

Dr. Charles Warden died at his residence, Southside House, Weston-super-Mare, on Jan. 13th, in his eighty-fifth year. Dr. Warden received his medical education at St. George's Hospital, London, and also studied at Paris. He took the M.R.C.S. Eng. in 1850, the L.S.A. in 1851, in which year also he graduated as M.D. at King's College, Aberdeen. He had at one time a large practice at Birmingham, and was closely identified with philanthropic work there. He was consulting surgeon to the Birmingham and Midland Ear and Throat Hospital and to the Midland Counties Royal Orthopædic and Special Hospital, as well as to the Birmingham Royal Deaf and Dumb Institution; he was also on the honorary staff of the Birmingham General Dispensary and the Lying-in Hospital. In 1888 he was elected president of the British Benevolent Society, and in 1891 he was vice-president of the Laryngological Society. In 1890 he was President of the Otological Section of the British Medical Association, and in 1891 vice president of the British Laryngological and Rhinological Association. He took a great interest in all municipal matters in Birmingham, and was a magistrate for the city. He went to Weston-super-Mare ten years ago, where he was highly esteemed and respected, and much sympathy is felt there for his widow and four children. The funeral took place at the local cemetery on Jan. 17th, the first portion of the service being at the parish church.

EUGENE STEPHEN YONGE, M.D. EDIN.

WE regret to announce the death of Dr. E. S. Yonge, which took place at his residence, Old Trafford, Manchester, on Jan. 12th. He had been a sufferer from some obscure affection for a number of years. Dr. Yonge took the degrees of M.B. and C.M. at Edinburgh University in 1891, and the M.D. in 1897. He subsequently did post-graduate work in Vienna, Berlin, and Paris, and was for a time house surgeon in the Southern Hospital for Women and Maternity Hospital, Manchester, before specialising on diseases of the throat and nose. His activity was displayed specially in the direction of rhinology. His treatment for asthma and hay fever by means of "resection of the nasal nerve" is said to have proved very successful, and has been the subject of keen discussion. Some short time ago Dr. Yonge resigned some of his appointments. He was a physician to the Crossley Sanatorium and the Manchester Hospital for Consumption and Diseases of the Throat. He published many papers on his specialty, and quite recently there appeared his "Handbook of Diseases of the Nose and Throat." This work took much of his time. He was a man of exceptional skill and noted for his kindness to his patients. Death was due to heart failure.

JOHN SHIVES, M.D. ABERD.

A well-known general practitioner in the Bradford district passed away on Jan. 5th, in his sixty-seventh year, at his residence, Arnage, Shipley, after an illness lasting many months.

Dr. Shives was a native of Ellon, Aberdeenshire, and was educated at the University of Aberdeen. He qualified as L.R.C.S. and L.M. Edin. in 1868, M.B., C.M. Aberd. 1869, and M.D. Aberd. in 1876. His chief professional work was done at Liversedge, where for many years he enjoyed a large general practice, during the conduct of which he was elected an honorary surgeon to the Dewsbury Infirmary. His services were greatly valued in the neighbourhood, both in public appointments and among private patients. On leaving for London in 1894 he was the recipient of valuable farewell presents from both patients and personal friends. When in London he became a barrister-at-law, and after travelling in the United States returned to Yorkshire and settled in Shipley. The interest he took in his profession was deep, and he kept it up to the last. Those who knew him intimately will long remember his geniality, shrewdness, and kindliness. Dr. Shives was buried among his own kith and kin at Allenvale Cemetery, Aberdeen.

DEATHS OF EMINENT FOREIGN MEDICAL MEN.—The deaths of the following eminent foreign medical men are announced:—Dr. Wilhelm Franz Loebisch, emeritus professor of medical chemistry in the University of Innsbruck, aged 72. In the earlier years of professional life, after having graduated in Vienna, he took medical charge of a ship and afterwards served as a volunteer surgeon with the German army in 1870. Having formerly been a pupil of Hoppe Seyler in Tübingen he was appointed assistant to Professor Maly of Innsbruck after the close of the Franco-German war, and in 1874 became assistant to Professor E. Ludwig in Vienna, whence he was induced to return to Innsbruck by the offer of an extraordinary professorship of medical chemistry in 1878. Some four years later he was promoted to be ordinary professor, retaining the chair until he reached the regulation age for retirement—70. He published a well-known work on Urinary Analysis and edited a magazine which was the forerunner of the widely read *Therapie der Gegenwart*.—Dr. H. J. Billeter, extraordinary professor of odontology in the University of Zürich, aged 77.

DEPUTY MEDICAL OFFICER FOR LONDON.—At the suggestion of Dr. W. H. Hamer, the new medical officer of health for London, the London County Council has decided to appoint a deputy medical officer of health and deputy school medical officer, instead of filling the position of assistant public health medical officer left vacant on the promotion of Dr. Hamer to his present office. The salary will be £1000 a year. Members of the Council's medical staff will not be precluded from applying, and the age of the applicants must not exceed 50 years.

THE NATIONAL INSURANCE ACT.

THE GOVERNMENT AND THE INSURANCE ACT.

IT is announced that the Conference on the National Insurance Act at the London Opera House, Kingsway, which is to be addressed by the Chancellor of the Exchequer, will be held on Monday afternoon, Feb. 12th, and not on Feb. 5th, as previously stated. The Conference is being arranged jointly by the National Liberal Federation and the National Insurance Committee. The chairman of the latter body is the Master of Elibank, and the only medical member is Dr. Christopher Addison, M.P.

THE ABUSES OF CONTRACT PRACTICE.

A recent letter in the *Times* from Mr. James Milward, a retired practitioner, gives a lurid description of the kind of "cheap doctoring" which is, or at least was, possible under the worst forms of contract club practice. The writer, however, does not seem to recognise that the avowed intention of the Act is to render such occurrences impossible in the future, although it is open to doubt whether the methods proposed by those who framed the measure will succeed in so doing. Mr. Milward describes, in terms which may have been justified by things which have happened in the past, the degradation into which contract practice can fall. In so far as the National Insurance Act in its present form threatens to perpetuate the evils of contract practice, his words may be considered to constitute a timely warning; but it is fair to remember that clauses of the Act have been framed especially to produce a contrary result.

THE HOSPITALS AND THE ACT.

With reference to the probable effect of the Insurance Act on subscriptions to voluntary hospitals Mr. Sidney Holland has lately written to the press from a point of view which, we believe, differs from that previously expressed by him. He regrets the possible withdrawal of subscriptions to the voluntary hospitals, which it appears to him are following on the promulgation of the terms of the Act, while he agrees that the hospitals will have to admit a vast number of in-patients as at present. He foresees that if the public continue to withdraw their subscriptions the hospitals must close or else become rate- or State-supported, and urges the public to wait a little and see how things develop before refusing their help to the sick poor.

THE SCOTTISH CENTRAL COMMITTEE.

Our Edinburgh correspondent announces that the Central Scottish Council for the purpose of dealing with medical questions arising out of the Insurance Act is now almost an accomplished fact. It is expected that the Council will adequately represent all the medical interests in Scotland, including the Universities, the corporations, and the Scottish committee of the British Medical Association.

THE NATIONAL MEDICAL UNION.

A meeting of the executive committee of the National Medical Union is being held at Manchester to-day (Friday). The executive of the union has been at work since it came into existence soon after the mass meeting at Manchester on Dec. 14th, and a statement of its past and future action is expected shortly. The honorary secretary is Dr. T. Wheeler Hart, Avenham House, Stretford, Manchester.

THE BRITISH MEDICAL ASSOCIATION AND THE ACT.

The Council of the British Medical Association has declined to call an extraordinary general meeting of the Association in accordance with the requisition signed by 564 members and presented by Dr. F. J. Smith; but a special meeting of the Representative Body of the Association will be held towards the close of next month, probably on Feb. 21st. The next quarterly meeting of the Council will be held on Jan. 31st.

We understand that the Reform Committee of the British Medical Association, whose headquarters are 129, Old Queen-street, Westminster, is actively engaged in the formation of branches throughout London and the provinces. Fourteen provincial and seven metropolitan branches of the Reform Committee are in process of formation, and the executive is in touch with a similar committee which was formed at Birmingham as a result of the mass meeting held there in December. Meetings are being arranged throughout the suburbs and provinces.

Dr. Alfred Cox, acting medical secretary of the British Medical Association, in a letter addressed to the secretaries of the English and Welsh branches of the Association, dated Jan. 4th, draws attention "to the fact that the setting up of Local Medical Committees in no way commits the local profession to form panels of practitioners for the purposes of the Act." In the opinion of the Council such committees, on the contrary, "will be equally useful if when the regulations are drawn up it is found that they are such as to justify the profession in refusing to form a panel and in organising opposition." It is obviously important that local medical bodies should be able to organise local medical opinion and bring it to bear upon the Local Insurance Committees. The divisional areas of the British Medical Association, it is pointed out, do not correspond with the proposed insurance areas under the Act. The various branches are urged to considered the best means of using the machinery of the Association in these difficult circumstances.

A meeting of the Wandsworth Division of the British Medical Association was held on Jan. 22nd, and a resolution condemning the recent decision of the Council and approving of the formation of a Reform Committee was adopted with one dissentient. Mr. E. B. Turner, whilst insisting upon loyalty to the Association, said their object was to capture the machinery of the Association, and use it to deal in a more efficient way with the iniquitous Insurance Act. He advised the meeting to adopt a definite policy which would be put before the next Representative meeting by a representative whom they could trust not to be shaken or misled.—The Brighton Division has passed a resolution expressing the opinion that the Council, not having acted with due energy and firmness in their negotiations with the Government, should forthwith send an ultimatum informing the Government that they have advised every member of the Association to refuse service under the Act. Similar action has been reported from various other quarters.

THE ACTION OF MEDICAL MEN IN POPLAR.

At a meeting of the medical profession in Poplar on Jan. 17th the following resolution was carried unanimously:—

That a Union of the Registered Medical Practitioners practising in the metropolitan borough of Poplar be formed for the purposes of protecting the interests of the medical profession, securing united action in dealing with public bodies, and strengthening the bonds of professional fellowship in the borough, and that it be called the Poplar Medical Union.

A committee was elected to draw up rules.

It was pointed out that the Union was not in opposition to the British Medical Association, but was to look after the interests of the local profession. The majority of its members are also members of the British Medical Association. It is hoped by the Union that other boroughs will form similar unions.

SOCIALIST DOCTORS AND THE INSURANCE ACT.

AT a meeting of Socialist doctors held on Jan. 21st at 24, Upper Wimpole-street, London, the following resolutions were passed and ordered to be sent to the press for publication:—

That the only satisfactory method of treating existent disease and of safeguarding the public health is by the establishment of a properly organised State medical service, under which medical practitioners would become public officers employed and paid directly by the community for the purpose not merely of curing but of preventing disease.

That the medical arrangements proposed by the Insurance Act are in the main crude and unscientific, and as they stand will do little towards eliminating disease or reducing physical deterioration because the Act deals with effects rather than causes.

That the Act will perpetuate the worst features of many of the most unsatisfactory types of practice. But that having regard to the following facts: (1) That opinion in the medical profession and amongst the general public is not yet ripe for a nationalised and socialised medical service; (2) that the Act will bring an increasing number of doctors into the service of public authorities; (3) that the Act must inevitably lead to the public management and control of the voluntary hospitals. (4) that on the revision of the Act in 1915 women and children will almost certainly be included, and that there will then be an opportunity of enlarging its scope, and of remedying many of its present defects; this meeting of medical practitioners advises all Socialist doctors to accept service under the Insurance Commissioners, provided that the capitation system of payment is adopted as the ordinary method of remuneration, and that fair conditions of service are secured for the profession.

That the capitation system—i.e., a fixed payment to the medical attendant per head per annum—is the only system (short of whole-time salaried appointments) which harmonises the interests of the public, the patient, and the doctor.

That it is essential to conduct an educational campaign with a view of influencing public opinion and to ensure that when the Act is remodelled in 1915 every doctor shall become a public health officer whose duty shall be to search out and prevent disease instead of merely acting as a direct or indirect purveyor of physic.

Signed on behalf of the meeting,
C. A. PARKER, F.R.C.S.
ALFRED SALTER, M.D., J.P.
W. A. DAVIDSON, Hon. Sec.

235, Uxbridge-road, W., Jan. 22nd, 1912.

Medical News.

SOCIETY OF APOTHECARIES OF LONDON.—At examinations held recently the following candidates passed in the subjects indicated:—

Surgery.—H. St. C. Colson (Sections I. and II.), Westminster Hospital; J. F. O'Connell (Sections I and II.), St. Mary's Hospital; F. C. Shone (Sections I. and II.), University College Hospital; and W. H. Vincent (Sections I. and II.), St. Mary's Hospital.
Medicine.—H. St. C. Colson (Sections I. and II.), Westminster Hospital; E. B. Keen (Section I.), Charing Cross Hospital; J. F. O'Connell, (Sections I. and II.), St. Mary's Hospital; and C. B. Welsby (Section I.), London Hospital.
Forensic Medicine.—H. St. C. Colson, Westminster Hospital; R. J. M. E. Le Dentu, Bordeaux; J. F. O'Connell, St. Mary's Hospital; and H. Willis, Manchester.
Midwifery.—H. St. C. Colson, Westminster Hospital; M. P Dos Santos, Louvain; J. F. O'Connell, St. Mary's Hospital; C. G. Waddington, Leeds; and H. Willis, Manchester.

The Diploma of the Society was granted to the following candidates, entitling them to practise Medicine, Surgery, and Midwifery:—H. St. C. Colson, J. F. O'Connell, F. C. Shone, and W. H. Vincent.

FOREIGN UNIVERSITY INTELLIGENCE.—*Basle:* Dr. Ernst Eltner has been appointed Lecturer on Odontology.—*Caracas:* Dr. F. Guevara Rojas has been appointed to the chair of Pathological Anatomy.—*Gratz:* Dr. M. Salzmann, of Vienna, has been appointed to the chair of Ophthalmology in succession to Dr. Dimmer.—*Groningen:* Dr. A. A. Hijmans van den Bergh, of Rotterdam, has been appointed to the chair of Clinical Medicine in succession to Dr. Wenckebach.—*Moscow:* Dr. A. Krinkoff has been recognised as *privat-docent* of Forensic Medicine.—*Prague (German University):* Dr. Hugo Pribram and Dr. Franz Bardachzi have been recognised as *privat-docenten* of Pathology.—*Würzburg:* Dr. Oskar Schultze has been promoted to the chair of Anatomy in succession to the late Dr. Ph. Stöhr. He is the son of a former professor of anatomy in Bonn and a nephew of the late Dr. K. A. S. Schultze, professor of anatomy in Greifswald.

UNIVERSITY OF LONDON: KING'S COLLEGE.—A course of four lectures will be delivered in the Physiological Laboratory, King's College, London, by Dr. Otto Rosenheim on the Bearing on Chemical Physiology of Certain Pathological Questions, at 4.30 P.M. on the following Mondays: Jan. 29th, Feb. 5th, 12th, and 19th. A discussion will be held on (1) the pathology of carbohydrate metabolism, including pentosuria; (2) the pathology of fat metabolism, including the rôle of cholesterin esters; (3) the anomalies of protein metabolism, including cystinuria, diaminuria, alkaptonuria, &c.; (4) the chemistry and the enzymes of tumours. These lectures are free to all members of King's College, London, to all internal students of the University of London, to all medical students in London, and to all medical men on presentation of their cards.

LITERARY INTELLIGENCE.—Mr. Murray's quarterly list of new publications contains several volumes likely to prove of special interest to medical men. Among them we find "The Poor-law Enigma," by Miss M. Fothergill Robinson, which contains an account and a criticism of the chief schemes for Poor-law administration now before the public; "The Genus Rosa," for those of botanical tastes, by Ellen Willmott, F.L.S., with drawings by Alfred Parsons, R.A., consisting of 128 coloured plates and 56 drawings in black and white; "Problems of Life and Reproduction," by Marcus Hartog, M.A., D.Sc; "The Anopheline Mosquito," by R. C. Dauglish; and a "Life of Paracelsus (Theophrastus von Hohenheim, 1493–1541)," by the late Miss Anna M. Stoddart.—Messrs. Constable and Co., Limited, are about to publish a work on "Post-mortems and Morbid Anatomy," by Mr. T. Shennan, F.R.C.S.Edin. The book is fully illustrated with photographs and colour plates. The same firm have also in the press a new work by Sir Almroth E. Wright, M.D., F.R.S., entitled "Handbook of

the Teat and Capillary Glass Tube and its Application in Medicine and Bacteriology." This volume is intended to provide for laboratory workers a training in technique, while being at the same time a critical text-book.

WE are informed that Dr. Marcus Sinclair Paterson, medical superintendent of the Brompton Hospital Sanatorium at Frimley, has been appointed medical director of the Welsh Memorial to King Edward VII.

LIVERPOOL MEDICAL INSTITUTION.—At the annual meeting of this institution held on Jan. 18th the following list of office-bearers and members of council was adopted, viz.:—President: *Robert Jones. Vice-Presidents: W. B. Paterson, C. S. Sherrington, *C. J. Macalister, and *J. Lloyd Roberts. Treasurer: *R. J. Hamilton. General Secretary: Thomas Bushby. Secretary of ordinary meetings: *Alexander Stookes. Secretary of pathological meetings: *W. Blair Bell. Librarian: J. C. M. Given. Editor of the journal: John Hay. Council: Arthur Evans, R. E. Kelly, R. W. MacKenna, J. E. O'Sullivan, C. V. Vereker, O. T. Williams, *T. R. Bradshaw, *T. B. Grimsdale, *E. W. Hope, *W. S. Henderson, *N. P. Marsh, and *C. E. Solomon. Auditors: *O. T. Williams and *Henry Harvey. Those marked (*) did not hold the same office last year.

THE SMITH TURNER EXHIBITION IN DENTAL MECHANICS.—This scholarship, of the annual value of £30, was founded (1) to do honour to James Smith Turner's memory; and (2) to help those students who, in the opinion of the Fund Committee, have financial difficulty in completing the dental curriculum. The scholarship is open to any registered dental student who has not completed the curriculum required for a dental qualification. The scholarship will be awarded after examination, and be tenable for one or two years, at the discretion of the committee. The scholarship money will be paid to a dental school in Great Britain or Ireland approved by the committee in discharge of fees. The examination in dental mechanics will be both practical and *viva voce*. The next examination will be held during April, 1912, at a dental school and on a date to be announced later. Applications must be received on or before March 15th next, addressed to the Secretary, British Dental Association, 19, Hanover-square, London, W.

ASSOCIATION OF SCHOOL MEDICAL OFFICERS FOR SCOTLAND.—A meeting of this association was held at Perth on Jan. 20th under the chairmanship of Dr. E. T. Roberts, the President. A discussion on the Control of Infectious Disease in Schools was opened by Dr. A. A. McWhan, who detailed the scheme in operation in the county of Berwick; Dr. J. Hally Meikle outlined the procedure in the city of Edinburgh; and the discussion was continued by Dr. A. Gilmour, Dr. C. C. Finlator, Dr. G. E. Moffet, and Dr. G. Arbuckle Brown. The afternoon session was occupied by a discussion on the Work of the School Medical Officer. Dr. Gilmour, in opening the discussion, laid special emphasis on the work of the school medical officer in relation to the cleansing of children, the attendance of parents at inspections, and the instructions to teachers in regard to defective children. Dr. Roberts, Dr. Meikle, Dr. Arbuckle Brown, Dr. Finlator, Dr. Moffet, Dr. McWhan, and Dr. A. E. Kidd took part in the discussion, which showed the necessity for different methods of procedure in different districts, town or county, to meet the special requirements of each locally. The election of office-bearers will take place at the annual meeting of the association to be held in Glasgow on Saturday, March 30th next.

THE BALNEOLOGICAL CONGRESS, BERLIN.—The Thirty-third Congress of the Balneological Society will be held at Berlin from March 7th to 11th, 1912, in the lecture hall of the Polyclinic Institute of the University, Ziegelstrasse, 18/19, Portal V. Forty-five papers have been accepted for submission to the congress. The President will be Geh. Med.-Rat Professor Brieger. All communications with reference to the congress should be addressed to the general secretary, Dr. Brock, Berlin, N.W. 52, Thomasiusstrasse, 24. The prize of the Dr. Heinrich Brock Foundation of the Balneological Society for an essay on "Comparative Researches upon the Rapidity of Absorption of Mineral Waters and the Influence thereof upon Renal Function" is announced for competition. The prize amounts to 800 marks. Essays must be addressed before Nov. 1st, 1912, to Professor Dr. Brieger, Berlin N.24, Ziegelstrasse, 18/19. Each essay must be provided with a motto, and accompanied by a sealed envelope, bearing the motto and containing the name and address of the author.

MESSRS. M. MEZGER and Co., 63, High Holborn, London, W.C., have been appointed by the Jetter and Scheerer Company, surgical instrument manufacturers of Tuttlingen, to act as their sole agents for the United Kingdom and British colonies.

PRESENTATION TO A MEDICAL PRACTITIONER.—On Jan. 19th, Mr. S. F. Lusk, M.B., C.M. Edin., who for the past seven years has been in active practice in Ballymoney, was made the recipient of an address and presented with a purse of sovereigns by his friends in that district on the occasion of his leaving to begin work in his new appointment as dispensary medical officer of Loughbrickland, County Down.

UNITED KINGDOM POLICE SURGEONS' ASSOCIATION.—The annual meeting of this association was held on Jan. 17th, at which the report of the council was presented. The report expresses its high appreciation of the *esprit de corps* which is now being shown by the members of the association, in common with the general body of the profession, in strenuously endeavouring to protect the interests of the faculty and maintain that high standard of medical service which is essential for the proper discharge of its important duties for the State and the responsibilities which each one undertakes as police surgeon. The council go on to regret that there still exists in our medical schools a need for improvement in the teaching and study of legal medicine, and hopes that the State will make better provision for its skilled medico-legal experts by giving them every opportunity for obtaining material for their work, so that they may be stimulated to specialise and pay greater attention to the study of the subject. The proposed coöperation with other societies of analogous nature—viz., medical officers of health, metropolitan police surgeons, Poor-law, postal, factory, and school medical officers and public vaccinators—is being discussed by the Police Surgeons' Association, and on this matter the council desire early instruction.

THE THIRTEENTH SOUTH AFRICAN MEDICAL CONGRESS.—This Congress will be held at Johannesburg in Easter week, April 8th to 15th, under the presidency of Sir Kendal Franks, C.B., M.D., F.R.C.S. Irel. All medical practitioners registered in South Africa are eligible for membership and such other persons as the local organising committee may approve. The subscription is a guinea. From about April 1st all South African railways will issue return tickets at single fares. Members are invited to contribute papers to sections in which they are interested, but the papers must be submitted to the local organising committee a month before the meeting. The honorary general secretary is Dr. G. Ritchie Thomson, P.O. Box 908, Johannesburg. Six sections are planned—namely, Medicine: Secretary, Dr. E. P. Baumann, Johannesburg. Discussion will be opened (subject not yet announced) by Dr. A. B. Ward, of Bloemfontein. Surgery: Secretary, Dr. H. Temple Mursell, Johannesburg. Mr. H. A. Moffatt, F.R.C.S., of Capetown, will open a discussion on Hernia with Special Reference to the Workmen's Compensation Act. Obstetrics: Secretary, Dr. St. J. Stanwell, Johannesburg. Dr. D. H. Wessels, of Capetown, will open a discussion on Uterine Hæmorrhage. Public Health: Secretary, Dr. P. G. Stock, Johannesburg. Dr. L. G. Haydon, of Durban, will open a discussion on Malaria and its Prevention, with Special Reference to South Africa. Pathology: Secretary Dr. G. A. Turner, Johannesburg. Special subjects: Secretaries, Dr. A. R. Friel, Johannesburg; Dr. R. P. Mackenzie, Johannesburg; and Dr. F. H. Napier, Johannesburg. In the last two sections the subjects for discussion and the names of the openers have not been announced.

BOOKS, ETC., RECEIVED.

BAILLIÈRE, TINDALL, AND COX, London.

Lectures on Midwifery. For Junior Students and Midwives. By A. B. Calder, M.B., M.R.C.S., Lecturer on Midwifery to London County Council, &c. Second edition. Price 5*s.* net.

BLACK, ADAM AND CHARLES, London.

Peeps at Industries. Sugar. By Edith A. Browne. Price 1*s.* 6*d.* net.

BOWES AND BOWES, Cambridge. MACMILLAN AND CO., LIMITED, London. MACLEHOSE, JAMES, AND SONS, Glasgow.

An Introduction to Eugenics. By William Cecil Dampier Whetham, M.A., F.R.S., Fellow and Tutor of Trinity College, Cambridge, and Catherine Durning Whetham, his Wife. Price 1*s.* net.

CABLE PRINTING AND PUBLISHING COMPANY, LIMITED, Hatton House, Great Queen-street, London, W.C.

The Modern Culture of Sweet Peas. By Thomas Stevenson, Member of the Executive and Floral Committees of the National Sweet Pea Society; Twice Winner of the Eckford Memorial Challenge Cup; Thrice Winner of the Provincial Cup, N.S.P.S.; and Judge at many of the Principal Shows. Price 1*s.* net.

CHURCHILL, J. AND A., London.

The Tobacco Habit, Its History and Pathology. A Study in Birth-rates, Smokers Compared with Non-smokers. By Herbert H. Tidswell, M.R.C.S. Eng., L.R.C.P. Lond. Price not stated.

CORNISH AND SONS, 37, Lord-street, Liverpool.

The Sick Public, the Doctors, and the National Insurance Act, 1911. By R. R. Rentoul, M.D. Price 1*s.* net; or 50 copies, 6*d.* each.

CROSBY LOCKWOOD AND SON, 7, Stationers' Hall Court, and 121A, Victoria-street, London, S.W.

Milk and Cream Testing and Grading Dairy Products. For School, Farm, and Factory. By G. Sutherland Thomson, F.R.S. Ed., B.D.F.A. Diploma, and N.D.D., late Government Dairy Expert for South Australia and Queensland. With an Introduction by Samuel Lowe. Price 4*s.* 6*d.* net.

DAVIDSON, F., 29, Great Portland-street, London, W.

Sight Testing for the General Practitioner. By F. Davidson. Tenth thousand. Fifth edition. Price 2*s.* 6*d.* net.

DORNAN, WILLIAM J., 701-709, Arch-street, Philadelphia, U.S.A.

The Triumphs of American Medicine in the Construction of the Panama Canal. By J. Ewing Mears, M.D., LL.D. Price not stated.

FORSTER GROOM AND CO., LIMITED, 15, Charing Cross, London, S.W.

Handbook on Military Sanitation for Regimental Officers. By Major K. B. Barnett, M.B., B.Ch., F.R.C.S.I., Royal Army Medical Corps. With an Introduction by Lieutenant-General Sir Horace L. Smith-Dorrien, K.C.B., D.S.O., A.D.C. Price 2*s.* 6*d.*

GIEVE, MATTHEWS, AND SEAGROVE, LIMITED, 65, South Molton-street (Brook-street), London, W., and at Portsmouth, Devonport, Chatham, Weymouth, and Sheerness.

How to Become a Naval Officer and Life at the Royal Naval Colleges at Osborne and Dartmouth. With Introduction by Admiral the Hon. Sir E. R. Fremantle, G.C.B., C.M.G., Rear-Admiral of the United Kingdom. Revised edition, 1911. Price not stated.

JUNGINGER-HEFTI, HERR, Bookseller, Arosa, Switzerland.

Where the World Ends. A Description of Arosa as a Centre for Summer Holidays or Winter Sport and as a Health Resort for Convalescents and Invalids. By A. A. H. Price Fr.3; post free in Switzerland, Fr.3.25; post free to England, 3*s.* postal order.

LAURIE, T. WERNER, Clifford's Inn, Fleet-street, London, E.C.

Alone in West Africa. By Mary Gaunt, Author of "The Uncounted Cost," &c. Price 15*s.* net.

In a Cottage Hospital. A Novel. By George Trelawney. Price 2*s.* net.

A Giver in Secret. By Thomas Cobb, Author of "The Future Mrs. Dering." Price 2*s.* net.

An Enemy to Society. By George Bronson-Howard. Illustrated by Arthur S. Covey. Price 6*s.*

MARLBOROUGH, E., AND CO., 51, Old Bailey, London, E.C.

Marlborough's Self-Taught Series. Arabic Self-Taught (Syrian). With English Phonetic Pronunciation. By A. Hassam. Enlarged and revised by the Rev. N. Odeh, late Chaplain to the Right Rev. G. F. P. Blyth, D.D., Bishop in Jerusalem. Fourth edition. Price, wrapper, 2*s.*; cloth, 2*s.* 6*d.*

MAXWELL, J., AND SON, Dumfries.

Witchcraft and Superstitious Record in the South-Western District of Scotland. By J. Maxwell Wood, M.B., Editor of "The Gallovidian," 1900-1911. Illustrated from Special Drawings by John Copland, Esq., Dundrennan. Price not stated.

MORGAN, R., 65, Westow-street, Norwood, London, S.E.

The British Astronomical Almanac, 1912. Edited by Miss Jenkins, Daughter of the late B. G. Jenkins, F.R.A.S. Twenty-second Year of Publication. Price 2*d.*; 2½*d.* post paid.

The British Weather Chart, 1912. Edited by Miss Jenkins. Twenty-sixth Year of Publication. Price, large size, 6*d.*; post free 6½*d.*; small size, 1*d.*; post free 1½*d.*

MURRAY AND EVENDEN, LIMITED, Pleydell House, Pleydell-street, Fleet-street, London, E.C.

Letters from China and Some Eastern Sketches. By Jay Denby. Illustrated by H. W. G. Hayter. Price 6*s.*

SIMPKIN, MARSHALL, HAMILTON, KENT, AND CO., LIMITED, London.

In the Valley of Vision. By G. M. Irvine, Author of "The Lion's Whelp." Price 2*s.* 6*d.* net.

UNIVERSITY COLLEGE HOSPITAL MEDICAL SCHOOL, London.

University College Hospital Medical School. (University of London.) Research Department. Director: Dr. Charles Bolton. Collected Papers. Vol. I. Price not stated.

WRIGHT AND POTTER PRINTING CO., 18, Post Office-square, Boston.

Forty-second Annual Report of the State Board of Health of Massachusetts. 1911. Price not stated.

Appointments.

Successful applicants for Vacancies, Secretaries of Public Institutions, and others possessing information suitable for this column, are invited to forward to THE LANCET *Office, directed to the Sub-Editor, not later than 9 o'clock on the Thursday morning of each week, such information for gratuitous publication.*

BURNETT, FRANK MARSDEN, M.D. Lond., has been appointed one of the Medical Referees under the Workmen's Compensation Act, 1906, for County Court Circuit No. 48, more particularly to Bromley and Sevenoaks County Courts.

HAMILTON, R., M.B., C.M. Glasg., has been appointed Certifying Surgeon under the Factory and Workshop Acts for the Coatbridge District of the county of Lanark

STEADMAN, F. ST. J., D.P.H., M.R.C.S., L.R.C.P., L.D.S., has been appointed Lecturer on Dental Histology and also Tutor to the National Dental Hospital College.

STEWART, THOMAS L. G., M.B., Ch.B. Glasg., has been appointed Junior House Surgeon at Birkenhead Borough Hospital.

WATT, J., M.B., Ch.B. Aberd., has been appointed Deputy Medical Officer of Health of Aberdeen.

Vacancies.

For further information regarding each vacancy reference should be made to the advertisement (see Index).

BARROW-IN-FURNESS, NORTH LONSDALE HOSPITAL.—House Surgeon. Salary £100 per annum, with board and lodging.

BERMONDSEY INFIRMARY, Lower-road, Rotherhithe, S.E. — Second Assistant Medical Officer. Salary £120 per annum, with rations, washing, apartments, and attendance.

BIRMINGHAM AND MIDLAND EYE HOSPITAL.—Resident Surgical Officer. Salary £100 per annum, with apartments, board, and attendance.

BRADFORD CITY EDUCATION COMMITTEE.—Assistants to School Medical Officer (male and female). Salary in each case £350 per annum.

BRENTFORD UNION.—Medical Officer for Hounslow District. Salary £175 per annum.

BRIDGWATER HOSPITAL.—House Surgeon for six months, unmarried. Salary at rate of £100 per annum, with lodging and washing.

BRISTOL ROYAL INFIRMARY.—House Physician. Salary £100 per annum. Also Obstetric and Ophthalmic House Surgeon. Salary £75 per annum. Also Resident Casualty Officer for six months. Salary at rate of £50 per annum. Each with apartments, board, and laundry.

BRITISH LYING-IN HOSPITAL, Endell-street, W.C.—Resident Medical Officer. Salary at rate of £50 per annum, including board, lodging, and washing.

BUXTON, DERBYSHIRE, DEVONSHIRE HOSPITAL.—Assistant House Physician for six months. Salary £100 per annum, with apartments, board, and laundry.

CAMBRIDGE, ADDENBROOKE'S HOSPITAL.—Second House Surgeon. Salary £80 per annum, with board, residence, and laundry.

CANCER HOSPITAL (FREE), Fulham-road, S.W.—Assistant Pathologist. Salary £350 per annum.

CHELSEA HOSPITAL FOR WOMEN, Fulham-road, S.W.—House Surgeon, unmarried. Salary £80 per annum. Also Clinical Assistant for three months.

CITY OF LONDON HOSPITAL FOR DISEASES OF THE CHEST, Victoria Park, E.—Two House Physicians for six months. Salary at rate of £75 per annum, with board and washing.

CROYDON GENERAL HOSPITAL.—Junior House Surgeon. Salary £75 per annum, with board, laundry, and residence.

EVELINA HOSPITAL FOR SICK CHILDREN, Southwark, London, S.E.—Surgeon to Out-patients.

GLAMORGAN COUNTY COUNCIL.—Medical Officer for Inspection of School Children. Salary £250 per annum, with travelling expenses.

GUILDFORD, ROYAL SURREY COUNTY HOSPITAL.—House Surgeon Salary £75 per annum, with board, residence, and laundry.

IPSWICH, EAST SUFFOLK AND IPSWICH HOSPITAL.—House Physician. Salary £70 per annum, with board, residence, and laundry.
KILMARNOCK INFIRMARY.—House Surgeon. Salary £80 per annum, with board, &c.
LONDON COUNTY COUNCIL.—Female Lecturers in First Aid, Home Nursing, Health and Infant Care. Salary £1 1s. a lecture. Also Deputy Medical Officer of Health and Deputy School Medical Officer of the County of London. Salary £1000 per annum.
MACCLESFIELD GENERAL INFIRMARY.—Junior House Surgeon. Salary £60 per annum, with board and residence.
MANCHESTER ROYAL INFIRMARY.—Medical Officer for six months. Salary at rate of £100 per annum, with board and residence.
NATIONAL HOSPITAL FOR THE PARALYSED AND EPILEPTIC, Queen-square, Bloomsbury.—Resident Medical Officer. Salary £100 per annum, with board and residence.
NEW HOSPITAL FOR WOMEN, Euston-road.—Pathologist and Assistant Pathologist. Also Clinical Assistants for the Out-patient Department. All females.
NOTTINGHAM GENERAL DISPENSARY.—Assistant Resident Surgeon, unmarried. Salary £160 per annum, with apartments, attendance, light, and fuel.
PRINCE OF WALES'S GENERAL HOSPITAL, Tottenham, N.—Honorary Dental Surgeon.
QUEEN CHARLOTTE'S LYING-IN HOSPITAL, Marylebone-road, N.W.—Resident Medical Officer for four months. Salary at rate of £60 per annum, with board, residence, and washing.
ROYAL WATERLOO HOSPITAL FOR CHILDREN AND WOMEN, S.E.—Junior Resident Medical Officer. Salary at rate of £50 per annum, with board and washing. Also Honorary Surgeon to the Throat, Nose, and Ear Department. Also Honorary Clinical Assistants to the Out-patient Staff.
ST. BARTHOLOMEW'S HOSPITAL.—Chief Assistants and Clinical Assistants in Aural Out-patient Department.
ST. MARY'S HOSPITAL FOR WOMEN AND CHILDREN, Plaistow, E.—Surgeon-in-Charge of X Ray Department. Salary £50 per annum.
ST. PANCRAS AND NORTHERN DISPENSARY, 126, Euston-road.—Resident Medical Officer, unmarried. Salary £105, with residence, attendance, and midwifery fees.
SALFORD COUNTY BOROUGH.—Assistant to Medical Officer of Health. Salary £250 per annum.
SALFORD ROYAL HOSPITAL.—Casualty House Surgeon. Salary at rate of £50 per annum, with board and residence.
SALISBURY INFIRMARY.—Assistant House Surgeon, unmarried. Salary £50 per annum, with apartments, board, lodging, and washing.
SCARBOROUGH HOSPITAL AND DISPENSARY.—Junior House Surgeon. Salary £80 per annum, with board, residence, &c.
SHERWOOD FOREST, RANSOM SANATORIUM FOR CONSUMPTIVES, near Mansfield, Notts.—Resident Medical Officer (female). Salary £100 per annum, with board, residence, and washing.
SUNDERLAND CHILDREN'S HOSPITAL.—Resident Medical Officer for six months. Salary £80 per annum, with board, residence, and laundry.
SUNDERLAND ROYAL INFIRMARY.—Junior House Surgeon for six months. Salary £80 per annum, with board, residence, and laundry.
WEST HAM AND EASTERN GENERAL HOSPITAL, Stratford.—Junior House Surgeon. Salary at rate of £75 per annum, with board, residence, and washing.
WINCHESTER, ROYAL HAMPSHIRE COUNTY HOSPITAL.—House Surgeon. Salary £80 per annum.
ZANZIBAR PUBLIC HEALTH DEPARTMENT.—Health and Quarantine Officer. Salary £600 per annum.

THE Chief Inspector of Factories, Home Office, London, S.W., gives notice of vacancies as Certifying Surgeons under the Factory and Workshop Act at Narborough, in the county of Leicester; and at Newent, in the county of Gloucester.

Births, Marriages, and Deaths.

BIRTHS.

BARTY KING.—On Jan. 21st, at "The Scores," Hadley Wood, the wife of Dr. D. Barty King, of a daughter.
THOMPSON.—On Jan. 20th, at Ferozepore, India, the wife of Major A. G. Thompson, R.A.M.C., of a daughter.

MARRIAGES.

BARKER—MCFARLANE.—On Jan. 20th, at All Saints' Church, Finchley-road, London, N.W., Alfred James Glanville Barker, M.D., to Agnes, daughter of the late Allan McFarlane, of Wellington Lodge, Lake Alexandrina, South Australia.

DEATHS.

BISS.—On Jan. 20th, at 2, Melina-place, St. John's Wood, N.W., Cecil Yates Biss, M.D., F.R.C.P., late of 135, Harley-street, W., aged 66. Friends kindly accept this, the only intimation.
BUTLIN.—On Jan. 24th, at his residence, 82, Harley-street, Sir Henry T. Butlin, Bart., D.C.L., LL.D., F.R.C.S., aged 66.
CHRISTISON.—On Jan. 21st, at Magdala-crescent, Edinburgh, David, Christison, M.D., LL.D., in his 82nd year.
KINGDON.—On Jan. 21st, at Heavitree House, Exeter, William Dashwood Kingdon, M.D., aged 93.
PERRY.—On Jan. 21st, at Fortfield-place, Sidmouth, Brigade-Surgeon George Perry, late Coldstream Guards, aged 78.

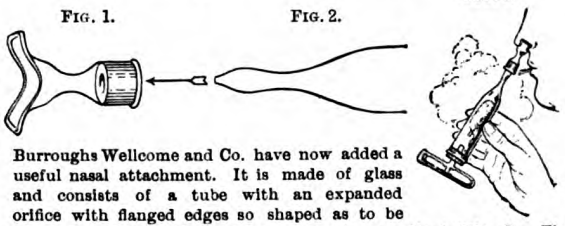
N.B.—A fee of 5s. is charged for the insertion of Notices of Births, Marriages, and Deaths.

Notes, Short Comments, and Answers to Correspondents.

NASAL ATTACHMENT FOR THE "VAPOROLE" AMMONIUM CHLORIDE INHALER.

IN THE LANCET of Jan. 15th, 1910, p. 182, we described an ammonium chloride inhaler introduced by Messrs. Burroughs Wellcome and Co. The inhaler consisted of a T-tube attached to a wide glass tube terminating in a mouth-piece, and it presented some advantages with regard to the blending and filtering of the vapours arising from the ammonia and acid contained in the T-tube. The apparatus, however, possessed no convenient means of using the inhaler for nasal inhalations. Messrs. Burroughs Wellcome and Co. have now added a useful nasal attachment. It is made of glass and consists of a tube with an expanded orifice with flanged edges so shaped as to be adapted to the physical configuration of any patient (Fig. 1). The attachment is fitted with a rubber plug having a hole to receive the mouth-piece of the inhaler (Fig. 2). Fig. 3 shows the inhaler applied to the nose. This form of nose-piece is perhaps to be preferred both on hygienic and æsthetic grounds to other forms which require to be inserted in the nares.

FIG. 1. FIG. 2. FIG. 3.



HOW MUCH ALCOHOL MAY BE FORMED LOCALLY IN THE STOMACH?

To the Editor of THE LANCET.

SIR,—I shall be obliged if any reader will inform me if any considerable percentage of alcohol, presumably due to local fermentation, is often found in the stomach. I am, Sir, yours faithfully,

IOTA.

A KEY TO NATURAL MINERAL WATERS.

WE have received from Messrs. Ingram and Royle, Limited, of 45, Belvedere-road, London, S.E., a copy of their pamphlet on "Natural Mineral Waters; their Properties and Uses." The compilation is most useful for reference, as not only are the details of analysis of the various natural waters set out, but short notes also are inserted as to the cases for which they are suitable. The appendix also contains a convenient summary of dietetic and therapeutic indications. The waters are classified into (1) aperient waters, (2) alkaline waters, (3) ferruginous or chalybeate waters, (4) sulphurous waters, (5) arsenical waters, (6) lithiated waters, (7) table waters, and (8) special waters.

COMMUNICATIONS not noticed in our present issue will receive attention in our next.

A DIARY OF CONGRESSES.

WE shall publish this diary from time to time that our readers may have under their hands the dates of the approaching scientific Congresses. It is unnecessary to issue the lists of all these functions week by week, and we propose to make only such gatherings as will occur in the immediate future the subject of regular announcement. The following Congresses, Conferences, and Exhibitions are announced for the next few months:—

Jan. 20th–27th (Hong-Kong).—Second Biennial Congress of the Far Eastern Association of Tropical Medicine.
Feb. 13th–14th (London).—Central Poor-Law Conference.
March 7th–11th (Berlin).—Thirty-third Balneological Congress.
March 23rd–April 4th (London, Royal Agricultural Hall).—International Smoke Abatement Exhibition.
April 1st and 2nd (Milan).—Italian National Convention upon the Sexual Question.
" (London).—First Congress of Pure Food and Health Society of Great Britain.
" 1st–7th (Tunis).—Twenty-second Congress of French-speaking Alienists and Neurologists.
" 8th–13th (Rome).—Seventh International Congress of Dermatology and Syphilology.
" 8th–15th (Johannesburg).—Thirteenth South African Medical Congress.
" 9th (Paris).—Congress of Physiotherapy for French-speaking Physicians.
" 9th–13th (Giessen).—Congress on Study of Families, Inheritance, and Race Hygiene.
" 10th–13th (Berlin).—Forty-first Congress of the German Surgical Society.
" 14th–20th (Rome).—Seventh International Congress on Tuberculosis.

April 15th–18th (Wiesbaden).—Twenty-ninth German Congress for Internal Medicine.
,, 21st–24th (Munich).—Twenty-sixth Meeting of the Anatomical Society.
,, (London, Olympia).—Ideal Homes Exhibition.
Spring (London).—Second Optical Convention.

Medical Diary for the ensuing Week.

SOCIETIES.

ROYAL SOCIETY OF MEDICINE, 15, Cavendish-square, W. (temporary address during building of new house).

THURSDAY.

OBSTETRICAL AND GYNÆCOLOGICAL SECTION (Hon. Secretaries—J. H. Targett, W. W. H. Tate), at 11, Chandos-street, W., at 8 P.M.

Specimens:

Dr. Inglis Parsons: (1) Fibroid Tumour of the Uterus undergoing Degeneration; (2) Fibroid Uterus Removed 20 Years after Apostoli's Treatment.

Dr. Dauber: Suppurating Ovarian Cystoma, with Sarcomatous Degeneration of the Wall.

Dr. W. S. A. Griffith: (1) Assimilation Rachitic Pelvis; (2) Supravaginal Hysterectomy performed in Place of Induction of Abortion in a Case of Repeated Melancholia of Pregnancy.

Short Communication:

Dr. H. A. Colwell and Dr. Bryden Glendining: The Presence of Blood Pigment in the Fæces of the New Born.

Paper:

Dr. G. T. Western: The Treatment of Puerperal Septicæmia by Bacterial Vaccines.

FRIDAY.

LARYNGOLOGICAL SECTION (Hon. Secretaries—W. H. Kelson, Dan McKenzie), at 11, Chandos street, W.: at 4.30 P.M.

Cases

Will be shown by Mr. Herbert Tilley, Dr. W. H. Kelson, and others.

SECTION OF ANÆSTHETICS (Hon. Secretaries—Mrs. Dickinson Berry, H. J. Scharlieb, C.M.G.): at 8.30 P.M.

Dr. P. S. Frew: The Significance of Acetonuria in Children.

Mrs. Dickinson Berry: Notes of a Case of Post-anæsthetic Poisoning; and Report on Experiments on Animals by Dr. A. L. Muskens made to Investigate the After-effects of Chloroform.

Mr. R. E. Apperley: Microscopical Specimens of Kidney and Liver from Cases of Post-chloroform Poisoning.

Discussion

On the Advisability of Rendering Official One or More of the Newer Local or Spinal Anæsthetics (introduced by the President).

NORTH-EAST LONDON CLINICAL SOCIETY, Prince of Wales's Hospital, Tottenham, N.

THURSDAY.—4.15 P.M., Clinical Cases.

HARVEIAN SOCIETY OF LONDON, Paddington Green Children's Hospital, W.

THURSDAY.—8.15 P.M., Cases will be shown by Members of the Hospital Staff. 9 P.M., Clinical Meeting.

WEST LONDON MEDICO-CHIRURGICAL SOCIETY, West London Hospital, Hammersmith-road, W.

FRIDAY.—8 P.M., Pathological Evening.

LECTURES, ADDRESSES, DEMONSTRATIONS, &c.

MEDICAL GRADUATES' COLLEGE AND POLYCLINIC, 22, Chenies-street, W.C.

MONDAY.—4 P.M., Dr. H. MacCormac: Clinique (Skin). 5.15 P.M. Lecture:—Dr. W. Hill: The Difficulties and Dangers surrounding the Treatment of Chronic Laryngeal Stenosis. (Patients shown.)

TUESDAY.—4 P.M., Dr. G. Rankin: Clinique (Medical). 5.15 P.M., Lecture:—Mr. B. Robinson: Stones in the Gall-bladder, their Complications and Surgical Treatment.

WEDNESDAY.—4 P.M., Mr. J. Cunning: Clinique (Surgical). 5.15 P.M., Lecture:—Mr. E. Clarke: Presbyopia and its Treatment.

THURSDAY.—4 P.M., Dr. L. Williams: Clinique (Medical). 5.15 P.M., Lecture:—Sir F. C. Wallis: Treatment of Joint Effusions and of Some Fractures.

FRIDAY.—4 P.M., Mr. R. E. Bickerton: Clinique (Eye).

POST-GRADUATE COLLEGE, West London Hospital, Hammersmith-road, W.

MONDAY.—10 A.M., Dr. Simson: Diseases of Women. 10.30 A.M., Surgical Registrar: Demonstration of Cases in Wards. 12 noon, Dr. Bernstein: Pathological Demonstration. 2 P.M., Medical and Surgical Clinics. X Rays. Operations. 2.30 P.M., Mr. Dunn: Diseases of the Eye. 5 P.M., Lecture:—Dr. G. Stewart: Clinical (Lecture II.).

TUESDAY.—10 A.M., Dr. Robinson: Gynæcological Operations. 11.30 A.M., Mr. Etherington-Smith: Demonstration of Minor Operations. 2 P.M., Medical and Surgical Clinics. X Rays. Operations. Dr. Davis: Diseases of the Throat, Nose, and Ear. 2.30 P.M., Dr. Abraham: Diseases of the Skin. 5 P.M., Lecture:—Dr. Morton: The Use of Carbon Dioxide Snow.

WEDNESDAY.—10 A.M., Dr. Saunders: Diseases of Children. Dr. Davis: Operations of the Throat, Nose, and Ear. 10.30 A.M., Surgical Registrar: Demonstration of Cases in Wards. 2 P.M., Medical and Surgical Clinics. X Rays. Operations. Mr. E. Harman: Diseases of the Eye. 2.30 P.M.. Dr. Simson: Diseases of Women. 5 P.M., Lecture:—Dr. Beddard: Practical Medicine. (Lecture II.)

THURSDAY.—10 A.M., Dr. Simson: Gynæcological Demonstration. 12.15 P.M., Lecture:—Dr. G. Stewart: Practical Medicine. 2 P.M., Medical and Surgical Clinics. X Rays. Operations. 2.30 P.M., Mr. Dunn: Diseases of the Eye. 5 P.M., Lecture:—Mr. Armour: Symptoms and Treatment of Gall Stones.

FRIDAY.—10 A.M., Dr. Robinson: Gynæcological Operations. 12.15 P.M., Dr. Pritchard: Practical Medicine. 2 P.M., Medical and Surgical Clinics. X Rays. Operations. Dr. Davis: Diseases of the Throat, Nose, and Ear. 2.30 P.M., Dr. Abraham: Diseases of the Skin. 5 P.M., Lecture:—Dr. Abraham: Cases of Skin Disease.

SATURDAY.—10 A.M., Dr. Saunders: Diseases of Children. Dr. Davis: Operations of the Throat, Nose, and Ear. Mr. Bishop Harman: Diseases of the Eye. 10.30 A.M., Medical Registrar: Demonstration of Cases in Wards. 2 P.M., Medical and Surgical Clinics. X Rays. Operations.

NORTH-EAST LONDON POST-GRADUATE COLLEGE, Prince of Wales's General Hospital, Tottenham, N.

MONDAY.—Clinics:—10.30 A.M., Surgical Out-patient (Mr. E. Gillespie). 2.30 P.M., Medical Out-patient (Dr. T. R. Whipham): Nose, Throat, and Ear (Mr. H. D. Gillies). 3 P.M., Clinical Pathology and Pathological Demonstration (Dr. W. H. Duncan).

TUESDAY.—Clinic: 2.30 P.M., Operations. Clinics:—Medical Out-patient (Dr. A. G. Auld).; Surgical (Mr. Howell Evans); Gynæcological (Dr. A. E. Giles). 3.30 P.M., Medical In-patient (Dr. A. J. Whiting).

WEDNESDAY.—Clinics:—2 P.M., Throat Operations (Mr. Gillies). 2.30 P.M., Children's Out-patient (Dr. T. R. Whipham); Skin (Dr. G. N. Meachen): Eye (Mr. R. P. Brooks). 3 P.M., X Rays (Mr. W. Steuart); Clinical Pathology and Pathological Demonstration (Dr. W. H. Duncan). 4.30 P.M., Lecture:—Mr. H. D. Gillies: Tumours of the Larynx. 5.30 P.M., Eye Operations (Mr. Brooks).

THURSDAY.—2.30 P.M., Gynæcological Operations (Dr. A. E. Giles). Clinics:—Medical Out-patient (Dr. A. J. Whiting); Surgical (Mr. Carson). 3 P.M., Medical In-patient (Dr. G. P. Chappel).

FRIDAY.—2.30 P.M., Operations. Clinics:—Medical Out-patient (Dr. A. G. Auld): Surgical (Mr. E. Gillespie); Eye (Mr. R. P. Brooks). 3 P.M., Medical In-patient (Dr. R. M. Leslie): Clinical Pathology and Pathological Demonstration (Dr. W. H. Duncan).

LONDON SCHOOL OF CLINICAL MEDICINE, Dreadnought Hospital, Greenwich.

MONDAY.—2 P.M., Operations. 2.15 P.M., Mr. Turner: Surgery. 3.15 P.M., Sir Dyce Duckworth: Medicine. 4.30 P.M., Mr. R. Lake: Ear and Throat. Out-patient Demonstrations:—10 A.M., Surgical and Medical. 12 noon, Ear and Throat. 2.15 P.M., Special Lecture:—Mr. Turner; Some Common Swellings of the Breast.

TUESDAY.—2 P.M., Operations. 3.15 P.M., Dr. R. Wells: Medicine. 2.15 P.M., Mr. R. Carling: Surgery. 4.15 P.M., Sir M. Morris: Diseases of the Skin. Out-patient Demonstrations:—10 A.M., Surgical and Medical. 12 noon, Skin. 4.30 P.M., Special Lecture:—Dr. G Holmes: Functional and Organic Paralysis.

WEDNESDAY.—2 P.M., Operations. 2.15 P.M., Dr. F. Taylor: Medicine. 3.30 P.M., Mr. Cargill: Ophthalmology. Out-patient Demonstrations:—10 A.M., Surgical and Medical. 11 A.M., Eye. 5 P.M., Special Demonstration (or Lecture):—Mr. McGavin: Surgical.

THURSDAY.—2 P.M., Operations. 2.15 P.M., Dr. G. Rankin: Medicine. 3.15 P.M., Sir W. Bennett: Surgery. Out-patient Demonstrations:—10 A.M., Surgical and Medical. 12 noon, Ear and Throat. 4.30 P.M., Special Lecture:—Dr. Gandy: Anæsthetics.

FRIDAY.—2 P.M., Operations. 2.15 P.M., Sir J. Rose Bradford: Medicine. 3.15 P.M., Mr. McGavin: Surgery. Out-patient Demonstrations:—10 A.M., Surgical and Medical. 12 noon, Skin. 2.15 P.M., Special Lecture:—Sir John Bradford: Arterio-Sclerosis.

SATURDAY.—10 A.M., Radiography. 11 A.M., Dr. A. Davies: Pathological Demonstration. 2 P.M., Operations. Out-patient Demonstration:—10 A.M., Surgical and Medical. 11 A.M., Eye.

HOSPITAL FOR SICK CHILDREN, Great Ormond-street, W.C.

THURSDAY.—4 P.M., Lecture:—Mr. Addison: Mastoid Disease and its Complications.

NATIONAL HOSPITAL FOR THE PARALYSED AND EPILEPTIC Queen-square, Bloomsbury, W.C.

TUESDAY.—3.30 P.M., Clinical Lecture:—Mr. L. Paton: Optic Atrophy.

FRIDAY.—3.30 P.M., Clinical Lecture:—Mr. S. Scott: Peripheral Mechanism of Sound Perception

ST. JOHN'S HOSPITAL FOR DISEASES OF THE SKIN, 49, Leicester-square, W.C.

TUESDAY.—6 P.M., Mr. W. Hampson: X Ray; Lupus and Rodent Ulcer.

THURSDAY.—6 P.M., Chesterfield Lecture:—Dr. M. Dockrell: Fungous Diseases of Hair—I., Hyphogenic Sycosis; II., Tinea.

UNIVERSITY OF LONDON (UNIVERSITY COLLEGE), The Francis Galton Laboratory for National Eugenics.

TUESDAY.—8.30 P.M., Mr. K. Pearson: Sir Francis Galton—His Life and Parentage. (Lecture I.)

ROYAL INSTITUTION OF GREAT BRITAIN, Albemarle-street, Piccadilly, W.

TUESDAY.—3 P.M., Prof. W. Bateson: The Study of Genetics. (Lecture III.)

FRIDAY.—9 P.M., Sir James M. Davidson: Vital Effects of Radium and Other Rays.

ANCOATS HOSPITAL, Manchester.

THURSDAY.—4.15 P.M., Dr. F. C Moore: Gastric Ulcer. (Post-Graduate Clinic.)

MANCHESTER ROYAL INFIRMARY.

MONDAY.—4.30 P.M., Dr. J. Bury: Some Varieties of Atrophic Paralysis.

FRIDAY.—4.30 P.M., Mr. A. H. Burgess: An Analysis of 500 Consecutive Operations for Acute Appendicitis, with Remarks on Diagnosis and Treatment.

OPERATIONS.

METROPOLITAN HOSPITALS.

MONDAY (29th).—London (2 P.M.), St. Bartholomew's (1.30 P.M.), St. Thomas's (3.30 P.M.), St. George's (2 P.M.), St. Mary's (2.30 P.M.), Middlesex (1.30 P.M.), Westminster (2 P.M.), Chelsea (2 P.M.), Samaritan (Gynæcological, by Physicians, 2 P.M.), Soho-square (2 P.M.), Gt. Northern Central (2.30 P.M.), West London (2.30 P.M.), London Throat (9.30 A.M.), Royal Free (2 P.M.), Guy's (1.30 P.M.), Children, Gt. Ormond-street (9 A.M.), St. Mark's (2.30 P.M.), Central London Throat and Ear (Minor 9 A.M., Major 2 P.M.).

TUESDAY (30th).—London (2 P.M.), St. Bartholomew's (1.30 P.M.), St. Thomas's (3.30 P.M.), Guy's (1.30 P.M.), Middlesex (1.30 P.M.), Westminster (2 P.M.), West London, (2.30 P.M.), University College (2 P.M.), St. George's (1 P.M.), St. Mary's (1 P.M.), St. Mark's (2.30 P.M.), Cancer (2 P.M.), Metropolitan (2.30 P.M.), London Throat (9.30 A.M.), Samaritan (9.30 A.M. and 2.30 P.M.), Throat, Golden-square (9.30 A.M.), Soho-square (2 P.M.), Chelsea (2 P.M.), Children, Gt. Ormond-street (9 A.M. and 2 P.M., Ophthalmic, 2 P.M.), Tottenham (2.30 P.M.), Central London Throat and Ear (Minor, 9 A.M., Major, 2 P.M.), Royal National Orthopædic (9.30 A.M. and 4 P.M.).

WEDNESDAY (31st).—St. Bartholomew's (1.30 P.M.), University College (2 P.M.), Royal Free (2 P.M.), Middlesex (1.30 P.M.), Charing Cross (3 P.M.), St. Thomas's 2 P.M.), London (2 P.M.), King's College (2 P.M.), St. George's (Ophthalmic, 1 P.M.), St. Mary's (2 P.M.), St. Peter's (2 P.M.), Samaritan (9.30 A.M. and 2.30 P.M.), Gt. Northern Central (2.30 P.M.), Westminster (2 P.M.), Metropolitan (2.30 P.M.), London Throat (9.30 A.M.), Cancer (2 P.M.), Throat, Golden-square (9.30 A.M.), Guy's (1.30 P.M.), Royal Ear (2 P.M.), Children, Gt. Ormond-street (9 A.M. and 9.30 A.M., Dental, 2 P.M.), Tottenham (Ophthalmic, 2.30 P.M.), West London (2.30 P.M.), Central London Throat and Ear (Minor, 9 A.M., Major, 2 P.M.).

THURSDAY (1st).—St. Bartholomew's (1.30 P.M.), St. Thomas's (3.30 P.M.), University College (2 P.M.), Charing Cross (3 P.M.), St. George's (1 P.M.), London (2 P.M.), King's College (2 P.M.), Middlesex (1.30 P.M.), St. Mary's (2.30 P.M.), Soho-square (2 P.M.), North-West London (2 P.M.), Gt. Northern Central (Gynæcological, 2.30 P.M.), Metropolitan (2.30 P.M.), London Throat (9.30 A.M.), Samaritan (9.30 A.M and 2.30 P.M.), Throat, Golden-square (9.30 A.M.), Guy's (1.30 P.M.), Royal National Orthopædic (9 A.M. and 3.30 P.M.), Royal Ear (2 P.M.), Children Gt. Ormond-street (9 A.M. and 2 P.M.), Tottenham (Gynæcological, 2.30 P.M.), West London (2.30 P.M), Central London Throat and Ear (Minor, 9 A.M., Major, 2 P.M.).

FRIDAY (2nd).—London (2 P.M.), St. Bartholomew's (1.30 P.M.), St. Thomas's (3.30 P.M.), Guy's (1.30 P.M.), Middlesex (1.30 P.M.), Charing Cross (3 P.M.), St. George's (1 P.M.), King's College (2 P.M.), St. Mary's (2 P.M.), Ophthalmic (10 A.M.), Cancer (2 P.M.), Chelsea (2 P.M.), Gt. Northern Central (2.30 P.M.), West London (2.30 P.M.), London Throat (9.30 A.M.), Samaritan (9.30 A.M. and 2.30 P.M.), Throat, Golden-square (9.30 A.M.), Royal National Orthopædic (3.30 P.M.), Soho-square (2 P.M.), Children, Gt. Ormond-street (9 A.M., Aural, 2 P.M.), Tottenham (2.30 P.M.), St. Peter's (2 P.M.)., Central London Throat and Ear (Minor, 9 A.M., Major, 2 P.M.).

SATURDAY (3rd).—Royal Free (9A.M.), London (2 P.M.), Middlesex (1.30 P.M.), St. Thomas's (2 P.M.), University College (9.15 A.M.), Charing Cross (2 P.M.), St. George's (1 P.M.), St. Mary's (10 A.M.), Throat, Golden-square (9.30 A.M.), Guy's (1.30 P.M.), Children, Gt. Ormond-street (9 A.M. and 9.30 A.M.), West London (2.30 P.M.).

At the Royal Eye Hospital (2 P.M.), the Royal London Ophthalmic (10 A.M.), the Royal Westminster Ophthalmic (1.30 P.M.), and the Central London Ophthalmic (2 P.M.), Hospital operations are performed daily.

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THE INDEX TO THE LANCET.

The Index and Title-page to Vol. II. of 1911 were given in THE LANCET of Dec. 30th, 1911.

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METEOROLOGICAL READINGS.

(Taken daily at 8.30 a.m. by Steward's Instruments.)

THE LANCET Office, Jan. 24th, 1912.

Date.	Barometer reduced to Sea Level and 32° F	Direction of Wind.	Rain fall.	Solar Radio in Vacuo.	Maximum Temp. Shade.	Min. Temp.	Wet Bulb.	Dry Bulb.	Remarks.
Jan. 18	29·88	S.E.	0·59	44	44	33	34	34	Raining
,, 19	30·14	E.	0·03	46	45	34	38	38	Foggy
,, 20	30·00	E.	0·15	54	48	38	44	44	Overcast
,, 21	30·13	S.W.	...	46	44	39	40	41	Overcast
,, 22	29·93	S.	...	46	43	38	39	39	Overcast
,, 23	29·72	E.	0·28	45	44	39	41	42	Overcast
,, 24	29·53	E.	0·35	56	48	39	39	40	Raining

The following journals, magazines, &c., have been received:—British Journal of Dermatology, Hospital Assistant (India), St. Mary's Hospital Gazette, Local Government Review, Sleeping Sickness Bulletin, Journal of Obstetrics and Gynæcology of the British Empire, Guy's Hospital Gazette, British Journal of Dental Science, American Journal of Obstetrics, Middlesex Hospital Journal, The Therapist, Dublin Medical Journal, American Medicine, La Tuberculosi, Archivos Brasileiros de Medicina Revista de los Hospitales, Journal d'Urologie, Revue de Médecine, Revue de Chirurgie, Archives Générales de Médecine.

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NOTES OF

A Lecture

ON

MEDICO-LEGAL RELATIONSHIPS OF GENERAL PARALYSIS OF THE INSANE.

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GENTLEMEN,—There is no doubt of the utility of bringing groups of conditions together and looking at them from a special standpoint, and I have to-day selected the medico-legal relationships of general paralysis of the insane.

INTRODUCTORY REMARKS.

General paralysis of the insane is one of the most interesting forms of brain disease associated with mental disorder. The disease is more or less definite in its course and in its fatal terminations, and it is pretty certain that syphilis is one of its most certain causes. Taking these facts into consideration, it is probably only a question of time before we discover some treatment which will arrest, if it does not cure it. If it is to be cured it must be detected early, and the medico-legal aspect brings one into relationship with many of the earlier cases and therefore is specially interesting.

General paralysis does not need here either a definition or a description, but I shall have to refer to several forms of the disorder and to different social dangers which may arise in these different forms or at different stages of the disease. First, there is the warning or prodromal stage, next there is the more acute stage, then the placid one which passes into the demented one. At each period there are particular dangers.

The greatest danger arises during the earlier stages, though in the weak-minded one there is risk of the patient becoming through his facility the tool of others. In the warning stage the chief characteristic is some loss of higher control so that the actions follow feeling rather than reason. They are often impulsive.

The result of defective control varies with the individual, and may either be represented by anger, violent language, and even brutal acts, by improper companionships and sexual faults of various kinds, or by marked acquisitiveness—the senseless taking of things for which there is no real want.

BRUTAL ASSAULTS.

First, then, a certain number of brutal assaults are made in the earlier stages of general paralysis of the insane. When we recognise the degrading tendency of the disease, with its inclination to seek for companions those belonging to a lower social order, it will be seen how the conditions leading to disorder of conduct are provided. Bad companions and drink, to which the general paralytic easily succumbs, may lead to violent personal attacks; and it is important to remember this, especially those of you who have anything to do with police cases, for I have known men who were general paralytics taken up for disorder of conduct, and when in the cells have been seen by medical men who have diagnosed drink from the alteration in speech which was really due to the disease, not to drink. In these cases there is no premeditation, and the attacks as a rule are impulsive and are not followed up. There is often regret at the actions and a wish to make amends.

SEXUAL RELATIONS AND OFFENCES.

General paralysis has always been looked upon as a disease in which the sexual functions play an important part. Formerly, sexual excess was considered the chief contributing cause, and now one recognises as an early symptom great development of desire, often with lack of power. In early general paralysis lust is almost always present, and may lead to what appears as a normal affection with offers of marriage. I regret to say I have seen such cases of marriage in haste and regret, on the wife's part, at leisure. The lust may be very great, and an insatiable longing which is very trying to the wife, or there may be, as in some cases with tabetic symptoms, desire which passes off very rapidly, leaving the man impotent. I have never had a case in which a plea for nullity of marriage under these conditions has been raised, but in several cases I should like it to have been brought to the test of the law courts.

Next, adultery is common among these patients, and in some cases I believe divorce has been obtained from a husband suffering from general paralysis whose disease was the cause of his immorality. The courts have so far never looked upon the plea of insanity as a very justifiable one in divorce cases. The general feeling seems to be that adultery is the one thing to be considered, and the contributing cause, insanity, is to be left out. The loss of higher control leads not only to adultery, but to the marriage of general paralytics with persons of immoral character. I have known several general paralytics who have married their mistresses or have married women of notoriously bad character. Besides this, general paralytics with general exaltation take it for granted that any woman will accept them. They, feeling so endowed with riches and honour, only have to seek to get, and under these conditions indecent suggestions or assaults may arise, the man believing that the woman was willing or even encouraging him. More common still in my experience has been indecent exposures. I think in some cases that general paralysis is a good plea for cases of indecent exposure. Indecent assaults on children are made by some men who have lost their higher control. In these cases there is, as a rule, a silly childishness about the acts; they are not brutally violent, but they are often done openly and without attempt at denial or evasion. In epilepsy there may also be fierce eroticism, but the acts are brutally carried out and there is honest denial due to complete loss of consciousness of the acts. The indecent cases of the general paralytic resemble in many ways those which not infrequently are seen in police reports in reference to old men, but in these last there is generally denial, but not of the honest type of the epileptic. It is evasive and easily controverted. In a few cases I have met with sexual perversion and unnatural offences in general paralytics. The patient is generally rather the victim or passive agent, being facile in immorality as in other things. To sum up on this matter, in any case of indecent exposure or assault perpetrated by a middle-aged man be on the look-out for the physical signs of general paralysis.

ACQUISITIVENESS.

As in so many other respects the general paralytic reverts of a simple uncontrolled nature, so it is in relation to property. The child takes what happens to be near him and what at the moment attracts his attention or something which appeals to his simpler desires or appetites. I remember several men who were admitted to Bethlem Hospital after they had been brought before the magistrates for petty thefts. Books from open bookstalls and sheets of music from similar places were the attractions. The attraction of jewellery was great also. The absolute value of things does not appeal so much to the patient as does his value of them. I have known a man take perfectly useless and valueless things for which at the moment he thought he had a distinct use, something which he felt was essential for some great scheme which he was starting. These petty thefts are most common in the earlier stage of the disease; later on the thefts may depend on quite another symptom of the disorder. How can you consider a man to be a thief if he feels that the whole world belongs to him, or that he is so rich that he can repay anyone for anything which he takes. It is thus I have known a man take valuable rings to give to the lady of his love. I have known general paralytics write cheques for large sums on banks at which they had no account. They would not forge a signature, but, fully believing they had money at the bank, would sign cheques. Very serious complications have arisen as the result of patients in the excited stage entering into big speculations, buying recklessly stocks and shares, ordering houses and furniture; as may be imagined, but yet hardly to be expected, I have known a man make a fortune in the earlier stage of this disease. At the time there was a boom—I think it was in nitrates; but any way he bought as freely as he could, and by the time he was in the asylum his speculations had proved a success.

CRIMINAL ACTS.

The criminal acts of general paralytics, as a rule, are not marked by any definite plan, uncontrolled impulse being the general cause, but though not common, yet occasionally general paralytics suffer from hallucinations and may have many of the symptoms of delusional insanity with ideas of persecution, and in such cases patients may be goaded to acts of violence.

CRIMINAL LUNATICS SUFFERING FROM GENERAL PARALYSIS

I have obtained some reports from the English and the Irish criminal lunatic asylums which are of interest, and I will give only the general results. I was surprised to see how rare it is to find criminal lunatics suffering from general paralysis. Dr. G. T. Revington, of Dundrum, tells me that in 20 years he has only had 8 cases of the disease, and Dr. John Baker, of Broadmoor, says that in the 50 years since the opening of the asylum only 58 general paralytics have been admitted. In Dundrum 2 were accused of murder, 2 with sexual crime, the rest with crimes against property. Of the Broadmoor patients, 16 were convicted of murder or serious assaults, 5 were guilty of sexual faults, and 36 of offences against property, including arson, burglary, and the like. As I have already said, it is interesting to find so few criminal lunatic general paralytics. In part this is explained by some of those who have committed thefts being sent to ordinary asylums and never being sent to the State one.

INJURY AND GENERAL PARALYSIS.

Recently a very important practical point has arisen in relationship to the part that injury may play in the production of general paralysis. In questions of compensation for injuries leading to death and also in cases of life insurance it may be contended that injury alone would not have caused the disease. You will recognise that now the great majority of authorities look upon general paralysis and locomotor ataxy as almost certainly associated with, if not fully resulting from, syphilis. Yet I find even such an authority as Dr. F. W. Mott hesitating when asked if it is impossible for general paralysis to arise from accident alone. He, I think, agrees with my experience, which is, that in a very large majority of cases of general paralysis syphilis of long standing can be established, but that this disease alone is not the only factor. The question of heredity comes in, and the illuminating work of Mott inclines one to think that just as with alcoholic poisoning certain persons suffer in their brains while others do so in their general viscera, so with syphilis in some the stress of the disease falls upon the nerve centres, while in others it selects other parts such as the skin or the bones.

To return to the main point, though syphilis is most commonly associated with general paralysis, yet it requires other elements to start the disease. I believe that meat diet and alcohol are factors in many cases, and incidentally I may say that one superintendent of a large asylum told me that with general paralytics he hardly ever gave a meat diet, and as a result the acute phases and the epileptiform seizures had vanished from the asylum.

I have, as most of you must by now know, been in the habit of saying that syphilis seemed to ripen the brain for decay, and that any accident from within or from without might lead to the rottenness or decay. It therefore comes to this:—A man, who many years before had syphilis, was properly treated, and has been a healthy man, receives a blow on his head, which renders him insensible. He may recover from this, but within a few months some alteration is noticed in his conduct. If in one of the services, he gets into trouble by faults of irregularity or unpunctuality. He is irritable and forgetful; slowly the other signs of general paralysis appear and he is invalided. A claim is now made for disability depending on accident. Without the previous syphilis he would not have developed general paralysis, but without the accident he might never have developed it, or, at any rate, not for years. In my opinion, the man ought to be treated as if the accident were the efficient cause of disablement. In the same way in cases in which it is a question of life insurance, I presume a man who has had syphilis would have some addition made to his premium, but if he is following a life which is more than usually associated with risk of even slight accidents, such as being in the army or navy, I think a good deal ought to be added. I do not know of cases which have actually arisen in relationship to these points, but I know that they have arisen in cases in which pension questions had to be considered.

TESTAMENTARY CAPACITY: IMPROBABILITY OF A GENERAL PARALYTIC MAKING A SOUND WILL.

And now I come to a part of my subject—the testamentary capacity of a general paralytic—which has been of great interest to me, as I have on several occasions had to be cross-examined as to my experience and as to my opinion.

At first I fancy many of you would be inclined to say, "Of course, when once established that a man is a general paralytic then his capacity is gone." But you must remember that the law courts have supported wills which have been made in asylums even by patients at the time under the Court of Chancery. So that being of unsound mind does not necessarily prevent the making of a valid will. For testamentary capacity, as I have frequently said, there must be sufficient memory to recognise the property concerned and its relationships, also normal memory of blood relations, freedom from delusions affecting either the property or the relations, and sufficient will power to prevent undue influence.

The dangers in general paralysis are first on the emotional and unstable side, so that the so-called facility comes in, the last impression being followed. The patient will promise the last person whom he met all he possesses and more for no real consideration. The amorous tendency, too, easily leads to the giving largely to unworthy persons. The reckless extravagance depending on delusions of grandeur are very potent influences. The defective memory must also be considered. Here, then, we have commonly a person with defective memory, want of normal recognition of his relations and of his property, and therefore likely to go wrong. He is also very easily influenced. On the first aspect, then, of such cases one is justified in saying it is improbable that a general paralytic will make a good will, but even with all these symptoms he may almost automatically carry out in his will the feelings and judgments of his sane life. Therefore in each case the contents of the will will be found to influence a jury more than your opinion.

WILLS AND LUCID INTERVALS.

Next, it is of great importance to remember that there are in general paralysis frequently periods of complete sanity. I know many, who have not life-long experience of the insane, are inclined to doubt the restoration to sanity of anyone who has been out of his mind, but I know better, and in general paralysis I have seen, even in cases which ended fatally within a short time, perfect lucidity. I remember very well a case which was heard in London some years since in which a man who died of general paralysis made a will some time after he had been in an asylum. He was sent out of the asylum "relieved," and during a period of calm made a will which, though contested, was established. It is very important to remember that it is not in every case that these lucid intervals occur. As a rule the more acute and maniacal the onset the greater the probability of a remission. Though rare, more than one remission may occur, but as a rule I should doubt the capacity of a patient who had had more than one lucid interval. Again, these lucid intervals occur during the earlier stages of the disease, and though I am disinclined ever to be very dogmatic in reference to prognosis in cases of insanity, yet my opinion is that remissions are not to be expected in the second or placid stage of general paralysis, and are impossible in the last or demented stage. This, I think, is a very strong and important point, but one not easily established before a jury. Take such a case as this. I was asked to see a man whom I had once seen before I had diagnosed general paralysis. I found him lying on a mattress on the floor, muttering incoherently. It was impossible to get him to understand a word I said, and I failed to understand anything he said. I heard that he had been in this restless, dirty, and demented stage for some days. I heard that he survived a few weeks and then died. Some time later I was asked to give evidence as to his testamentary capacity at the time of my second visit. I said without hesitation that he was totally incapable of understanding the contents of a will or of duly executing it. Yet his cross was affixed to a document purporting to be his will. I was examined as to the nature of general paralysis, and I was asked if it was not true that in this disease there were lucid intervals. I admitted there were, but only at the earlier

stages. I was asked if I had not assisted in establishing the will of a general paralytic. I admitted this. When trying to explain the differences between the cases I was stopped, and the counsel made it appear that in cases—that is, all or any cases—of general paralysis there might be lucid intervals, and that it was not for a medical expert to say when and how these might occur; the fact was that such intervals did occur, and he maintained that the deceased had during such a period signed the will. The jury agreed with him.

In relationship, then, to testamentary capacity, the ordinary qualifications for capacity must be established, but it must be allowed that there may be periods of complete lucidity during which a proper will may be made. Here I may say that in criminal cases it may be set up by the prosecution that the crime, though perpetrated by a general paralytic, was still done during a period of sanity.

HEART-BLOCK AND NODAL RHYTHM IN THE ACUTE INFECTIONS.

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IT has been known for more than a century that acute rheumatism is peculiarly prone to affect the pericardium and the valves of the heart, and is, indeed, the most common cause of chronic valvular disease; but it is only within the last few years that its special action upon the cardiac muscle has been recognised, and even now our knowledge of its effects is by no means complete.

Acute rheumatism may produce gross lesions in the connective tissues. The occurrence of subcutaneous nodules was first described by Hillier[1] in 1863 in a case of chorea, and Meynet[2] (1875) and others subsequently recorded their association with acute rheumatism, but these early observers failed to appreciate the full significance of their appearance. In 1881, however, Sir T. Barlow and Warner[3] pointed out the close connexion between the eruption of nodules and the occurrence of acute endocarditis, the presence of large nodules being an almost invariable sign of serious valvular disease, and indicative of a grave prognosis.

It had already been recognised that in certain fatal cases of rheumatic endocarditis the latter seemed insufficient to account for the fatal issue. In some instances pericarditis co-existed and doubtless aided in the progress towards death. But in others it was absent, and the chief clinical phenomenon was a progressive weakness and dilatation of the heart. To these cases Sturges[4] (1894) drew attention in his Lumleian lectures, maintaining that the rheumatic affection of the heart was not merely endocarditis or pericarditis, but *carditis*, all the tissues of the organ being involved in greater or in less degree. It was already known that fatty and granular changes were not infrequently present in the cardiac muscle cells in the acute infections, but it was only in 1899 that Poynton[5] demonstrated the essential rheumatic lesion in the cardiac muscle, the microscopic submiliary nodule, which, though usually smaller, is exactly comparable to the nodules which occur in the subcutaneous tissue.

Within the last few years many observers—Cowan[6] (1903), Geipel[7] (1905), Aschoff[8] (1906), Carey Coombs[9] (1907), and others—have extended the investigation, and have emphasised the importance and the frequency of myocardial lesions in the acute infections. The muscle cells in these diseases are generally abnormal to some extent if the illness has lasted for more than a few days, and submiliary nodules may occur,[10] though they are most common in cases where endocarditis co-exists.

Submiliary nodules are rarely of great size and are generally invisible on naked eye examination. The smaller nodules interfere but little with the adjacent muscle cells, but the latter are always abnormal if the nodule is large.

Microscopic examination shows that the essential lesion is a round-celled infiltration of the interstitial tissue. These infiltrations occur most frequently in the ventricular muscle, especially on the left side. They are usually situated around an arteriole or in its immediate vicinity, and sometimes involve the vessel wall, which may be so swollen that the lumen is almost obliterated. The cells may be few in number and the adjacent muscle apparently normal; but they may be numerous and infiltrate between the muscle cells, which are then more or less degenerate. In most cases the cells are arranged in discrete foci or nodules (Fig. 7), separated from each other by normal tissue; but in others the infiltration is diffuse (Figs. 8 and 9), and much larger areas are involved.

The cells are mainly mononuclear; the majority are evidently lymphocytes, but a few larger cells with a fair amount of protoplasm, which are probably of connective tissue origin, are often present, and occasionally a few polymorphonuclear leucocytes may be seen. In very malignant cases dense aggregations of polymorphonuclear leucocytes, with disintegrated muscle fibres, may be found; in other words, an acute suppurative myocarditis.

The rheumatic submiliary nodule is said to be characteristic (Carey Coombs[11]). The foci are chiefly composed of mononuclear cells superimposed upon a groundwork of fibrin, but also show certain very large cells which are often multinuclear. These may be globular or fusiform in shape, and their protoplasm takes up both acid and basic dyes, so that they appear much darker than the surrounding tissue. We have observed these cells in several cases in the cardiac tissue at the base of inflamed valves, but we have only once (Case 5) found them in interstitial nodules. The arteries, too, in these cases may be thrombosed (Romberg), most often in the vicinity of the auriculo-ventricular junction. We have found arterial thrombosis with arteritis and periarteritis in one case of acute myocarditis.

Cellular infiltrations are very commonly present in the tissues at the bases of inflamed valves, especially the mitral valve, a circumstance which is important on account of their proximity to the primitive tissue of the heart. Bacteria have not hitherto been found in the non-suppurative myocardial nodules, which thus seem to be the result of a local toxæmia. As regards their ultimate fate, the smaller nodules are probably completely absorbed, but it seems certain that the larger lesions may become the foundation of a subsequent fibrosis of the myocardium.

The cardiac muscle in cases of chronic valvular disease is frequently fibroid, patches of sclerosed connective tissue of varying size being scattered here and there throughout the wall. In the majority of cases the fibrosis is the result of arterial occlusion and consequent necrosis of the muscle cells. In mitral disease, however, other causes are often active, and the fibrosis of the tips of the musculi papillares is generally believed to be often the result of a spread of the inflammation from the valves to the papillæ, and not infrequently the connective tissue at the base of the valves is excessive in amount and infiltrates into the adjacent structures. It is evident, too, that some of the more distant fibrous tissue owns a similar origin, and is the result of the healing of the submiliary nodules which we have just described. The patches are peri-arterial in site, multiple and widespread, and individually are of little practical importance, but their multiplicity may interfere considerably with the cardiac action, and they may, accidentally, involve important structures.

It is now generally believed that the rhythm of the heart and the proper sequence of contraction of its various chambers are intimately associated with the integrity of the undifferentiated cells which are present in certain places, the sino-auricular node of Keith and Flack, the auriculo-ventricular node of Tawara, and the auriculo-ventricular bundle of Stanley Kent. It has been repeatedly shown that heart-block may be due to lesions in the auriculo-ventricular

[1] Medical Times and Gazette, 1863, vol. ii., p. 142.
[2] Lyon Médical, 1875, p. 495.
[3] Transactions of the International Medical Congress, 1881, vol. iv., p. 116.
[4] THE LANCET, 1894, vol. i., pp. 583, 653, 723.
[5] THE LANCET, 1899, vol. ii., p. 1163; Medico-Chirurgical Transactions, London, vol. lxxxii., p. 355.
[6] Journal of Pathology and Bacteriology, 1903, vol. ix., p. 87.
[7] Deutsches Archiv für Klinische Medizin, 1905, vol. lxxxv., p. 75.
[8] Brit. Med. Jour., 1906, vol. ii., p. 1103.
[9] Brit. Med. Jour., 1907, vol. ii., p. 1513; Quarterly Journal of Medicine, 1908, vol. ii., p. 26; THE LANCET, 1909, vol. i., p. 1377.
[10] Pneumonia, pleurisy, chorea, sepsis, leukæmia, small-pox, enteric fever, diphtheria, scarlatina, blackwater fever.
[11] Journal of Pathology and Bacteriology, 1911, vol. xv., p. 489.

bundle, though in certain cases this has been found to be normal, and the block has been ascribed to vagal lesions.

James Mackenzie [12] has suggested that extra-systoles occur as the result of impulses which arise in the primitive tissue. It has been shown that the normal contractions originate in the immediate vicinity of the sino-auricular node, and presumably in it, and that the region of the auriculo-ventricular tissue is more irritable than the muscle elsewhere, stimulation of the former being followed by a *series* of contractions (Gaskell), while stimulation of the latter only produces an isolated beat.

In chronic heart disease many lesions may be present in the heart—valvular defects, arterial disease, pericardial adhesions, myocardial fibrosis, &c.—and the lesions may be widespread. Variations in the cardiac rhythm are common events in these cases, but it is extremely difficult to disentangle the cause of the abnormal rhythm from the jumble of lesions which is found post mortem, and the maxim concerning *post* and *propter* must be kept in mind. Variations in the cardiac rhythm occur not infrequently in acute disease, and the cardiac lesions are generally more simple and less diffuse than those found in chronic affections; and the relations of cause and effect can, in consequence, be more accurately distinguished. During the last few years we have been engaged in the examination of the heart in such cases, and now report the results in five instances.

Heart-Block.

CASE 1.—The patient, a girl aged 10, was admitted into Ruchill Fever Hospital on Feb. 5th, 1910, suffering from diphtheria of five days' duration. Her previous health had not been good, but no details could be obtained. She had had attacks of measles, whooping-cough, and chicken-pox.

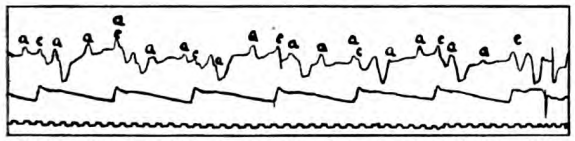
The girl's illness had commenced on Feb. 1st, the initial symptoms being headache, vomiting, and sore-throat. On admission she was found to be a poorly nourished and neglected child. The throat and pharynx were congested, the right tonsil was slightly ulcerated, and there was a considerable amount of loose membrane on the back of the throat. The toxæmia was severe, but the viscera seemed normal, and the urine did not contain albumin. Fever was slight, 99·2°F.

For the next two days the child's progress seemed satisfactory, and she was bright and cheery; but on the 9th she became dull and listless, and vomiting ensued; symptoms of palatal palsy made their appearance, and the heart dilated. On the 10th the vomiting persisted, and the child was restless and irritable. The weakness increased, and she died in the evening from cardiac failure.

The heart on admission seemed normal, but evidence of dilatation was manifest on Feb. 9th. There was widespread pulsation over the præcordium and very frequent and obvious pulsation in the neck above the clavicles. The first sound was somewhat short and muffled, and the second was occasionally reduplicated. No sounds corresponding to the auricular contractions could be heard. The pulse-rate during her residence was generally infrequent and varied greatly at different times. On admission it numbered 96; on the 6th 62; on the 7th it varied between 88 and 40; on the 8th between 80 and 52; on the 9th between 72 and 48; and on the day of death between 62 and 40.

Tracings were obtained on the three days immediately preceding death, and all showed complete heart-block, the auricular contractions numbering 100–110, and the ventricular 46–54 per minute. (Fig. 1.)

FIG. 1.



CASE 1.—Complete heart-block. Auricular rate about 110, ventricular rate about 46.

Necropsy.—The heart alone was examined post mortem. It was distinctly dilated and the muscle was rather pale. The cusps of the valves were healthy, but the auriculo-ventricular valves were slightly dilated.

Microscopic examination of the *a.-v.* node and bundle [13] showed that the node and the upper part of the bundle were involved in a well-marked acute inflammatory process (Figs. 7 and 8). The capillaries were notably congested and many cellular collections were present. The cells were chiefly mononuclear, and mainly lymphocytes, but a fair number of polymorphonuclear cells were also found. The bundle was diffusely infiltrated in many places, and its fibres distinctly separated from each other; and at one place about its middle considerably damaged by a larger nodule. The lower part of the bundle and its branches seemed normal.

The cardiac muscle generally showed evidence of interstitial inflammation, both focal and diffuse.

The vagus nerves were examined by Donnaggio's second method for early degenerative changes, but were found to be normal.

CASE 2.—The patient, a man aged 26 years, was admitted into hospital on June 5th, 1909, complaining of weakness and of breathlessness on exertion of some months' duration.

The patient's health had been good save for occasional "growing pains" and an attack of tonsillitis in boyhood, and gonorrhœa in the early part of 1903, until an attack of enteric fever later in the same ear, for which he was in hospital in Japan for about three months. He never regained his former health, and his feet were often swollen at night, but he was able to work until July 1908, when he was thrown out of employment by the failure of his firm. He stayed at home in fairly comfortable circumstances until he procured a new situation on Feb. 19th, 1909. In the early part of February he had caught cold and he was feeling "run down" when he commenced his new work. This entailed a daily walk of four miles, and he felt exhausted at night, and also during the day when walking uphill; but though he steadily became weaker he continued at his post until six weeks before admission, when he was compelled to go to bed. His cough, accompanied by a slight mucoid spit, persisted from February until May. He had frequent attacks of shivering at night after getting home; they were fairly severe, and lasted for 15 to 20 minutes, and he felt hot after he got into bed, and often sweated profusely in the early morning. About a fortnight before admission his right forearm and elbow became sore to the touch and on movement, and this continued for a few days Four days before admission the left hip and ankle became painful, and this still persisted.

On admission the patient was found to be a thin, pale, badly nourished man, with flabby muscles and little subcutaneous fat. The left hip and ankle were painful and tender, and there was a small tender area of induration on the back of the left forearm. The right calf was, he said, painful, but nothing abnormal could be detected. There were several minute ecchymoses on the conjunctival surface of the right lower eyelid, and a fairly large one on the conjunctiva of the left bulb, while ophthalmoscopic examination revealed a medium-sized flame-shaped hæmorrhage on the course of the left superior temporal vein. The lungs were normal, the tongue was clean, and digestion good; the liver and spleen were slightly enlarged; the urine contained a small amount of albumin. The heart was but little enlarged, though there was a well-marked mitral systolic murmur. The pulse was frequent, regular, small, and soft; and he was slightly fevered at night.

Progress after admission was slowly but continuously in the wrong direction. Many embolisms occurred, chiefly in the limbs, but once, at any rate, in the spleen and twice in the kidneys. He had several "faint turns" of a few minutes' duration without obvious cause. The weakness increased, and after the middle of July œdema was more or less continually present in the legs. There were occasional rigors and generally profuse sweats at night. On August 25th a left hemiplegia occurred, and he died on August 29th.

The pulse during the patient's residence in hospital was always regular until immediately before death; and the venous curves were normal, save that the *a.-c.* interval was invariably prolonged, measuring about 0·25 sec. and never touching 0·2 sec. or 0·3 sec.

Necropsy.—Post-mortem examination revealed an acute endocarditis of the mitral valve. Two emboli were present in the right middle cerebral arteries, and septic infarctions were present in the left kidney and the spleen; from the latter the pneumococcus and B. coli communis were isolated in culture. Blood cultures during life had proved sterile.

The mitral valve was dilated. Numerous vegetations were present on the cusps, some small and wart-like, others long and luxuriant. The endocardium of the left auricle was thick and opaque, and a few minute granulations were present on the contra-fossal wall immediately above the valve; the endocardium at this point was notably thickened. There was no evidence of mural implication elsewhere.

Microscopic examination of the *a.-v.* node and bundle revealed well-marked congestion. The node was otherwise normal, though two small foci of round cells were found in the auricular muscle in its immediate vicinity. The bundle was involved in three separate places by foci of the same kind. The first was of small size and was situated immediately below the node; the second, which was considerably larger, was found a little lower down, between the auricular muscle and the bundle, and implicated both; the third, of fair size, occupied the central part of the bundle, and occurred immediately above the point where it passed through the central fibrous body. The cells were all mononuclear and chiefly lymphocytes. The fibres of the *a.-v.* bundle seemed normal, save in the immediate vicinity of the two larger foci, where they were evidently degenerate. The fibrous tissue of the bundle was not excessive in amount. The cardiac muscle generally showed evidence of interstitial myocarditis in an early stage, and the muscle fibres in some of the patches were degenerate.

The majority of the cases of heart-block which have been recorded have been associated with chronic lesions of the *a.-v.* bundle, the most common cause being fibrosis with or without calcification (Lewis [14]). In 1905, however, James Mackenzie [15] reported the transient occurrence of the milder grades of block in cases of acute rheumatism and influenza; and in 1908 several cases were reported in which full heart-block was found to be due to acute lesions. In one (Jellinek and Cooper [16]), where death resulted from acute gonorrhœal endocarditis, there was an acute necrosis of the interventricular septum; in a second case (James [17]), there were ulcerative endocarditis and an ulcer of the interventricular septum immediately beneath and posterior to the membranous septum; in a third (Gerhardt [18]) the patient suffered from rheumatic fever, followed quickly by enteric fever; inflammatory lesions were found in the *a.-v.* bundle. More recently Magnus Alsleben [19] has reported a case of diphtheria where full heart-block was due to a severe parenchymatous degeneration of the *a.-v.* bundle.

A partial or full heart-block is by no means of rare

[12] Diseases of the Heart, London, 1908.

[13] The *a.-v.* node and bundle in these cases were examined in serial sections, *every section* through which the *a.-v.* node and bundle passed being examined.

[14] The Mechanism of the Heart Beat, London, 1911.

[15] Brit. Med. Jour., 1905, vol. i.

[16] Ibid., 1908, vol. i., p. 796.

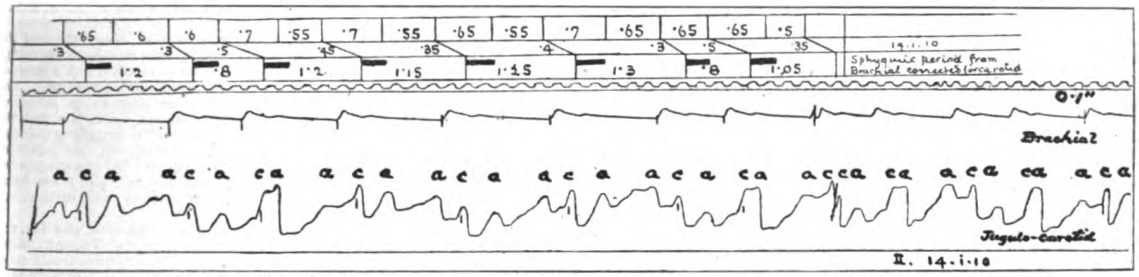
[17] American Journal of Medical Sciences, 1908, vol. cxxxvi., p. 469.

[18] Deutsches Archiv für Klinische Medizin, 1908, vol. xciii., p. 485.

[19] Zeitschrift für Klinische Medizin, 1910, vol. lxix., p. 82.

occurrence in acute disease. Ribl [20] has reported a case in which full heart-block seemed to have followed an attack of acute rheumatism. Griffith [21] has twice observed heart-block in gonococcic infections; Wenckebach [22] has seen it in influenza; Hay [23] has found it in diphtheria and in a gonococcic infection; and Magnus Alsleben [24] in pneumonia and enteric fever. Transient defects are not uncommon in acute rheumatic endocarditis, and we have now observed at least five

FIG. 2.



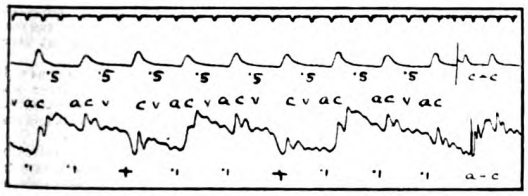
Partial heart block. The ventricular contractions (1-2) are completed before the succeeding auricular contractions (2-4) occur. Conduction is, however, so defective after the fourth auricular contraction that the third ventricular contraction is not completed before the fifth auricular contraction ensues.

examples. In one the defect persisted for nearly four weeks; in another it disappeared after six days, recurred three days later, and again lasted for six days. In none of these cases was there complete heart-block, but in one the ventricles only responded to every second auricular contraction. All the cases made good recoveries, and in one alone was the ultimate valvular lesion severe. We have observed three other cases in which a transient defect occurred. One was a case of enteric fever, another of diphtheria, the third of scarlatina. In none was there any evidence of endocarditis, and in all recovery was good.

Defects in conductivity can only be recognised by means of graphic methods, though they are, of course, suggested by extreme slowness or irregularity of the pulse. In one of our cases, however, the auscultatory phenomena were striking. A systolic murmur was audible at the apex. The ventricular contractions were infrequent and irregular, but occasionally two or three beats occurred in more rapid succession. With the isolated contractions the mitral murmur was long and loud, but when a series of frequent contractions obtained the murmur accompanying the second and third beats was much shorter and less distinct. The explanation was obvious on examination of the jugulo-carotid curves. (Fig. 2.) Conductivity was defective, but after the long pauses was sufficiently good to permit the completion of the ventricular contraction before the commencement of the succeeding auricular contraction; but, when the pause was short, became so defective and prolonged that the ventricular contraction coincided with the succeeding auricular contraction. The regurgitation into the auricle was in consequence minimal, and the murmur became shorter and less distinct.

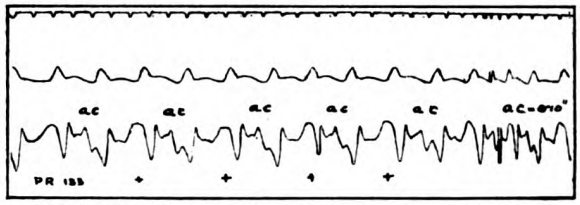
The causes of heart-block are numerous and not necessarily associated with lesions of the *a-v.* tissues, as it has been produced experimentally by the administration of various drugs (digitalis, aconitine, adrenalin, muscarin physostigmine), by the induction of asphyxia, and by vagus stimulation. It thus seems probable that nervous and toxic influences may produce heart-block in man without there being any lesion in the *a.-v.* tissues, but so far only one case has been recorded (Holst and Monrad-Krohn) with full post-mortem examination and graphic records in which the nervous origin seems definitely proved. In Case 1 of our series the presence of palatal palsy seems to point to a nervous origin of the block, but the post-mortem examination showed that the vagus nerves were normal. In our second diphtheritic case there was no evidence of any paralysis.

FIG. 3.



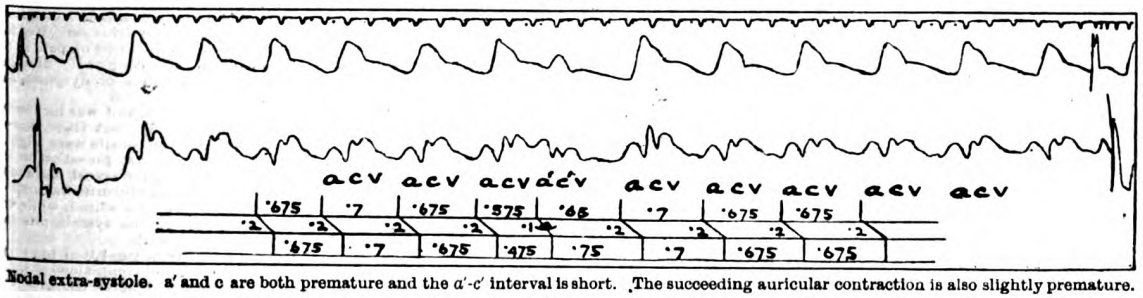
CASE 4.—The pulse is regular and the *a.-c.* interval regularly measures 0·10 sec. Respiratory movements deform the jugulo-carotid curve in places (+ +). T.= 0·2 sec.

FIG. 4.



CASE 5.—The pulse is regular and the *a.-c.* interval regularly measures 0·10 sec. Respiratory movements deform the jugulo-carotid curve in places (+ +). T.=0·2 sec.

FIG. 5.



Nodal extra-systole. a' and c are both premature and the *a'-c'* interval is short. The succeeding auricular contraction is also slightly premature.

Nodal Rhythm.

CASE 3.—The patient, a man, aged 24, was admitted into hospital on July 15th, 1909. His previous health had been good, save for attacks of measles and enteric fever in childhood; but he was often troubled with gumboils, and was frequently wetted at his work.

The patient's present illness dated from July 1st, when he had had

[20] Zeitschrift für Experimentelle Pathologie und Therapie, Berlin, 1905, vol. ii., p. 83.

[21] Personal communication.

[22] Arrhythmia of the Heart, Edinburgh, 1904.

[23] Personal communication: Brit. Med. Jour., 1910, vol. i., p. 20.

[24] Loc. cit.

one of his molars extracted on account of a gumboil from which he had suffered for a day or two. In the evening he felt sick and shivery, and probably was fevered. These symptoms continued, and on the afternoon of July 4th he had a definite rigor. On the 7th he felt better, and on the 8th he went to Ardrossan, walking from the station to the house at which he stayed (two miles). After this he improved until the 12th, though he had a slight cough after the 6th, with discomfort in the left chest. But on the 12th he had to go to bed as the pain in the side became worse and was much intensified on coughing. The left arm, too, was stiff, and he was very breathless and had to sit up in bed at night. On the evening of the 13th he was better, and able to sleep quietly lying down.

On July 14th the man felt so well that he dressed and went downstairs to breakfast, which he did without any difficulty or assistance; after breakfast he sat down on a chair, and on attempting to rise an hour later found that his legs were powerless and "had no feeling" in them. He had to be carried back to bed.

On admission the patient was found to be notably emaciated, with small muscles and scanty subcutaneous fat. His complexion was somewhat sallow and his expression anxious, while he had to be propped up in bed on account of breathlessness. The skin was hot and dry and there was a little œdema of the feet and slight pitting with the stethoscope on auscultation over the cardiac area. He was slightly fevered at night. The patient, though weak, was quite clear mentally, spoke correctly, and answered questions accurately and sharply. He had little power in his legs, but was able to pull up both knees, though he was unable to move the toes of the right foot. The movements were more free on the left side. There was considerable anæsthesia in both legs. Power was perhaps deficient to some slight extent in the left arm, but in the right was good; and sensation seemed normal. The right pupil was slightly smaller than the left; both reacted to light and on accommodation.

The tongue was dry and coated, many of the teeth were absent, and most of the remainder were carious, and the mouth generally was very foul. The pulse was soft, regular, and infrequent. Palpation of the apex beat, which was full and widespread, showed that every other beat was missed at the radial, the cardiac action being regularly coupled. A systolic murmur was audible all over the cardiac area. It was heard best at the apex, where it was long and soft, replacing and running out of the first sound; the second sound was not audible here. The respirations were difficult and cyclic, but without any full apnœa. A consolidation was found in the upper part of the right chest and in the left lower axilla friction sounds were audible. The urine contained a trace of albumin.

For a few days the patient's general condition improved slightly. The coupled rhythm ceased on the 16th, and he rested fairly well at night. On the 17th movement was more free in the left leg, but the palsy below the right knee persisted. About midnight on the 18th he was noticed to be restless and was found to be semi-conscious and unable to say more than "yes," and there was a well-marked full right hemiplegia. He gradually became weaker and more comatose, and he died with cardiac failure on July 27th, 1909.

The pulse remained "single" until the day of death, when it was noticed to be "coupled" again for a short time. The tracings, which were obtained in this case during the coupled rhythm showed that there was a slight increase of the *a.-c.* interval (0·25 sec.) with the first or larger beat of the couple, and that the second or smaller beat was a ventricular extra-systole which did not interfere with the auricular rhythm. Tracings of the "single" pulse obtained on July 23rd showed a regular pulse and a very short *a.-c.* interval measuring little more than 0·05 sec.

Necropsy.—Post-mortem examination revealed an acute ulcerative endocarditis of the mitral valve, engrafted on a lesion of older standing. The upper and middle lobes of the right lung were solid from a somewhat chronic pneumonia, and there were numerous infarcts in the spleen and kidneys. The left middle cerebral artery was occluded by a large pale embolus which resembled the vegetations on the mitral valve, and was associated with a very extensive softening. Streptococci were isolated on culture from the spleen. No blood cultures were made during life.

The mitral valve was stenosed, the cusps being notably shortened, the chordæ tendineæ short and thick, and the tips of the papillary muscles fibrous. There was well-marked evidence of fibrosis spreading upwards from the bases of the cusps in the direction of the central fibrous body of the heart. Enormous soft recent vegetations almost occluded the valve, and there were in addition extensive ulceration and perforation of the anterior mitral cusp. There was no evidence of any acute mural endocarditis; but the endocardium of the left auricle was thick and opaque, with a special area of thickening about as large as a shilling on the contra-fossal wall just above the valve.

Microscopic examination of the *a.-v.* tissues revealed considerable congestion of the tissues generally. The node was the site of a profound inflammatory disturbance, many focal collections of round cells being present, as well as, in places, a diffuse infiltration. (Fig. 9.) The fibres of the *a.-v.* node were probably normal, and there was no evidence of old-standing fibrosis. The walls of a microscopic artery were infiltrated with round cells, though the lumen was patent; the other vessels seemed normal. The intensity of the lesions varied at different levels, but the whole of the node was more or less affected. The bundle, on the other hand, was not implicated, save at one place immediately below the node, where one or two small foci in the auricular muscle immediately adjoining it passed in for a short distance between a few of its fibres.

There was a well-marked myocarditis, involving both ventricle and auricle, but it was only extreme at the base of the mitral valve, and in the auricular sections immediately above the node itself.

CASE 4.—The patient, a man, aged 42, was admitted to hospital on Jan. 31st, 1911, complaining of breathlessness and of swelling of the feet and legs of two or three months' duration.

He had always enjoyed good health prior to the onset of his present illness, save for pneumonia at the age of 30, and attacks of measles in childhood and at the age of 32. He had habitually used tobacco and alcohol to excess.

In the preceding April he had caught cold and had never been well since. The cough and spit persisted and he lost appetite and felt weak and unable to do his work. In July he noticed that his feet were sometimes swollen at night, and he began to be very breathless on exertion. In August the œdema became permanent and, steadily increasing in amount, soon compelled him to remain in bed. In December he one day suddenly felt severe pain in his right side and spat blood in considerable quantities for some weeks. He had to be propped up in bed on account of breathlessness, the spit and the œdema steadily increased in amount, and his general strength rapidly failed. In January he attempted a short walk, but fell down in a faint on the pavement.

On admission the patient was extremely ill. He sat bolt upright in bed, coughing continually and spitting up large quantities of watery mucoid material. Œdema was universal and very marked in the legs and scrotum. Detailed examination was impossible, but evidence was found of a consolidation of the middle lobe of the right lung and of pleurisy on the same side. The heart was enlarged and double aortic murmurs were audible down the sternum. Progress was continually in the wrong direction. The hæmoptysis recurred, the dyspnœa and œdema increased, exhaustion became more and more extreme, and he died suddenly on Feb. 5th.

The respiratory difficulty prevented continuous observation of the cardiac irregularities. The pulse on admission was notably irregular in rhythm from the frequent occurrence of extra-systoles, but a series of 20 or 30 fairly regular beats of slow rate occasionally obtained. The extra-systoles were sometimes isolated and sometimes in salvoes of 2, 3, or 4. On Feb. 1st the same state continued. On the 2nd the pulse was very irregular and very mobile, a bout of coughing quickening the rate from about 90 to about 120–130, the frequent rate persisting for a minute or two after the cough ceased. On the 3rd the irregularity was more marked, but on the 4th had disappeared, the pulse being quite regular with a rate of 110–120; alternation was distinct. It remained regular until death.

Jugulo-carotid curves were only obtained on Feb. 2nd and 4th, and are somewhat deformed by the respiratory movements. Tracings on the 2nd show the irregularity of the pulse, and the jugulo-carotid curve demonstrates that while the *a.-c.* interval in the case of the large beats is of normal length, it is much shorter with the extra-systoles, varying between 0·10 sec. and 0·15 sec. On the 4th, when the rhythm was regular but more frequent, the *a.-c.* interval is always short, and measures 0·10 sec. (Fig. 3). The tracings thus seem to show that on the 2nd extra-systoles were arising frequently in the vicinity of the node, the sinus rhythm, however, on the whole predominating; while on the 4th the pacemaker had changed, the sinus influence had been lost, and *every* contraction originated in the auriculo-ventricular node.

Necropsy.—On post-mortem examination the heart was found to be greatly enlarged, weighing 25½ ounces. The aortic valve was incompetent, the septal cusp having a fairly large perforation with well-defined margins a little below its free border. All the cusps showed some small recent warty vegetations, but were not thickened. The other valves were not affected, but the auriculo-ventricular valves were dilated. Two patches of superficial mural fibrosis were present in the left ventricle. One, which was small, was situated near the apex. The other, which measured about ½ in. in diameter, was situated on the interventricular septum underneath the anterior mitral cusp, its anterior border being fully ½ in. behind the posterior border of the pars membranacea. The coronary arteries and the aorta were but little abnormal.

A small abscess was found in the lower lobe of the right lung as well as a large infarction; both pleuræ were adherent. The liver was adherent to the diaphragm, and there was a well-marked perisplenitis. The kidneys showed slight evidences of arterio-sclerotic fibrosis and one or two small infarcts.

Microscopic examination showed that the *a.-v.* node was involved in an acute inflammatory process. Many focal cellular collections were present and some small diffuse infiltrations, the fibres in their vicinity showing granular degeneration. The reaction was best marked in the upper portion of the node and in the part which was nearest to the base of the mitral valve. The cells were chiefly mononuclear and mainly lymphocytes, with only an occasional polymorphonuclear leucocyte. The *a.-v.* bundle was not definitely affected, but was slightly implicated by a nodule in the cardiac muscle immediately beneath and posterior to it. The fibrous tissue around the bundle appeared excessive in amount and showed traces of calcification.

The cardiac muscle generally showed evidences of cloudy swelling and a few nodules, which were most numerous at the base of the mitral valve and in the auricular muscle just above the node.

CASE 5.—The patient, a girl, aged 10, was admitted to hospital on June 10th, 1911, complaining of shortness of breath and of swelling of the feet of a week's duration.

The girl had enjoyed good health, with the exception of three attacks of "measles," until about two months before admission, when she was noticed to be taking her food badly and to be losing flesh, and to be disinclined for her usual play. She continued, however, to go to school until the beginning of June, when she contracted a cough unaccompanied by spit and became short of breath on exertion. Her face and feet were noticed to be swollen, and she complained of pain in the abdomen and beneath the sternum when she coughed. She had sometimes to sit upright in bed at night on account of dyspnœa, and in the mornings she complained of headache.

On admission the child looked ill and exhausted, and was inclined to be drowsy. The face was pallid and looked puffy, but there was no œdema. The tongue was thickly coated and the tonsils were slightly enlarged. Both hearts were enlarged, and there was pulsation in the second, third, fourth, fifth, and sixth interspaces, the apical impulse in the fifth space being diffuse. A long soft blowing murmur was audible at the apex, partly replacing and following the first sound, while the second sound was "doubled." Over the xiphoid the systolic murmur was loud and harsh and resembled a friction sound.

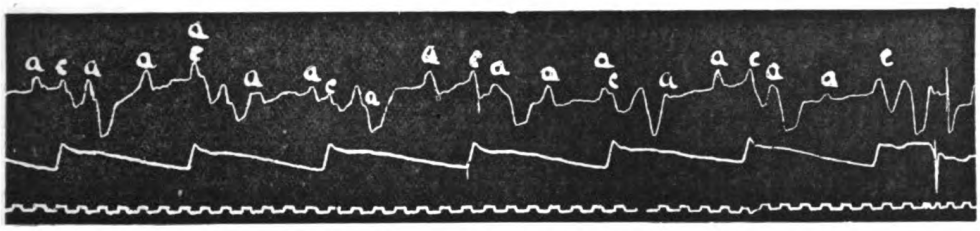
During the next fortnight the patient's general condition improved slightly, but she still looked ill and exhausted, and complained at times of substernal pain. An urticarial rash appeared upon the 24th and persisted for a few days. On the 29th pericardial friction was well marked and a small pleural effusion was discovered at the base of the left lung. In the beginning of July the symptoms became more serious, and she grew easily weaker and sometimes sweated profusely at night. A crop of minute subcutaneous nodules developed on the backs of the hands and persisted for a few days. On the 14th vomiting set in and continued severely for the next three days. Exhaustion became more extreme, and she died on July 22nd.

The nature of the infection was obscure. There was no history of arthritis, and the joints were never swollen or painful during her residence, and the tonsils, though large, were not acutely inflamed. She was habitually slightly fevered at night, but the temperature only once rose above 101° F., and was more usually under 100°. The leucocyte count

varied between 8000 and 23,000. No other foci of infection were discovered, and the symptoms seemed to point to a rheumatic infection of the heart without arthritis.

The pulse on admission was regular, small, and extremely soft. At first the rate was 100–110, but it steadily increased, and for the last two weeks of her illness never ran below 120, though it only numbered 140 on two occasions. Tracings were obtained on several occasions and were regular and normal until July 3rd, when a ventricular extra-systole was recorded. During the succeeding days the pulse was often slightly irregular from extra-systoles, but no satisfactory curves were obtained until July 17th (Fig. 4). The respiratory movements were frequent and deformed (+) every alternate pulse beat, but *a.-c.-v.* are distinct in the intervening contractions, and the *a.-c.* interval regularly measures 0·10 sec. A tracing on July 22nd again shows a regular pulse with an *a.-c.* interval of the same length.

FIG. 6.



(Reproduced from *Heart*, a facsimile of the drum tracing shown in Fig. 1 on a small scale.)

Necropsy.—Post-mortem examination revealed a well-marked subacute pericarditis, the two layers of the pericardium being closely adherent to each other by fibrinous adhesions over the front of the heart, but only slightly over the posterior surface. The parietal pericardium was adherent in several places to the chest wall. The heart generally was enlarged. The mitral and tricuspid valves were both dilated and showed rows of recent pearly vegetations upon their auricular surfaces.

One or two caseous glands were found at the root of the right lung. Both pleuræ showed evidences of subacute pleurisy.

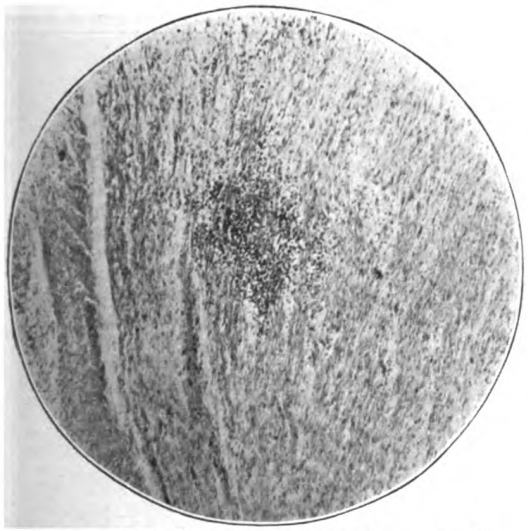
Microscopic examination showed a well-marked interstitial myocarditis. The nodules varied somewhat in their character. The majority were composed of mononuclear cells with a few polymorphonuclear leucocytes; others were of the "rheumatic" type, consisting chiefly of multinucleated giant cells with only an occasional lymphocyte; and a few were "mixed" with a few giant cells, many lymphocytes and an occasional polymorphonuclear leucocyte. The muscle cells in the vicinity were evidently degenerate.

The lesions were most extreme in the neighbourhood of the mitral and tricuspid valves. The *a.-v.* bundle was involved in a large focus which, occurring near the tricuspid valve, infiltrated the bundle for a short distance. The *a.-v.* node was notably affected; none of the infiltrating cells, however, were multinucleated. The capillaries were extremely congested, and the lymphatic vessels could be seen plugged with solid masses of lymphocytes. (Fig. 10.) The principal vein of the node showed an acute phlebitis and periphlebitis. (Fig. 11.) The majority of the cells in the wall of the vein were lymphocytes, but a considerable number of polymorphonuclear cells were also present, and at one place a group of giant cells. Around the vein the polymorphonuclear cells were almost as numerous as the lymphocytes, and infiltrated the auricular muscle immediately above it. The greater part of the phlebitis was above the node. Just before the vein left the node it was joined by a moderately large branch, and the vein above the junction was thrombosed, the thrombus consisting of a fibrinous matrix with numerous red cells and abundant polymorphonuclear leucocytes. (Fig. 12.) The thrombus was attached to the side of the vein, but did not completely occlude it, and could be traced through several sections.

In 1907 James Mackenzie[25] suggested that extra-systoles might arise in the *a.-v.* node (nodal extra-systoles). In certain extra-systoles the tracings show that the auricle contracts at a time when the ventricle is already in contraction and the auriculo-ventricular valves are shut. In the majority of these cases careful measurement demonstrates that the auricular rhythm is unchanged and that the coincident contraction of auricle and ventricle is due to a ventricular extra-systole occurring immediately before the regular sinus contraction of the auricle. In some cases, however, both the auricular and ventricular contractions are premature (Fig. 5), and, as in auricular extra-systoles, the prematurity of the contraction entails defective conduction, the extra-systole cannot originate in the auricle, and both auricle and ventricle must respond to a common stimulus arising between them. It seems probable that Mackenzie's theory should be slightly amplified.

The *a.-c.* interval in jugulo-carotid tracings measures in the normal individual about 0·20 sec., being slightly shorter if the pulse-rate is frequent. During the *a.-c.* interval five events occur: (1) the auricular systole which lasts for about 0·10 sec.; (2) the passage of the stimulus from auricle to ventricle; (3) the latent period of ventricular contraction; (4) the period of ventricular systole prior to the opening of the aortic cusps; (5) the transmission of the aortic wave to the carotid artery. The average period between the commencement of ventricular systole and the appearance of the carotid wave in the neck (4 and 5) is 0·066 sec. (0·03 sec.–0·11 sec.), while the commencement of auricular systole

FIG. 7.



Showing a focal inflammatory lesion in the *a.-v.* bundle. (From Case 1.) (N.B.—Figs. 7 to 12 are × 90.)

FIG. 8.

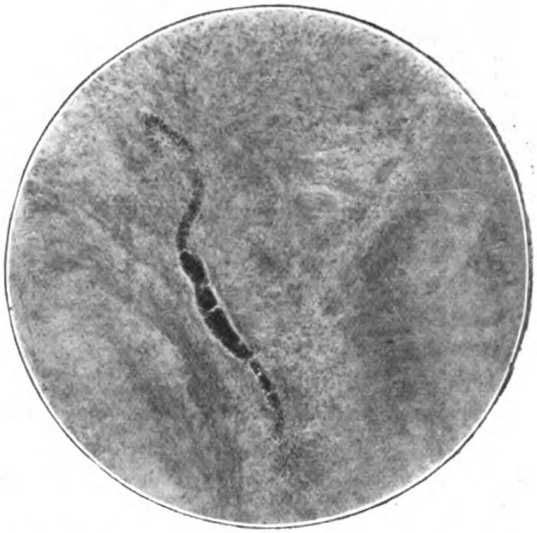
Showing a diffuse inflammatory infiltration in the *a.-v.* bundle. The fibres of the bundle are widely separated by cells infiltrating between them. (From Case 1.)

[25] Quarterly Journal of Medicine, 1907, vol. i., p. 131.

FIG. 9.

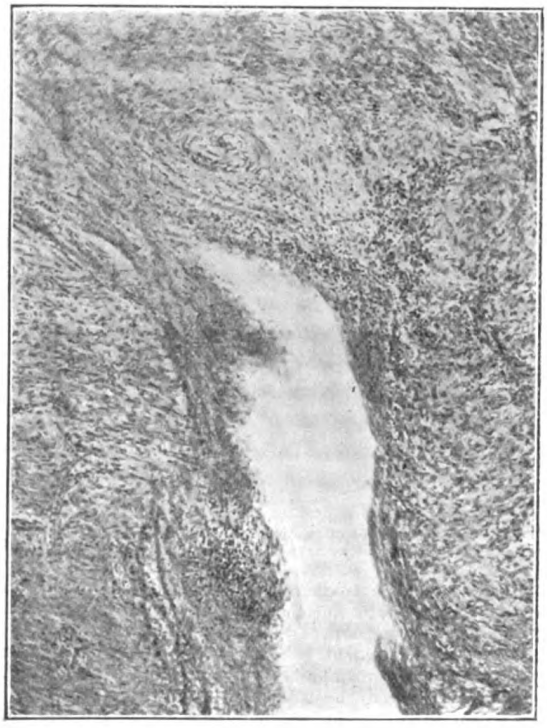
Showing diffuse inflammatory lesions in the *a.-v.* node. A small arteriole is seen cut obliquely and its walls are infiltrated with cells. (From Case 3.)

FIG. 10.



Showing a lymphatic vessel filled with a solid plug of lymphocytes, situated in the upper part of the *a.-v.* node. (From Case 5.)

FIG. 11.



Showing the principal vein of the *a.-v.* node. An inflammatory nodule is seen in the wall on one side, and in the other a diffuse infiltration extending into the auricular muscle. (Case 5.)

FIG. 12.

Showing the principal vein of the *a.-v.* node with its two tributaries. A thrombus is attached to the right side of the vein, but does not completely block it. It is situated just where the vein leaves the node.

practically coincides with the appearance of the *a* wave in the jugulo-carotid tracing. The presphygmic interval and the transmission time are invariably lengthened in premature systoles, and it thus seems probable that whenever the *a.-c.* interval in the jugulo-carotid curve measures less than 0·10 sec. the auricle and ventricle respond to a common stimulus which arises between them.

In Cases 3, 4, and 5 the *a.-c.* interval is short. In Case 3 it measures 0·06 sec.; in Case 4, 0·10 sec.; in Case 5, 0·10 sec. The rhythm of the heart in these cases is almost absolutely regular, and regular action of the heart probably denotes a common site of origin for all the contractions; so the conclusion is reached that the heart in these cases was responding to stimuli which arose regularly in an abnormal site, between the auricle and the ventricle (nodal rhythm). In Case 4 the earlier tracings make the conclusion even more certain, for they show that at one time extra-systoles were arising in the vicinity of the node, though the majority of the beats were in response to sinus stimuli.

We have been unable to find any tracings of a similar kind in the literature, with the exception of a case (Case 10) recorded by one of us in the *Quarterly Journal of Medicine*.[26] The pulse in this patient numbered 66–80, and the *a.-c.* interval invariably measured 0·10 sec. This patient made a fair recovery from his symptoms, which were chronic in character.

This conception of a nodal rhythm is confirmed, if not proved, by the series of electro-cardiographic curves which have been recorded by Lewis[27] in cases of paroxysmal tachycardia. In Fig. 26 a short paroxysm is shown. In the earlier part of the tracing the normal P.R.T. waves are well marked, the P.–R. interval being 0·14 sec. During the paroxysm the waves R. and T. are similar to those occurring during the normal rhythm, but the wave P. is *inverted*, which strongly suggests that the wave of contraction in the auricular muscle has travelled in a direction the reverse of the normal —i.e., from below upwards (Lewis); while the P.-R. interval is now only 0·08 sec. At the end of the tracing the normal rhythm is resumed.

Paroxysmal tachycardia not infrequently shows jugulo-carotid tracings similar to those which we have described in Cases 3, 4, and 5, but the pulse-rate is much more frequent, numbering in three curves which we have obtained, 160, 182, and 214. In all these cases auricular contractions regularly preceded the ventricular contractions by a period which did not exceed 0·10 sec. It is well known that the *a.-c.* interval varies to some extent in its duration even in the same individual, and is shorter when the heart is beating frequently than it is when the pulse-rate is slow, but in normal rhythms P. is never inverted.

The cases which we have reported cannot, however, be regarded as examples of paroxysmal tachycardia. In all three the sequence of events was similar, the tracings showing at first a normal rhythm interrupted by occasional extra-systoles, and preceding death a *regular* more frequent action with a short *a.-c.* interval. In no case was the tachycardia excessive or paroxysmal or the onset of the new rhythm abrupt. It seems probable that nodal rhythm is not so uncommon as it would appear to be from the scarcity of records, for an ante-mortem rise in the pulse-rate attracts little special attention, though an infrequent or an irregular pulse does not escape investigation.

The inception of heart-block or nodal rhythm may conceivably be the proximate cause of death, for the mechanical difficulty under which the heart labours in these rhythms must be very considerable, the synchronous contraction of auricles and ventricles throwing the auricular blood backwards into the veins, and lessening in considerable degree the ventricular content and output. The blood pressure in these cases is in consequence always low and the pulse is always small. The serious import of paroxysmal tachycardia is now thoroughly recognised, for the continuance of a paroxysm for more than a few hours is known to lead rapidly to dilatation of the heart, a result which will ensue the more readily in cases where the valves are acutely inflamed and the cardiac muscle degenerate and weak.

Summary.—In a case of diphtheria, with full heart-block, the *a.-v.* bundle and node were found to be involved in an acute inflammatory process, and similar lesions were present in the *a.-v.* bundle in a case of malignant endocarditis in which conductivity was defective. In three cases of acute endocarditis, with nodal rhythm, the *a.-v.* node was acutely inflamed, the bundle being only and but slightly affected in one instance.

Glasgow.

[26] Cowan and Ritchie: Coupled Rhythms of the Heart, 1910, vol. iv., p. 55. Belski (Zeitschrift für Klinische Medizin, Berlin, 1909, vol. lxvii., p. 515) has reported several cases (acute rheumatism, scarlet fever, enteric fever) in which he considered that the heart was contracting in response to stimuli which originated in the *a.-v.* tissues. His tracings show a rhythmical appearance of nodal or ventricular extra-systoles, often in groups of 2, 3, or 4 (Belski).

[27] Heart, London, 1909-10, vol. i., p. 306.

ON THE USE OF SALVARSAN IN THE TREATMENT OF SYPHILIS.

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SELDOM has a new remedy received such general attention as has Professor Ehrlich's salvarsan, and thus a *résumé* of my experience with this drug may be of interest. Thanks to my former chief, Mr. J. Ernest Lane, I have been able to apply this new therapy on the large clinical material of the London Lock Hospital since the beginning of August, 1910. Some of the cases have thus been under observation for more than a year. With few exceptions they were men who had acquired syphilis, and hence my remarks will be confined to the treatment of acquired syphilis by the new remedy. If I refrain from giving statistics it is because the plan of treatment gradually underwent changes which the evolution of the new therapy rendered necessary, and therefore the later cases were treated in a manner different from that employed for the earlier ones.

Technique.

I have always avoided the use of subcutaneous injections on theoretical grounds, and it is difficult to understand why they should have been used to a considerable extent. The object-lesson of the subcutaneous mercurial injections, the demonstration of Professor Orth at the meeting held in Koenigsberg (September, 1910), and the researches of Martius on the necrosing influence of salvarsan upon human tissues should have led everybody to discard this mode of administration, which is responsible for a good deal of the discredit cast upon the new remedy. I have seen abscesses due to this method in patients who had been injected in London, Aix-la-Chapelle, and South Africa. Some of these abscesses were discharging five, and even six, months after the "accident," despite incision. They are so tedious and troublesome that nothing short of complete excision—as if they were tumours—seems sufficient to cope with them. Therapeutically these cases were failures, little, if any, of the salvarsan having been absorbed. It is hardly necessary to mention that these patients were unwilling to have any further salvarsan treatment.

The intramuscular method was adopted exclusively in the earlier cases. The high dilutions employed at that time on the continent were avoided, as I could only see in them a factor favourable to the production of abscesses and of pain. My efforts to reduce the amount of fluid to be injected, and to obtain a clear solution, led me to the preparation of acid solutions of very small bulk (6 c.c. as a rule). This method, which is practically the same as Duhot's, whose work I was not conversant with at the time, appears to me to deserve preference over all other forms of intramuscular administration. Of other methods tried by me, the suspensions of Michaelis and of Wechselmann are notoriously unsatisfactory (Ehrlich, Rille, &c.), and the alkaline solutions tend to give excessive pain. Emulsions, of which I have tried self-made emulsions in olive oil, appeared to be the least painful, but also to be therapeutically inferior to the acid injections.

This form of salvarsan administration is the most effective of all, in my experience—a view which is now also endorsed by Ehrlich,[1] who so fervently pleaded for the intravenous method about a year ago.[2] I have not observed an abscess with these intramuscular injections, which should be given near Barthélemy's point. The pain is usually severe after these injections, and lameness, lasting frequently a fortnight,

[1] Münchener Medicinische Wochenschrift, 1911, No. 47.
[2] Ibid., No. 1.

was noted repeatedly. Attempts to alleviate the suffering by adding a local anæsthetic, such as cocaine, to the salvarsan mixture are perfectly futile, because the effect of the local anæsthetic has long worn off before the salvarsan pain has reached its height. The only efficient way of diminishing the pain produced is to give morphia, as has been the practice of Duhot.

It is this respect for the patient's comfort which compels one to prefer the intravenous method. Theoretically this procedure appears to be the most suitable one for a *therapia sterilisans magna* in the meaning of Ehrlich, and thus it was taken up with zeal, despite its greater technical difficulties. It is nowadays the routine, and there is little probability that it will lose its favour. For the introduction of the drug into the blood stream either gravity or pressure is resorted to. Thus one either requires a simple infusion apparatus, as used from the beginning by Weintraud, or a suitable syringe, as indicated by Ehrlich and Schreiber. All the more or less complicated devices now on the market, with their additional taps, bellows, receptacles, &c., are more apt to hamper than to facilitate the operation. Personally, I have no hesitation in giving the infusion apparatus the preference. The only difficult point about the whole intervention is the introduction of the needle into the vein, and even the most skilful will meet with cases where he is compelled to make more than one attempt or even to expose the vein before he succeeds in introducing the needle correctly, of which success the following signs are the most important: (1) absence of pain or swelling when one allows the liquid to flow; (2) a wave-like sensation along the vein in a centripetal direction. This latter sign is absolutely characteristic of the correctness of the manipulation. If one uses the gravity method and allows saline only or water to flow in the beginning it is impossible to injure the patient's arm with these precautions. Attempts to ascertain the correctness of the position of the needle by moving it about after it has entered the vein or by allowing the blood to run back into a special "window" inserted in the tubing are to be condemned. In the former case one tends to injure and to perforate the vein wall, and in the latter case one favours coagulation and thrombosis.

With regard to the solution great care should be taken that it be perfectly clear and free from undissolved particles. This is of much greater importance than is the use of saline or of distilled water. Those who aim at accuracy should avoid both; the former is hypertonic, the latter hypotonic. In order to obtain isotony one should use 0·6 per cent. saline solution, as has been shown by Marschalko and others.

The question of neutralisation deserves some attention, because markedly alkaline solutions favour thrombosis, as was first pointed out by Darier and Cottenot,[3] and because the acid solutions which enjoy the support of Duhot and of Spiethoff[4] tend to produce an intense general reaction, as I have been able to observe repeatedly. It is on the whole best to neutralise carefully. Any error should be on the acid side.

The general reaction following upon an intravenous injection comes on rapidly, and in nearly all cases passes off in less than 24 hours. Sometimes the disturbances are insignificant; occasionally they are alarming. They have always been a sore point, and it is edifying to note the various explanations given. Thus Heubner[5] holds the sodium-ion of the saline responsible for the rise of temperature, whilst Stopford-Taylor and Mackenna[6] find the reaction proportionate to the acuteness of the disease. This latter view, which is shared by many, implies the liberation of toxins owing to the destruction of the spirochætæ, and attributes to them all the bad effects observed. Last summer Wechselmann[7] announced that he was able to avoid nearly all ill-effects by the use of re-distilled distilled water, thus holding the dead bacteria in the commercial distilled water responsible. Of late, even the "neuro-recidive" have been put down to this "water error"—a rather surprising suggestion, as one is supposed to hold this to be of a syphilitic nature. For practical purposes it is well to carry out all possible precautions, such as starvation previous to the injection, and the use of re-distilled water. One should, however, not forget that with all possible care one only succeeds in avoiding *nearly* all bad effects.

From my point of view, the systematic disturbances are merely the reaction against the sudden introduction of an arsenical compound; that bacterial toxins may change a portion of the drug into a more toxic form of arsenic, and thus increase the intensity of the reaction, is not improbable.

The most important immediate drawbacks of the intravenous method are collapse and thrombosis. The former occurred in two of the cases injected by me. Both patients had throat lesions, and complained of a choking sensation during the injection, collapsing at the end. Both were soon restored by hypodermic injections of ether. Thrombosis can be limited by rigorous asepsis, care in the making up of the solution, &c. But it seems to be impossible to exclude it completely, as it depends upon factors beyond our control to a certain extent. Fortunately, however, it is not common and seldom of gravity when it occurs. In serious cases the entire venous channel above the puncture may become thrombosed up to the heart; and death from pulmonary embolism has been observed.

To resume: the ill-effects of the intravenous method are in the vast majority of cases unlikely to have any serious effect upon the patients. The short duration of the reaction and the absence of pain are its great advantages. Where the circulation is impaired I would advocate the use of the intramuscular method if the administration of salvarsan is deemed imperative.

Dosage.

The question of dosage is still one of the most obscure problems of the new therapy, and it will certainly require many further studies before any definite rules can be laid down. At the present time there is no unanimity on this point. Everybody who has had sufficient experience with salvarsan has had to record recurrences and accidents, and has thus been led to alter his original mode of procedure. Tentative trials to improve the results have been made by increasing the number of injections, by altering the dose per injection, and by combining salvarsan with other forms of treatment, chiefly with mercury. Thus, some claim to be able to effect a complete cure by means of two intravenous injections, whilst others require three for the same purpose. Some repeat their injections after a few days' interval, fearing the production of arseno-resistant spirochætæ; whilst others allow weeks to elapse in the hope that all the arsenic will have been eliminated by the time they administer the next injection. Iversen's example of giving an intravenous injection, followed a few days later by an intramuscular one, has found imitators who thus initiate their patients into all the unpleasant effects which salvarsan is capable of, without being able to give them an adequate compensation. Krohmeyer recommends his "chronic salvarsan treatment of syphilis" for which he uses doses of 0·1 gramme, to be repeated every three days or so, until 18 injections have been given.[8] Others favour a combination treatment of salvarsan and mercury. Personally, I started with 0·4 gramme for intragluteal injections, and gradually increased the dose up to 0·8 without being able to note better results. For intravenous injections I have used 0·4 and 0·5 in the majority of cases. Some patients received two or more injections, sometimes within short intervals, sometimes after four weeks or more. Others, again, were given mercury as well—a procedure which I consider infinitely superior to pure salvarsan treatment. I am not impressed with the necessity of large doses, because they are not capable of producing better results than medium ones. This has also been the experience of other large cliniques, such as those of Professor Rille in Leipsic, and of Professor Klingmueller in Kiel. The danger of arsenicism, on the other hand, becomes greater with the large doses, and this should not be lost sight of, despite the relatively low toxicity of the drug. To my mind the views of Milian deserve careful consideration. This author holds that 0·3–0·4 gramme is sufficient, and advises to repeat the injections frequently; examination of the individual susceptibility to arsenic is also recommended by him, and can be carried out by a subcutaneous injection of an arsenical compound. My own experience has shown me that this tolerance is rather variable; thus, I have met with violent reactions in cases where I did not expect them,

[3] Semaine Médicale, 1911, No. 14.
[4] Münchener Medicinische Wochenschrift, 1911, No. 32.
[5] Ibid., No. 46.
[6] THE LANCET, May 27th, 1911, p. 1412.
[7] Münchener Medicinische Wochenschrift, 1911, No. 28.
[8] Deutsche Medicinische Wochenschrift, 1911 No 34

whilst some patients about whom I was somewhat anxious have reacted very slightly.

The general condition, the nature of the lesions, and the susceptibility to arsenic should be, in my opinion, the chief guides as to dosage and general plan of treatment. The proposal to regulate the dose according to the body weight has nothing in its favour except its simplicity.

Organotropism.

It is unnecessary to dwell upon the spirochætocidal effect of salvarsan which has been so carefully studied experimentally, and which is incontestable. Equally important, however, is its organotropism which was so much dreaded in the beginning, and not without reason, after the experiences with atoxyl and its substitutes. Fortunately, these fears have not been justified; as a matter of fact, salvarsan has shown itself to present this great advantage over all other arsenical compounds—that it combines an unrivalled therapeutic activity with a remarkably small toxicity. But this does by no means imply that the organotropic properties of arsenic are wanting. Like other arsenical bodies it is eliminated slowly. Thus it has been found eight months after intramuscular injections, and even in intravenous cases, which begin to eliminate the drug almost immediately, after four months. The chief storage seems to take place in the liver.

The effect upon the nutrition in general is that of a stimulant and tonic. Thus, many of our cases declared themselves to be stronger, and an increase in weight, often considerable, was usually noted. The blood is also influenced favourably; at first it undergoes a certain diminution of the red corpuscles, and this is not surprising when one considers the fragility of these cells in certain stages of the disease (Gaucher), but later a marked increase takes place (as much as from 1,000,000 to 2,000,000 per c.mm., Bezais, Klausner). Further proof of increased cell activity is the behaviour of mucous surfaces; thus, non-syphilitic lesions of mucous passages frequently heal under the influence of salvarsan.[9]

The cutaneous effects consist in drug rashes which are mostly erythematous or urticarial in character. Herpes zoster occurred in one case I had injected. Amongst the secretory troubles, œdema of the face, especially of the lips, was noted in several cases. It comes on rapidly and passes off after a short time. Instructive from this point of view is an observation by Fisichella.[10] A woman whom he had treated with salvarsan developed erythematous patches. Later she was treated by another medical man with Fowler's solution, and an identical rash supervened.

The effect upon the alimentary canal shows itself in intense thirst, vomiting, and diarrhœa. Experimentally, this has been studied by Aladow.[11] For practical purposes these troubles are an argument against large doses. The vomiting and the diarrhœa which large doses tend to produce, lead to a speedy elimination of a portion of the drug, and thus the effective dose may become a small one which could have been administered with less discomfort.

As respiratory and circulatory responses we find oppression, dyspnœa, irregularity and smallness of pulse, cyanosis, peripheral algidity, and collapse. With regard to the urinary tract, transient albuminuria, anuria, and even acute nephritis (Gaucher, Weiler), have been observed. One of the cases at Dean-street developed an intense jaundice, which terminated fatally.

The ill-effects are absolutely analogous to those observed in poisoning with other arsenical compounds, and it requires a good deal of blind infatuation not to see this. How uneasy the enthusiasts are about these bad effects is evident by their "explanations," which are replaced by new ones every few months, and are becoming so hypothetical that even such warm supporters of the remedy as Milian are unable to accept them.[12]

In practice, the organotropic properties described above are of less importance, because most syphilitics are sufficiently vigorous to cope with them. More serious is the effect upon the nervous system, which may be differentiated into a meningotropism and a neurotropism (Sicard). In its mild form this action upon the nervous system shows itself in the form of headaches, vertigo, and buzzing in the ears.[13] These symptoms, Sicard's "neurotropisme d'alarme," are a warning not to submit the patient to another injection, or to reduce at any rate the dose, if one wishes to persevere.

Meningotropism in its graver form is characterised by epileptiform convulsions, which are followed by coma, and even death. It has now been observed by a considerable number of clinicians, such as Gilbert, whose case recovered, Almquist, Kannegiesser, Fischer, Oltramare, Caraven, Gaucher, and others. They are inexplicable except as cases of acute arsenical poisoning. Post mortem, the condition of the brain and of the pia mater is diagnosed as acute hemorrhagic encephalitis.

The neurotropism shows itself most frequently in palsies of the seventh and eighth cranial nerves, as was first pointed out by Finger. This predilection of salvarsan is as obscure as that of atoxyl for the optic, or of lead for the musculo-spiral. In the opinion of Ehrlich and of his followers these paralyses are of a syphilitic origin, and supervene in cases which have been incompletely sterilised, whilst Finger regards them as purely toxic. They are by no means rare and do not require special local conditions for their production. They have been observed not only in Vienna but everywhere where salvarsan has been used extensively. They, however, often escape notice, and those who are satisfied with injecting patients and then lose sight of them do not come across them. Moreover, the patients usually consult somebody else after the disaster. I have personal knowledge of two cases which are typical in their way.

CASE 1.—A man suffering from a chancre and a macular rash received an injection of salvarsan at the London Lock Hospital. Eight days later his symptoms had completely disappeared. Believing himself cured, he underwent no further treatment. Nine weeks after the injection, suddenly deafness and facial paralysis supervened. He now sought treatment at a general hospital. As his history pointed to syphilis, a course of inunctions was instituted, with the result that the nerve lesions disappeared.

CASE 2.—A man whose syphilis had been latent for years, and who had been properly treated, was advised to undergo salvarsan treatment with the view of completely eradicating the disease. He is now suffering from facial paralysis which so far has not yielded to the various measures tried.

The former case corresponds well with the views of Ehrlich, but the latter can hardly be understood unless one admits a toxic influence of the drug upon the nerve. I believe with Rille, Delbanco, Meirowsky, and others, that both causes are at work in most cases. Primarily, the nerve is irritated and injured by the salvarsan; the syphilitic process which is so fond of locating itself upon trauma may then supervene, either immediately if there are spirochætæ in the neighbourhood, or at a later period if they have to migrate from distant foci. Thus the four groups of paralyses observed find their explanation. 1. Slight transient palsies which require no treatment. 2. Immediate paralysis curable by antisyphilitic treatment. 3. Irremediable gradual paralysis. 4. Late syphilitic palsy, amenable to antisyphilitic medication. The amount of damage done and its reparability is merely a question of degree, and depends upon the intensity of the lesion produced by the salvarsan.

Recurrences.

The recurrences after treatment with salvarsan are peculiar inasmuch as they do not correspond to the lesions which the stage of the disease would lead one to expect. In the cases treated at the London Lock Hospital they were mostly of an ulcerative character, and usually single. Thus, a man would return with a recrudescence at the site of the chancre, or with a deep ulcer in one of his tonsils, &c. These lesions, which were sometimes rather tenacious, had almost invariably the character of late, chiefly tertiary lesions (rupia, gummata, &c.). Local recurrences were the rule, but lesions in fresh places were also noted. Especially the lower limbs seem to be a situation favoured by these fresh lesions. On the whole, salvarsan tends to precipitate the course of the disease, a phenomenon which is also observable after the use of the strongest mercurial preparations, although perhaps to a lesser degree. I think one is justified in regarding this as evidence that a high degree of sterilisation has taken place. Whether this anticipation of later stages could hasten the appearance of tabes and general paralysis is impossible to say at present. It does not seem probable, however, if one admits that special factors are at work in the production of parasyphilis.

Effects upon Syphilitic Lesions.

Amongst the cases treated at the Lock Hospital with salvarsan there were a few refractory ones, but in the

[9] Semaine Médicale, 1911, No. 10.
[10] Riforma Medica, May 22nd, 1911.
[11] Münchener Medicinische Wochenschrift, 1911, No. 48.
[12] Milian, Nov. 24th, 1911, at the Société Médicale des Hôpitaux.
[13] Sicard, Société Médicale des Hôpitaux, Oct. 27th, 1911.

majority the great symptomatic effect of the new drug was evident. Therapeutic marvels, such as regeneration of bone or disappearance of parasyphilitic lesions, were not observed. In early primary cases (chancre only and negative Wassermann's reaction) the results were excellent. Considering the possibility of aborting the disease at this stage, immediate active treatment is indicated. The past has shown that by excision of the chancre and immediate vigorous mercurial treatment (Erich Hofmann, Bering, and others) an eradication of the disease is possible. In the case of salvarsan even one injection may suffice. It is therefore to be recommended at this stage. Should the attempt fail, a mitigation of the infection is almost certain. In later cases the results are less favourable. There is little hope of eradicating the disease rapidly, and the chancre often heals slowly or recurs. Where the chancre is at all extensive energetic general and local mercurial treatment produces a better result, as I have been able to observe repeatedly. In these cases I combine salvarsan with local and general mercurial treatment.

This form of therapy also seems to be the best for florid secondary syphilis. Whilst lesions of mucous surfaces (condylomata, plaques, &c.) yield rapidly to salvarsan as a rule, the cutaneous manifestations disappear slowly. This is especially the case with papules, which do better under mercurial injections. Moreover, I have gained the impression that salvarsan favours pigmentation in this type of lesion. Under combined treatment splendid results are obtainable; it would seem that the arsenic favoured the action of the mercury. One should also bear in mind that the nerve-lesions occur chiefly in cases belonging to this stage of the malady. It seems, therefore, rational to give mercury the preference in these cases.

The favourable results obtained by many in tertiary syphilis are corroborated by my observations. In this particular stage salvarsan is especially useful. Two groups of cases may be distinguished. To the former belong those whose illness has been mild and who have neglected their treatment. Only when definite lesions trouble them these opportunists seek advice, and any antisyphilitic medication is usually sufficient to remove their worry. Salvarsan, however, not only removes their lesions with greater rapidity, but also prolongs the period of subsequent latency to an extent which is not achievable by other means.

The second group—which corresponds to the malignant cases described by some—comprises those who have been treated fairly regularly, but who, nevertheless, have undergone a thorough syphilisation. Many of them are constantly threatened with fresh outbreaks, and even the most active ordinary therapy can hardly keep their disease in check. Lesions supervene regularly upon the slightest interruption of treatment, or even whilst treatment is being followed. For these cases salvarsan is a true relief: the ulcers heal, the general health improves, and the constant anxiety is removed. These grave cases are, however, very prone to relapse, and the recurrences after salvarsan tend to be more extensive and more refractory than the previous lesions, and thus I have found combined treatment most useful for them. Such therapy should be continued for a considerable time.

Firm scars, advanced infiltrative lesions of long standing, lesions which are no longer syphilitic in a strict sense, show practically no improvement; keloids were, however, favourably influenced in one case. In tertiary lingual lesions the results obtained corresponded with those which we observe after calomel injections. Most cases showed improvement, but in cases where the former injections had failed, salvarsan was equally ineffective.

Since the introduction of Wassermann's reaction late latent syphilis has received great attention. Formerly the history of the illness and the nature of the treatment were the indications, or contra-indications, for further therapeutic measures. Nowadays great importance is attached to the result of the serological test, and many regard a positive reaction as an absolute indication for further treatment. Not only is the correctness of this procedure questionable theoretically, but it is also disappointing in practice. The older the syphilis, the more difficult it becomes to influence the reaction permanently, and salvarsan shows no special superiority in this respect.

The meaning of the term "malignant syphilis" varies with different authors, and this is chiefly the reason why so many cases labeled "malignant" have been recorded since the introduction of salvarsan, and why such favourable results have been reported. Patients who progressed but little under the treatment employed, patients who showed many recurrences, patients with lesions at vital spots, &c., all figure in these reports as malignant. As these cases are examples of ordinary syphilis in which the infection is unusually severe, they are best classed in the stages to which they belong. I reserve the term "malignant syphilis" here for that peculiar form of the disease which was first described by Bazin, and which is frequently termed "syphilis maligne précoce" nowadays. Its course is atypical: the chancre is deeply ulcerative, and leads to considerable destruction of tissue (loss of glans, of entire penis, &c.; secondary manifestations are absent; within a few months cachexia and lesions of the gravest character supervene, such as perforation of palate, deep ulcerations of the skin, gummata in the viscera. This truly malignant syphilis is rare nowadays in Europe. I have been able to observe a few cases of this nature. Two of them were treated with salvarsan, and both patients died, the only deaths recorded at the London Lock Hospital during a year. The former survived his injection by nine weeks; his lesions showed no improvement whatsoever, but progressed, and fresh ones developed. The second one succumbed to an acute arsenical intoxication, and is of special interest. In August, 1909, a chancre was acquired, and subsequently was treated at a general hospital, during which period no secondary symptoms were observed. At the end of October the patient came to the hospital cachectic, covered with extensive and deep ulcers on both legs, and suffering from severe ulceration of his throat. After nine months his lesions had not quite healed, but he was much improved, and had gained a stone in weight. A course of calomel injections during July and August, 1910, removed all remaining symptoms. In September he was well and was lost sight of till February, 1911. He then returned extremely ill, barely able to speak, with terrible ulcerations about the lips and cheeks. He was given an intravenous injection of salvarsan (0·5 gramme). The reaction was intense. Two days later jaundice supervened, which became more pronounced daily. After a week death took place. A post-mortem examination was, unfortunately, not granted.

If I have in the above account paid considerable attention to the ill-effects of salvarsan it is because their appreciation is essential for the building-up of a rational therapy and not because I wish to belittle the value of this remedy. Syphilis is usually a mild disease with an exceedingly low mortality[14] and the mercurial treatment has proved itself to be efficacious and safe for many generations. It is therefore inadmissible to expose the patients to greater risks unless one can promise them an adequate compensation. A rapid cure would be the most valuable gain, and it is to be regretted that disappointment should exist in this respect. Ehrlich already recommends to extend the period of observation to a year or two years,[15] and it is not impossible that the future will impose a further extension. Broquin (Gaucher, Académie de Médecine, Nov. 21st, 1911) and others have observed cases which have spread the disease after having been "cured" by means of salvarsan, not only in their own belief, but also in the opinion of their medical advisers.

It therefore cannot be of general interest to use this new remedy exclusively. The problem of applying the various antisyphilitic drugs to the best advantage of the patients finds its solution in a combined salvarsan and mercury treatment, as advocated by Neisser, and carried out by many at present. Its superiority has been established by the experiences of large cliniques, and by serological researches (Borelli and Messineo, and others). Of course, salvarsan must have a large share in the treatment, and under certain conditions becomes the remedy of selection.

The following maxims I have found useful in planning out a treatment: 1. Salvarsan is of special value where rapidity of action or concentration of treatment is desirable—e.g., for the removal of certain infective lesions, for patients whose conditions of life render a regular treatment impossible.

[14] The statistics of the United States Census Bureau for the Registration Area with 51,000,000 inhabitants (56 per cent. of the total population) show 2999 deaths due to venereal disease, and of these 1582 are hereditary syphilitic infants under one year. There have thus been less than 1417 deaths due to acquired syphilis, whilst tuberculosis carried off 81,720, cancer 37,562, and pneumonia 70,033 persons during the same period.

[15] Münchener Medicinische Wochenschrift, 1911, No. 47.

2. It is widely applicable, as its toxicity is small. Cardiac disease, syphilis of the nervous system, and concomitant grave maladies are its chief contra-indications. 3. The intravenous method is the only recommendable one. 4. Repeated medium doses are preferable to a few large ones. 5. Its use is indicated where mercury has failed. 6. In very early cases an attempt at aborting the disease by excising the chancre and administering salvarsan is advisable. 7. In florid secondary syphilis combined salvarsan and mercury treatment should be instituted and persevered with. 8. The severe tertiary cases should also be submitted to this combined treatment. 9. In mild tertiary cases salvarsan recommends itself by the rapidity of the removal of the lesions, and by the long duration of the subsequent latency. 10. Truly malignant cases are as hopeless under salvarsan treatment as otherwise. 11. In late latent cases and in parasyphilis the administration of salvarsan presents no utility.

My sincere thanks are due to Mr. Ernest Lane for the liberal way in which he allowed me to make use of his large clinical material.

SYPHILITIC AORTITIS WITH VALVULAR INCOMPETENCY.[1]

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THE object with which the living patient (if one may for convenience use that unnecessary qualification) is presented, is, to illustrate some points which serve to distinguish the type of aortic valvular disease he represents from that of which the deceased patient was a pronounced example.

CASE 1. *Aortic valvular disease from rheumatic endocarditis.*—The patient is a man, 22 years of age, who has been under my observation at the Great Northern Central Hospital since he was a boy of 13. At a still earlier age he had suffered from rheumatic fever, and when he first came to hospital he had the usual clinical signs of aortic regurgitant disease with consecutive hypertrophy. When 19, incapacitated for all work and suffering much from anginoid pain, a præcordial thoracostomy was performed upon him for me by Mr. Ewen C. Stabb, with great relief to his symptoms. An account of the case was published in THE LANCET of July 4th, 1908. He was also shown at the Polyclinic among other patients about two years ago, and it may interest you to examine him again, being as he is in comparative comfort and earning his livelihood by a light occupation.

My chief reason, however, for showing him now is that he was the most typical case of aortic valvular disease from rheumatic endocarditis which I could at the moment produce in order to indicate the differences between cases of this kind and those of specific aortitis with aortic valvular incompetency, of which I purpose speaking presently. He also illustrates instructively the importance of the purely mechanical factor in heart disease.

We have here the case of a young man giving an early history of rheumatic fever, followed by aortic valvular disease, and the gradual increase of the heart in ventricular bulk and power, to conduct the blood-flow, rendered more difficult by the mechanical valvular lesion. This stage is followed by one in which a powerful ventricle is caged and limited in its effective output of energy by skeletal embarrassment, and exhausted by the effort of raising the resistant chest wall, in addition to driving the blood. Relieved by operation from this additional work, and having now to deal chiefly with the difficulty due to valvular defect, the hypertrophied organ accomplishes its task with comparative ease and with greatly lessened discomfort to the patient.

CASE 2. *Syphilitic aortitis with valvular incompetency.*—The other case, represented here only by his heart, was that of a man, 37 years of age, who was admitted under my care at the Great Northern Central Hospital on May 6th, 1911. More recently he had been man-servant to a gentleman, by whom in illness he had been treated with much consideration. He had formerly been a soldier and served in the Boer War. After his return from that campaign he stated that he had suffered from rheumatism, but had never had rheumatic fever. His general health, he maintained, had always been excellent, and he denied having ever had syphilis. This history, as I shall show, was incorrect on a material point.

In November, 1910, he began to suffer from shortness of breath and was placed in a nursing home in December and the following January. Since that time, and until his admission to the Great Northern Central Hospital, he had done little work. Exertion was stated to induce epigastric pain.

When admitted he was seen to be a well-developed man suffering little when at rest. There was no œdema, dyspnœa, or pain. The organs generally were sound except the heart; with this, the apex beat was visible in the sixth intercostal space, 2 inches to the left of the nipple line. The right limit of cardiac dulness was half an inch to the right of the sternum and the upper limit in the second intercostal space. There was a disastolic bruit audible in a curved line, with the convexity to the left, from the right cardiac base to the apex, and a systolic bruit is noted in the record as audible at the apex itself. The aortic diastolic bruit was, however, the chief sign of valvular defect. The pulse-rate was 90 and the rhythm regular. The temperature was normal.

Until the beginning of June he was apparently benefited by rest and general treatment. The note on June 1st is that the heart's apex beat was an inch and a half to the left of the nipple line, its action quite regular, the pulse-rate 88, and the diastolic bruit rather less distinct, but still loud. The patient expressed himself as feeling much better.

After this, however, his condition became less satisfactory. He lost strength, and anasarca showed itself and steadily increased. From June 15th to July 7th, as cardiac failure was progressive, digitalis in considerable doses was administered. The patient took from 15 to 20 minims of the tincture every four to six hours, but without effect upon the rate or rhythm of the pulse. It was now thought desirable, although syphilitic infection was positively denied, to determine the point by Wassermann's test, which was first employed by the pathologist to the hospital (Mr. Ernest Shaw) on July 6th, when it was found to be positive on this and six subsequent occasions. The result was so typical that the patient's blood was used as a standard in examining other cases of suspected syphilis in the hospital. Specific treatment was used, but with negative result, which was to be anticipated under the circumstances.

On July 26th the patient suddenly became a good deal worse. He had a sudden attack of pain in the præcordia with dyspnœa and extreme pallor. He had, in short, an attack of angina pectoris—the only attack while in hospital—and required vigorous stimulation to recover. Next day he was somewhat better. On July 28th cardiac arrhythmia was observed for the first time. It was of a regular type, although the ventricular pause occurred at the end of series of seven and ten pulsations. The heart-rate was 114 to 120. The arrhythmia did not persist, and at no time was there any ventricular retardation. He gradually sank, showing progressive enfeeblement of pulse, and died on August 2nd.

In view of the anatomical changes found post mortem the following further particulars of the temperature and heart's action may be given. The temperature was normal or slightly subnormal during the first five weeks after admission, with the exception of one day, when it only reached 99·6° F. During this period the pulse-rate ranged from 82 to 100, and only on one occasion reached the latter figure. In the sixth week the temperature reached 100°, when the pulse also on one occasion was 100. The seventh and eighth weeks were uneventful in this respect, the temperature and pulse-rate being as before. In the ninth week the evening temperature was slightly raised, but the highest recorded was 99·6°, and the pulse ranged from 90 to 104. The tenth week began with a subnormal temperature and ended with a slight rise above normal, which then fell for three days to subnormal, but rose on July 25th to 100°, the pulse becoming quicker and feebler and the respiration accelerated. In the lethal exitus, which lasted from July 27th to August 2nd, the temperature reached its highest point (from 100° to 100·8°), the pulse-rate rising from 114 to 132 and the respiration from 30 to 40. On two

[1] Being based on a clinical demonstration given at the Medical Graduates' College and Polyclinic. The demonstration consisted in the exhibition of one patient and the consideration of the case of another, who was only represented by his heart and by microscopic sections prepared from it.

FIG. 1.

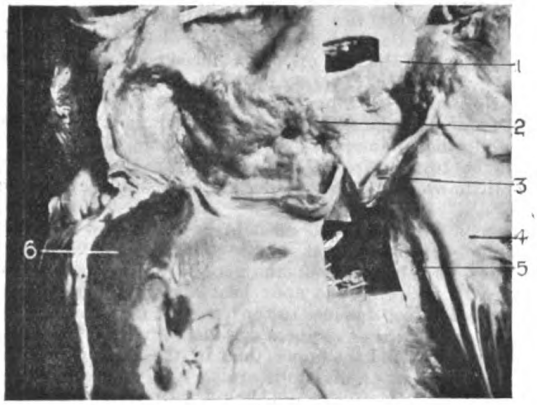


FIG. 2.

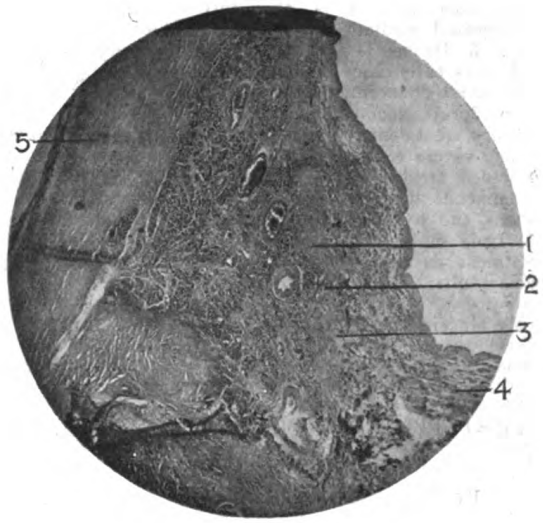


FIG. 3.

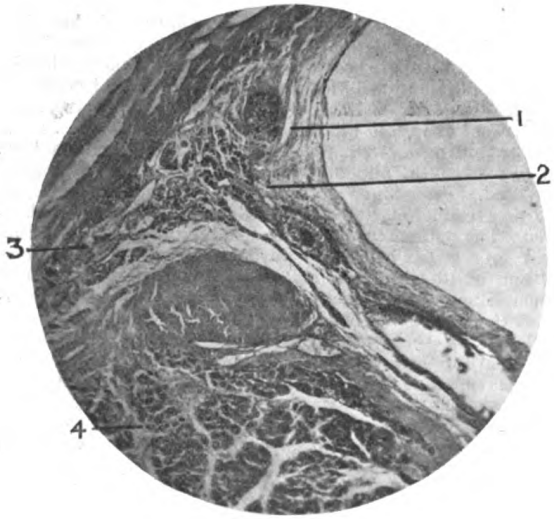


FIG. 4.

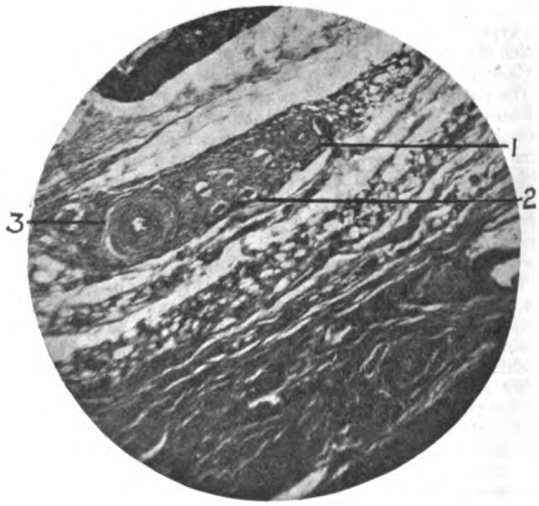
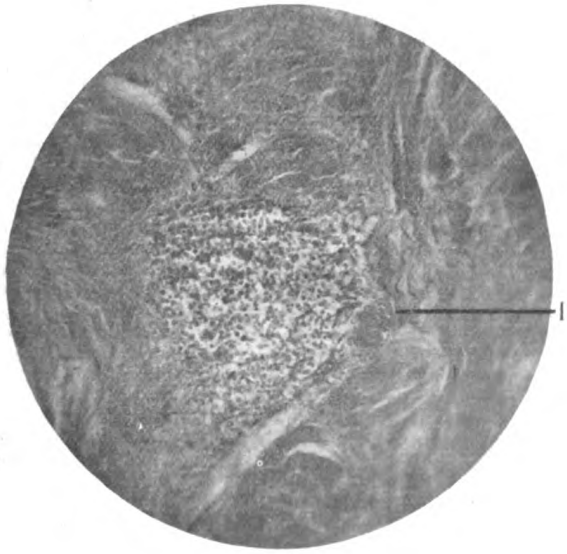


FIG. 5.



DESCRIPTION OF ILLUSTRATIONS.

FIG. 1.—Syphilitic aortitis. 1. Portion removed for examination. 2. Right coronary artery with surrounding puckering. 3. Non-coronary aortic cusp. 4. Mitral valve. 5. Portion removed for examination of the bundle. 6. Left ventricular wall.

FIG. 2.—First portion of the auriculo-ventricular bundle. 1. Fibrosis of the bundle. 2. Endarteritic thickening of blood-vessel. 3. Right limb of the bundle. 4. Portion of the septal cusp of the tricuspid valve. 5. Pars membranacea septi. Swift's objective 1 in.

FIG. 3.—Later portion of the bundle. 1. The large obliterated artery with obliterated branch. 2. The right limb of the bundle. 3. The left ventricular limb of the bundle, showing considerable muscular atrophy. 4. Left ventricle. Swift objective $\frac{1}{2}$ in.

FIG. 4.—Atrophied nerve cells in sclerosed ganglion. 1. Almost obliterated artery. 2. Atrophic cells. 3. Larger artery almost obliterated. Swift objective $\frac{1}{2}$ in.

FIG. 5.—Gumma in aortic wall. 1. Gumma. Swift objective $\frac{1}{2}$ in.

days between these dates the temperature fell to subnormal and the pulse-rate and respiration fell with it.

Necropsy.—At the post-mortem examination—which was made by the pathologist to the hospital—a little fluid was found in both pleuræ. The lungs were congested, dry, and tough. There were several hæmorrhagic infarcts visible under the pleuræ, and one of them was decolourised and softened and had evidently existed for some days. The pericardium contained a little clear fluid; there was a large milk spot on the anterior surface of the heart and a few petechiæ behind. From the right auricular blood the bacillus coli communis was grown.

The heart itself weighed, with contained blood, 38 oz., and without it 25 oz. The organ was firm and heavy, and the muscle rather paler than normal. The dextral valves were normal. The left ventricle was much dilated, and the mitral orifice admitted three fingers and was six inches in circumference. The cusps were rather thickened and narrow. The left auricle was large. The coronary arteries opened higher up in the aorta than usual, and were small both at their orifices and in calibre.

The aorta was extremely atheromatous and rather dilated, and showed two small bulgings just above the valves. The surface of the vessel was much puckered, as the photograph (Fig. 1) shows, and there were no calcareous patches. The valves were distorted and incompetent. The left pneumogastric nerve as it approached the heart was markedly thickened. The abdominal organs showed no other change than resulted from a passive congestion.

Microscopical examination.—I later examined portions of the heart and aorta microscopically, with the following results:—

The arteries, chiefly in the auricles and interauricular septum, in the pars membranacea septi, and in the peri-aortic cellular tissue, showed advanced obliterative endarteritis. In one section a large artery and its branches, immediately above the auriculo-ventricular bundle, were completely obliterated and showed advanced connective tissue production and total disappearance of all muscular elements. The auriculo-ventricular bundle was likewise shot with an excess of veins.

While the ventricular muscle showed here and there marked fibrosis the auricular muscle and interauricular septum were most affected by fibrotic changes with interstitial nucleolysis. The first portion of the auriculo-ventricular bundle, before definite bifurcation (Fig. 2), shows advanced sclerosis with nucleolysis, and especially in its *right* half. The muscular element itself is exsanguinated and atrophied in parts. After the bundle has definitely bifurcated, in the neighbourhood of the completely obliterated large artery above referred to (Fig. 3), the same atrophic condition of muscle is observable, but most so in the *left* ventricular limb of the bundle. Ganglionic nerve cells, lying between vessels largely obliterated, show atrophy of the cell elements (Fig. 4), and in other parts nerve bundles exhibit a hyper-nucleolysis. The thickened pneumogastric nerve shows well-marked gummatous nucleolytic deposits in its fibrous sheath.

Gumma may, of course, also occur in the musculo-fibrous coat of the aorta, as is shown in Fig. 5, taken from another case of syphilitic aortitis, which died from rupture of an abdominal aneurysm. The sino-auricular ganglia were missed in the case I have related at length, in an endeavour to procure a horizontal section, but I have found some cells of the ganglia to be atrophic in another case of cardiac syphilis, without any disorder of cardiac rhythm resulting.

Remarks.—Syphilitic disease of the heart and aorta, apart from aneurysm, has, since Ricord's day, been studied by many authors. In THE LANCET in 1897[2] there is an excellent article on syphilis of the myocardium by Dr. Sidney Phillips, who refers to previous work on the subject. Sir William Osler and Dr. Mitchell Bruce dealt with the matter in their Lumleian lectures,[3] and Sir Clifford Allbutt has, by publications extending over a lengthened period, made the "suprasigmoid portion" of the aorta his own.[4] Foreign medical literature also deals with the condition fully.

These facts notwithstanding, syphilitic aortitis with valvular incompetency, though a distinct clinical entity, is a type of valvular disease which is not always recognised as such, although, with reasonably careful investigation and reflection, it should not fail to be detected. A comparison of the two cases to which I have referred above serves to indicate the chief elements in clinical diagnosis. Of the rheumatic type I have already spoken.

The patient affected with specific aortic valvular disease is usually a man, and generally comparatively young, but not a youth. His age varies from 30 or 35 to about 50. Even on careful investigation, and as a rule, no history of rheumatic or scarlet fever is to be elicited. Nor is there a history of physical disability in earlier life. The patient has usually followed some active calling, and often that of a soldier or sailor. Ultimately he becomes dyspnœic on exertion, frequently complains of attacks of pain in his chest or epigastrium, and on examination reveals aortic valvular disease with consecutive enlargement of the organ.

If he fail to respond to treatment (as he frequently does at the stage at which he presents himself) and die, the necropsy reveals an atheromatous aorta and puckering of the valves, which, considering the comparative youth of the patient in most cases, and an absence of the history of the usual acute infections which induce heart disease, leads, even when syphilitic infection is denied, to a diagnosis of the consequences of that condition. More minute investigation of the textures confirms the correctness of this view.

The clinical history and anatomical examination of the case I have related exemplify these facts in a typical manner. The case is also interesting because, although there were well-marked changes in the auriculo-ventricular bundle, such as have been described as occurring in cases exhibiting "heart-block" or the dissociated action of the auricles and ventricles, that condition was not present in this instance. Had it occurred partially or completely, the anatomical conditions found would have been considered by some quite sufficient to account for that state.

Dr. Thomas Lewis has collected and carefully analysed 50 cases of complete or partial heart-block, in 11 of which syphilitic invasion or affection of the auriculo-ventricular bundle was regarded as causal of that condition.[5]

The anatomical changes, whether in nerve, muscle, or interstitial tissue, appear to be largely due in cardiac syphilis to that condition of the blood-vessels so characteristic of this state, which interferes with the due nutrition of the structures affected. The pulmonary infarction and bacillary heart blood of the case I have related was evidently a so-called terminal infection and had no bearing on the general clinical history.

Treatment.—As Sir William Osler has remarked with regard to the treatment of aortic aneurysm of specific origin, it is its prevention by suitable and sufficient treatment of the early infection which is most important. This doubtless holds good also for other ultimate manifestations of cardio-vascular syphilis. But to prevent is not to treat either aneurysm or aortitis. The frequently observed beneficial effects of the treatment of late manifestations of syphilis by mercury and the iodides justify, nevertheless, the expectation of benefit from this line of treatment in the type of case with which we have been dealing. But when cardiac failure has occurred in an advanced case such as I have related, little good can be expected to follow the use of any remedy, the anatomical changes described being permanent and important structures atrophied and impaired in function.

Although common experience teaches us that cardiac failure with a mitral lesion is more amenable to treatment by the digitalis group than a similar failure with aortic lesion, we know that digitalis has at times a well-marked effect in reducing the heart-rate in aortic valvular disease. The failure of these agents to do so in the case discussed has a certain interest, as it has been suggested that lesions of the bundle of His render the retardant action of the digitalis group on ventricular action more probable. Such a *modus operandi* of these agents is, however, at present, merely a supposition on the part of those who entertain it.

Upper Berkeley-street, W.

[2] THE LANCET, Jan. 23rd, 1897, p. 223.
[3] THE LANCET, March 26th, 1910, p. 839; and THE LANCET, July 8th, 1911, p. 69.
[4] System of Medicine, vol. vi.
[5] The Mechanism of the Heart Beat, 1911, pp. 102-105.

THE CLINICAL SIGNIFICANCE OF X RAY AND RADIUM MEASUREMENTS.[1]

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IT is desirable for clinical and experimental biological purposes to have some comparative measurements between the intensity and character of the radiation from an X ray bulb working under specified conditions and that from a known quantity of radium. The character of the radiation from both is complex. Under whatever conditions an X ray bulb is working the radiation coming away from it is heterogeneous, consisting of rays varying in their penetrating power. The radiation from radium (and the short-lived products in equilibrium with it, Ra emanation RaA, RaB, and RaC) consists of alpha, beta, and gamma rays, which are also heterogeneous in type.

Measurements have been made of the penetrability through

[1] A paper read before the Roentgen Society on Jan. 2nd, 1912.

aluminium of the X rays emitted by a bulb under varying conditions of spark gap, and compared with the penetrating power of beta and gamma rays through the same substance. The alpha rays from radium are completely stopped by 0·05 mm. aluminium, so that under most conditions of irradiation their effects may be neglected.

The intensity of X rays has been measured by the ionisation that they produce in the air of an electroscope. This has been compared with the ionisation produced in the same electroscope by the gamma rays from a known quantity of radium.

The last part of the paper affords some evidence that the biological effects of X, beta and gamma rays are proportional to the ionising action of these rays.

Method of Measurement.

The character of the X rays from a bulb under varying conditions of spark gap was determined by means of the

FIG. 1.

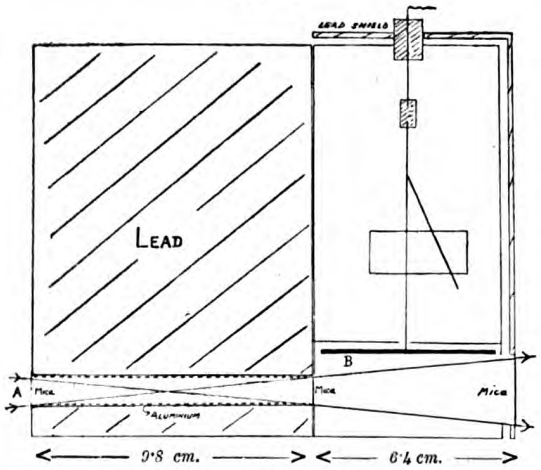


Diagram of apparatus.

apparatus in Fig. 1. A beam of X rays enters the electroscope through an aperture A in a lead block which was lined with aluminium to eliminate any secondary X rays from the lead. The beam on entering the electroscope ionised the air beneath the metal plate B which was connected to a gold leaf system, the rate of fall of the gold leaf serving as a measure of the amount of ionisation produced by the rays. The mica windows allowed of the accurate alignment of the anode. By placing aluminium screens at A in the path of the beam the penetrability of the rays is found by the change in the ionisation thereby produced.

The criterion for the homogeneity of X rays is that they are absorbed according to an exponential law. Corresponding to any thickness of matter traversed by the rays the ionisation has a certain value. If the logarithms of the values of the ionisation are plotted as ordinates and the thickness of matter traversed as abscissæ, the points on the diagram will lie on a straight line if the absorption of the rays has followed an exponential law. This test when applied to the radiation from an X ray bulb reveals the heterogeneous character of the rays, as may be seen from Fig. 2. Three typical cases are exhibited, Curves I., II., and III., corresponding to spark gaps of 4·5, 8·5, and 19 cm. respectively, the same current flowing through the primary in each case. At 19 cm. spark gap the beam is almost homogeneous after 1·12 mm. of Al have been traversed, as may be seen from the approach of the curve to a straight line. On the same diagram are drawn corresponding curves for the beta and gamma rays from radium, use being made of data obtained by Kovarik and McLelland. It will be seen that whereas the beta rays are rather more easily absorbed by aluminium than the X rays excited by a very "soft" bulb, the gamma rays are very much more penetrating (about 30 times actually) than the X rays from a very "hard" bulb.

The data corresponding to the three cases considered are collected in Table I.

TABLE I.—*Absorption of X Rays by Aluminium.*

Current.		Spark gap.	—
Primary.	Secondary.		
4·5 ampères.	0·9 milliampères.	4·5 cm.	I.
,, ,,	0·45 ,,	8·5 ,,	II.
,, ,,	0·15 ,,	19 ,,	III.

Ionisation after Passing through Aluminium.

	0	0·56 mm.	1·12 mm.	1·68 mm.	2·24 mm.	2·8 mm.	3·36 mm.
I.	100	25·1	15·7	9·8	8·5	7·5	—
II.	100	34·7	23·0	15·1	12·7	10·6	9·6
III.	100	40·2	29·2	24·4	21·2	17·5	15·3

Percentage Absorbed by 0·56 mm. Al after Rays have passed through the following thicknesses:—

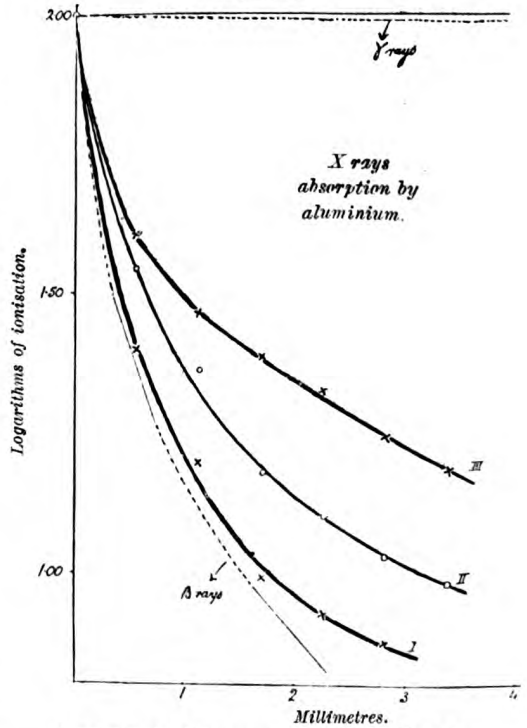
	0	0·56 mm.	1·12 mm.	1·68 mm.	2·24 mm.	2·8 mm.
I	74·9	37·4	37·6	13·2	11·2	—
II.	65·3	33·7	34·3	15·9	16·1	9·8
III.	59·8	27·2	16·4	13·1	17·4	12·5

For the whole series of observations the current through the primary coil was kept constant. If this were changed the type of radiation from the bulb would be altered.

The Coefficient of Absorption of the Rays.

It is convenient to refer to the penetrating power of a beam

FIG. 2.



Curves showing heterogeneous character of the rays.

of rays in terms of a coefficient[2] (λ) the numerical value of

[2] The value of λ is obtained as follows: The intensity of a homogeneous beam in its passage through matter may be represented by the equation—

$$I = I_0 e^{-\lambda d}.$$

Where I_0 is the initial ionisation produced by the beam and I the ionisation produced after a thickness of matter d has been traversed. Hence—

$$= \frac{2{\cdot}302\,(\log_{10} I_0 - \log_{10} I)}{d}.$$

which is inversely proportional to the penetrability of the beam. A large value of λ corresponds to an easily absorbed beam and a small value to a very penetrating one. λ also varies according to the nature of the absorbing material. If after traversing 1 cm. of matter the ionisation in the electroscope is reduced to one half its initial value, $\lambda = 0{\cdot}69$ cm.$^{-1}$. This is just about the mean value found for the absorption by fatty tissue (breast) of a beam of X rays of "medium" hardness (9·5 cm. spark gap). For a "hard" beam, previously screened by 1·12 mm. aluminium, the value of λ for the same tissue is $0{\cdot}45$ cm.$^{-1}$, and this value is used in a later section to illustrate the fall in the intensity of X rays in their passage through the tissues. It is clear that when dealing with a heterogeneous beam the value of λ varies with each succeeding layer of matter traversed, whereas it is a constant if the beam is homogeneous.

Approximate values of λ for the maximum part of the radiation corresponding to Cases I., II., and III. have been obtained after the very soft components were cut out. These are collected in Table II., which also contains values of λ for the beta and gamma rays from radium.

TABLE II.—*Values of the Coefficient of Absorption (λ in cm.$^{-1}$) for Aluminium.*

X rays under conditions of spark gap.						
Beta rays		4·5 cm.		8·5 cm.	19 cm.	Gamma rays.
75–13·5	.....	8·1	.....	5·6	..... 2·9	..... 0·104

The coefficient of absorption λ being inversely proportional to the penetration of the rays, the enormous difference in the penetrating power of beta and gamma rays is easily appreciated by a comparison of their coefficients.

The Ionisation caused by X and Gamma Rays.

The ionisations caused by unscreened X rays at a spark gap of 9 cm. and by the screened rays at a spark gap of 19 cm. were measured and compared with that produced by the gamma rays from a known quantity of radium. The results are collected in Table III., from which may be seen the quantity of radium required to give the same ionisation in the electroscope by means of gamma rays, as that produced by an X ray bulb working under the specified conditions. The ionising effect of the beta rays from radium being about 50 times that of the gamma rays, the beta ray equivalence may be taken as one-fiftieth of the numbers given for the gamma rays.

TABLE III.—*Comparison of Ionisations.*

Gamma Rays.

Quantity.	Distance.	Leak.	(Distance)^2 × leak per grm. radium.
Emanation from 18·5 mgr. Ra Br_2	19 cm.	0·51 div/min.	17,000
0·357 grm. Ra Cl_2	94 ,,	0·54 ,,	17,450
		Mean ...	17,225

X Rays.

Spark gap.	Screen.	Distance.	Leak.	(Distance)^2 × leak.	Gamma ray equivalent in grms. radium.
9 cm.	None.	94 cm.	105 divs/min.	928,000	53·8
19 ,,	1·12 mm. Al.	,,	17·3 ,,	153,000	8·88

Clinical Considerations.

1. *Surface conditions of irradiation.*—The unscreened X rays from a bulb running under a spark gap of 9 cm. are equivalent in ionising action to the gamma rays from 53·8 grm. of radium, if placed in the same position as the anode (*vide* Table III.). Experimentally the anode is not usually nearer than 10 cm. from the surface to be irradiated, whereas an application of radium may be made directly on the part in question, and therefore one half of the total radiation is utilised. Hence, comparing the intensity of irradiation per square centimetre of surface under these conditions, and taking the area of the sphere with the anode at centre as 1250 sq. cm., we have—

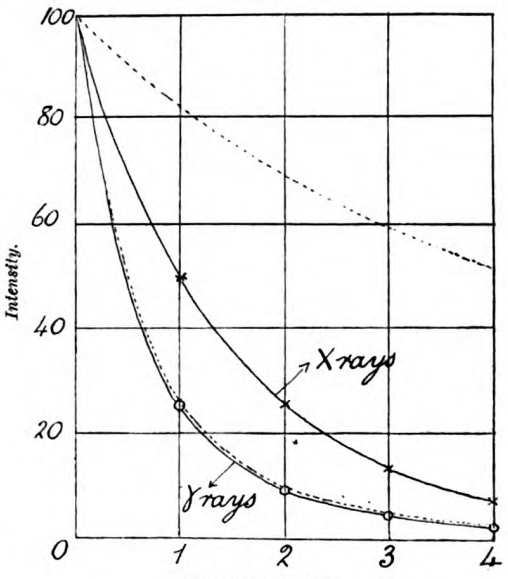
$$\text{X ray intensity per sq. cm.} = \text{gamma rays from } \frac{53{\cdot}8 \times 2}{1250} \text{ grm. radium per sq. cm.}$$
$$= \text{gamma rays from } 86{\cdot}1 \text{ mgrm. radium per sq. cm.}$$
$$= \text{gamma rays from } 146{\cdot}6 \text{ mgrm. radium bromide per sq. cm.}$$
$$= \text{beta rays from } 2{\cdot}93 \text{ mgrm. radium bromide per sq. cm.}$$

Assuming the simplest relation between the biological effects of the rays and the ionisation that they produce, it might be expected that the irradiation of thin layers of tissue by X rays from a "medium" bulb or by the beta rays from 2·93 mgrm. of radium bromide per square centimetre, for the same interval of time, would lead to similar biological results under the conditions specified above.

Some experiments have recently been completed by Dr. B. H. Wedd and myself (which were communicated to the meeting of the Pathological Society of Great Britain and Ireland on Jan. 5th, 1912) upon the effect of these different rays on inoculable mouse tumours.

With an intensity of 2·81 mgrm. of radium bromide per square centimetre the effect of the beta rays upon the tumours for various times of exposure bore a marked resemblance to the effects under "medium" X rays for a similar time range. With the above quantity of radium an exposure of the tumours for 18 hours to the gamma rays

FIG. 3.



Curves showing diminution in intensity of rays in passing through the tissues.

failed to give definite evidence of any biological effects. Subsequent calculation on the above lines indicated that an exposure lasting 50 hours would have been necessary.

2. *Deep-seated conditions of irradiation.*—Under these circumstances a "hard" bulb would be used and the soft constituents of the beam of X rays may be cut out by 1·12 mm. of aluminium. Reference to Table III. shows that for a screened bulb running at 19 cm. spark gap the anode of which is at a distance of 10 cm. from the surface in question—

$$\text{X ray intensity per sq. cm.} = \text{gamma rays from } \frac{8{\cdot}88 \times 2}{1250} \text{ grm. radium per sq. cm.}$$
$$= \text{gamma rays from } 24{\cdot}3 \text{ mgrm. radium bromide per sq. cm.}$$

This is the condition holding at the surface. The intensity of the X rays in passing through the tissue diminishes owing to the increase in distance from the anode, and to the absorption of the rays. The variation in intensity due to the increase in distance, assuming the inverse square law to hold, is shown by the upper dotted line in Fig. 3, and when the

absorption is taken into account the true diminution of intensity through successive layers of tissue is shown by the full line curve. The value for λ is taken as $0 \cdot 45$ cm.$^{-1}$ (*vide supra*).

If a disc 1 cm. in diameter be covered with radium the gamma radiation per square centimetre vertically below it decreases with the distance in the manner indicated by the lower dotted curve in Fig. 3. Taking the absorption of the rays by the tissue into account the full line curve is obtained. The rapid fall in the intensity through succesive layers is almost entirely due to the increase in distance, the absorption by the tissue being very small.

It will be seen that starting with equivalent intensities at the surface there would, under the experimental conditions cited, be a more marked diminution in the intensity of the gamma rays than in the X rays, despite the fact that the absorption of the rays by the tissues was nearly 30 times greater in the latter than in the former case. It must be understood that this quantitative estimation of the amount of radiation received by different layers of tissue is not a general one, but refers to the particular case in question. If the radium were deposited over a larger area the fall in intensity through the tissues would not be so large.

MEMBRANOUS RHINITIS:

ITS RELATION TO DIPHTHERIA AND ITS TREATMENT BY AUTOGENOUS VACCINE.

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THIS paper is written in the first place to illustrate the relation between membranous rhinitis and diphtheria by an account of a school outbreak in which both conditions occurred; and in the second to describe the treatment of three cases of membranous rhinitis by an autogenous vaccine. Incidentally attention will be drawn to secondary diphtheritic lesions in one of the cases.

General features.

Membranous, fibrinous, or primary diphtheritic rhinitis has been recognised as a disease since 1871, when Schuller published the first clear account of it. It is a condition occurring mainly during childhood, and characterised by the formation in the nasal fossæ of a definite membrane from which virulent diphtheria bacilli can be obtained with ease. With the membrane is frequently associated an extremely profuse and often irritating discharge which may cause excoriation of the nostrils. In the untreated condition the membrane is white, is closely incorporated with the mucous membrane, and bleeds readily on being swabbed. The patient's general health commonly is almost or quite unimpaired, the condition suggesting only a persistent severe cold in the head, and the paralytic and cardiac sequelæ of ordinary diphtheria are never found. This primary diphtheritic rhinitis is of course totally distinct from the serious secondary form occurring in naso-pharyngeal diphtheria.

Cases of the disease have been reported by Major, Seifert, Chapin, Gluck, Raulin, Gerber, Podack, Pluder, Wishart, Abel, and others. A complete bibliography of these is given by Ravenel[1] up to 1895 and by Lack[2] up to 1899, while Cartaz[3] gives a few more recent references up to 1908. Since then other cases have been reported at intervals, one of the latest being that of Ellett.[4] Of the monographs on the subject those of Lack[2] and of Gerber and Podack[5] are among the most complete and authoritative.

The identity of the organism causing membranous rhinitis with that causing diphtheria has been demonstrated repeatedly. The researches of Lack[2] and of Meyer[6] in this respect are among the most complete. In both the morphological, cultural, and animal tests were made. The organism found in membranous rhinitis is frequently of very marked virulence, and is in all cases virulent in some degree.

Frequency.

The frequency of the condition is not sufficiently recognised, a fact due doubtless in part to inadequate examination and in part to the characteristic membrane being hidden by the profuse secretion which accompanies it. Lack[2] found that as many as 2¼ per cent. of the cases seen at the throat and ear department of the Paddington Green Children's Hospital in 1897 had membranous rhinitis, while Potter[7] believes that this affection forms 2 per cent. of all cases of acute rhinitis.

Duration.

Its duration is very variable. The average is given as three weeks (Potter, quoted by Clifford Allbutt[8]), but in many instances the disease is extremely chronic. Out of 36 cases recorded by Lack the most chronic recovered in 10, 12, 14, and 18 weeks.

Relation to Diphtheria.

The relation of membranous rhinitis to diphtheria has been a much-debated point. Some observers hold the view that the two diseases are quite distinct and that one cannot give rise to the other, while in the opinion of others they are closely related, each being capable of causing the other. Lack,[2] from a careful analysis of a considerable number of cases, concludes that membranous rhinitis has a special tendency to reproduce itself and not to produce diphtheria. He admits, however, that very rarely diphtheria may give rise by direct infection to fibrinous rhinitis. Parker,[9] again, states that "membranous rhinitis is infectious as membranous rhinitis and diphtheria as diphtheria." For the second view Pluder[10] and others record cases where contacts with membranous rhinitis have developed definite diphtheria with diphtheritic exudate on the tonsils. *A priori* the fact that the bacillus is identical for the two diseases suggests strongly that the one will be capable of giving rise to the other. Of the two, membranous rhinitis would appear to give the most fruitful opportunities of infection, from the abundance of infective nasal discharge which must almost inevitably be distributed broadcast. The nose is likely to be a frequent channel of infection, from the readiness with which in young children the lips, face, fingers, clothes, handkerchief, books, &c., become contaminated with nasal secretion. The extreme importance of nasal discharge in the spread of diphtheria, and especially the importance of membranous rhinitis as a source of a discharge of virulent nature, has been emphasised by one of us[11] on a previous occasion.

We would here urge a very important practical point in the taking of swabs from cases of fibrinous rhinitis. The nasal discharge should be wiped away and the swab firmly applied directly upon the membrane. At times the nasal secretion gives negative results.

A School Outbreak of Diphtheria.

In reference to the probable influence of membranous rhinitis in the spread of diphtheria, attention is called to the following school outbreak of diphtheria.

Prior to the cases about to be described, which began during September, 1911, there had been no notified or suspected diphtheria in the school during the year. Throughout the outbreak there was very little diphtheria in Brighton as a whole. The first group of cases, occurring between Sept. 8th and Oct. 4th, was limited to Class IV. of the infants' department, and was as follows:—

1. On Sept. 8th a girl, A, developed a sore throat, but remained at school till Sept. 11th. She was then excluded for three weeks and returned to school on Oct. 2nd.

2. On Sept. 11th a girl, B, developed diphtheria, for which she was admitted to the Fever Hospital on Sept. 13th. She had then abundant exudate on both tonsils. The throat swab was positive, the nose swab negative.

3. On Sept. 12th a girl, C, stayed away from school with a sore throat and exudate on the tonsils. She was visited at home, but the throat-swab taken was found to be negative. She returned to school, after three weeks' exclusion, on Oct. 2nd.

4. On Sept. 13th a boy, D, had a sore throat. He attended school on Sept. 14th, but was then excluded for three weeks. He returned on Oct. 4th.

5. On Monday, Oct. 2nd, a girl, E, fell ill with diphtheria and was taken to the Fever Hospital on the same day. She had then exudate on one tonsil. The throat swab was positive, the nose swab negative. E's last attendance at school was on Friday, Sept. 29th.

As a result of this case following on the previous suspicious series the school was visited on Oct. 4th and swabs taken from all children in Class IV. exciting suspicion. Those children in particular were picked out who had either a history of recent sore-throat or a sore or running nose. The results of the bacteriological examination were as follows:—

1. Throat swabs from C and D were positive, from A negative, but three weeks had elapsed since the sore-throat in this case.

2. A girl, F, was found to be suffering from definite membranous rhinitis with copious nasal discharge. The nasal swab was positive.
3. A boy, G, had a positive nasal swab. This boy, who was taken to the Fever Hospital on Oct. 4th, was an ordinary chronic carrier in good general health. After suitable local treatment he was discharged free from diphtheria bacilli on Nov. 2nd.

Thus between Sept. 8th and Oct. 4th the following cases had occurred in one class of about 50 children in a school which had apparently been free from diphtheria for many months: four cases of diphtheria, one of sore-throat yielding a negative swab three weeks after onset, one nasal diphtheria carrier without obvious disease, and one case of membranous rhinitis. Between these dates no other cases of diphtheria, certain or suspected, occurred in the school.

It is unfortunately impossible to date the onset of the membranous rhinitis in F. The association, however, of membranous rhinitis and diphtheria is so close as regards time and place that it suggests strongly that the two diseases did not arise independently of one another.

A fortnight later three further cases of diphtheria occurred in the infants' department of the same school. On Oct. 14th H in Class V. developed a severe attack, while about Oct. 22nd P in Class IV. and R in Class III. had mild attacks.

As the result of an examination of school children on Oct. 24th a second group of cases, this time in Class V. of the infants' department, was isolated as follows:—

1. A boy, J, who had been absent on Oct. 20th with a sore throat gave a positive throat swab.
2. Three children, K, L, and M were found in Class V. with definite membranous rhinitis. The nose swab in each case was positive. There was no evidence of the date of onset in K, but she had at the time of the examination a sister under medical treatment at home for sore-throat. A swab taken by the doctor from this sister was negative. L had had a sore throat on Oct. 21st, and at the time of examination had profuse nasal discharge and left otorrhœa. M had had nasal discharge for some weeks before Oct. 24th.

This second group, comprising three cases of membranous rhinitis and two of diphtheria occurring in one class of about 50 children, suggests two conclusions: first, that membranous rhinitis, as maintained by Lack, is specially prone to produce a similar disease in others, as indicated by the occurrence of three cases in one class; and secondly, that either membranous rhinitis may give rise to diphtheria or else *vice versâ*. The first conclusion is somewhat strengthened by the negative evidence resulting from the examination, at about the same date, of all children in the infants' department of another school. The children were examined especially for the presence of membranous rhinitis, and no case was found, so that three cases occurring in a single class of a department may be considered as an unusually large proportion.

Bacteriological Diagnosis of Three Cases of Membranous Rhinitis Admitted to the Brighton Fever Hospital.

It may be well, before giving details of the three cases under review, to summarise their bacteriological diagnosis.

Cultures were made on blood serum and pure sub-cultures obtained on the same medium from (*a*) F's nose, (*b*) M's nose, (*c*) M's whitlow, (*d*) L's nose, (*e*) L's left ear (otorrhœa). For each of these five subcultures the following facts held good:—

1. *Cultural characters.*—(*α*) The growths on all the ordinary solid media were those characteristic of the diphtheria bacillus.

(*β*) In broth the growth was very scanty, but on subculture growth was better. The broth remained clear, and a fine deposit was formed.

(*γ*) Acid was not at first obtained with litmus glucose broth. This was due, however, to difficult growth in broth. After subculture in broth, as suggested by Graham Smith,[12] an acid reaction was readily obtained.

(*δ*) Indol (without addition of nitrite) was obtained in peptone water after incubation for a week at 37° C.

2. *Morphology and staining.*—A Gram-positive beaded bacillus of the long variety, with clubbed ends and polar staining, showing typical involution forms in 24–48 hours, and staining deeply with methylene blue.

3. *Virulence.*—The virulence was kindly tested by Dr. Arthur Eastwood, who reports that "all the five cultures are of high virulence towards guinea-pigs, death being in each case produced in from 24 to 30 hours with a loopful of culture weighing about 3½ milligrammes."

Vaccine Treatment.

Few cases are recorded of vaccine treatment in diphtheritic infections. Allen,[13] Graham Smith,[12] Lack,[14] StClair Thomson,[15] and Clifford Allbutt[3] do not mention it in discussing the treatment of membranous rhinitis; nor was the method suggested in a recent discussion[16] on nasal diphtheria at a meeting of the New York Academy of Medicine at Philadelphia.

Petruschky[17] tried autogenous vaccines of diphtheria bacilli in 6 cases of chronic diphtheritic infection of the fauces with successful results, in 4 of the cases after one or two doses, in the other 2 after repeated injections extending over many months. The vaccine used was an emulsion of the bacilli in sterile saline (1 in 100), and the doses were from 0·1 to 0·5 c.c., given subcutaneously. More recently Smith[18] had a successful result after giving two doses of an autogenous vaccine to a chronic diphtheria carrier whose fauces had been positive for 22 weeks. Here a combined diphtheria and staphylococcus vaccine was given, the first dose of diphtheria bacilli being 6,000,000 and the second 8,000,000.

Watson Williams[19] and Bosanquet and Eyre[20] mention vaccine treatment in persistent infection of the throat and nose, but do not give instances. The latter recommend doses of 5 to 10 millions at intervals of five to seven days, and state that the bacilli disappear after one or two doses. Wright[21] considers that vaccine treatment would probably be beneficial. Goodall has used triturated diphtheria bacilli with success (quoted by Hewlett[22]).

The three cases of membranous rhinitis received into the Brighton Fever Hospital each underwent a course of treatment with an autogenous vaccine of diphtheria bacilli.

Preparation of vaccine.—The patient's own organism was obtained in a pure state by successive subcultures on blood serum. The pure culture was incubated at 37° C. for 48 hours, and then emulsified in sterile normal saline. After thorough shaking the emulsion was tested against normal human blood to determine its concentration. Counting was found to be unusually difficult, as it was at times very hard to distinguish the round and irregularly globoid involution forms from blood platelets. The use of a Thoma-Zeiss pipette and slide would doubtless have given more accurate accounts. After the count the emulsion was heated to 60° C. for half an hour, and appropriate amounts withdrawn and injected into rubber-capped bottles containing 0·5 per cent. phenol.

Doses were given usually at intervals of five to seven days; but owing to unavoidable delay in making up further doses of vaccine it was at times impossible to adhere to this rule strictly. Neither general reaction nor reaction at the site of inoculation, except for occasional very slight redness, followed any one of the doses. Throughout the vaccine course all three cases had the nose syringed twice a day with a dilute alkaline solution. This was omitted for 24 hours before the taking of swabs.

CASE 1.—F, a girl, aged 5 years. Admitted Oct. 6th, 1911.

History.—No history of onset obtainable.

On admission. A rosy-cheeked girl; general health good; child in high spirits. Grey membrane lining both nasal cavities, seen only after the superficial secretion had been wiped away. The nose bled readily when a swab was taken. Nasal discharge thick, yellow, and very profuse. Tonsils enlarged and adenoids in pharynx, which showed no recent signs of inflammation. Nasal swab positive, the organism being highly virulent to guinea-pigs. Throat swab negative.

For one month plugging of nostrils with cotton-wool soaked in diphtheria antitoxin was tried, together with alkaline nasal douches. There was, however, no obvious diminution in membrane or rhinorrhœa, and both nostrils still gave an almost pure culture of diphtheria bacilli on blood serum.

Vaccine treatment.—A vaccine was prepared from a pure diphtheria culture from the nose and given as follows: Nov. 9th, 5 millions (5 m.); Nov. 15th, 10 m.; Nov. 20th, 40 m.; Nov. 27th, 80 m.; Dec. 2nd, 100 m.; Dec. 9th, 200 m.; Dec. 20th, 400 m.

The first dose had no perceptible effect. From the second dose onwards the membrane and the rhinorrhœa diminished. No membrane was seen after the third dose, and after the fifth dose the nasal discharge had almost disappeared. The nose was still positive after the third dose, but became negative after the fourth, and remained negative for 19 days, during which interval six swabs were examined carefully. For the last few days of this interval glairy mucus began to accumulate in the nose, the mucous membrane over the inferior turbinate bones looked rather red, and mucus was seen in the pharynx. At the same time, on Dec. 19th, the nasal swab again contained diphtheria bacilli in small numbers. No membrane was seen in the nose. The nose still remained positive after a further final dose of 400 millions.

This result suggests that an autogenous vaccine has a rapid action in the removal of adherent membrane and in lessening the nasal secretion which accompanies it. But since at the onset of a mild catarrh of the naso-pharynx the bacilli reappeared in small numbers in the nose and were unaffected by a further large dose of vaccine, it would seem that the

latter loses its potency when the bacilli are no longer lodged in close vascular relation with the mucous membrane, but are present chiefly in the free mucous secretion. This loss of potency is perhaps only to be expected, seeing that the chief paths by which antibodies can reach the bacilli have been largely obliterated by the disappearance of the membrane with its vascular and lymphatic connexions.

It is also possible that the diphtheria bacilli found during the catarrh were not descendants of the original inhabitants of the nose, but a fresh strain derived from some other patient in the ward. Such cases of bacterial cross infection occur occasionally in diphtheria wards. A patient who on admission has a negative nose swab may after weeks give a positive result. This may occur also in non-diphtheritic cases nursed in a diphtheria ward, in whom there is no possibility of the bacilli having spread to the nose direct from the patient's own throat. Had such infection *ab extra* happened in the patient in question it might offer another explanation of the inefficacy of the vaccine at this stage, since the vaccine would no longer be autogenous to the fresh infection. That cross-infection occurred in this case can, however, only be a surmise, and perhaps an improbable one.

CASE 2.—M, a boy aged 5 years. Admitted Oct. 24th.

History.—"Profuse running at the nose for some weeks before admission."

On admission.—An anæmic child, with large tonsils and an adenoid facies. No signs of recent inflammation in the fauces. Profuse yellowish nasal discharge, excoriating the angles of the nostrils. On wiping away this discharge definite membrane could be seen lining the outer walls of the nasal cavity. The nasal mucous membrane bled very readily on being touched. The face was dotted with small superficial sores. The throat swab was negative, the nose swab positive, giving almost a pure culture of virulent diphtheria bacilli. Two days after admission a whitlow developed which on incision gave a nearly pure culture of virulent diphtheria bacilli.

Vaccine treatment.—The organism from the whitlow was used for preparing a vaccine, as it happened to give a pure culture readily. It was judged that the whitlow was due to direct infection from the nose, since the boy was in the habit of biting his nails, and his fingers were rough and torn, giving abundant places of lodgment for infected nasal discharge.

The doses given were as follows: Nov. 3rd, 5 millions (5 m.); Nov. 9th, 10 m.; Nov. 15th, 20 m.; Nov. 27th, 50 m.; Dec. 2nd, 100 m.; Dec. 10th, 200 m.; and Dec. 21st, 400 m.

The whitlow was still discharging at the time of the first dose. On the day after the first injection pus reaccumulated in the whitlow, which, however, healed extremely quickly on removal of the nail. On the day following the third injection a second whitlow appeared on another finger, yielding, as in the first instance, diphtheria bacilli. This also healed in the course of a day or two after incision. From the second dose onwards the membrane and the rhinorrhœa diminished, until by the beginning of December the nose was almost dry, and no membrane could be seen. The nasal swab was negative after the third injection. From Nov. 18th to Dec. 16th seven consecutive nasal swabs were negative. The nose then became rather blocked again for a few days and the swab showed diphtheria bacilli in small numbers. These were not abolished by a further dose of 400 millions. No membrane could be seen at this stage.

This case suggests the same conclusions as were advanced in regard to Case 1. It also seems to indicate that an autogenous vaccine is of value in curing diphtheritic whitlows. It will be remembered that the vaccine used in this case was prepared from a whitlow.

CASE 3.—L, a boy aged 5 years. Admitted Oct. 24th.

History.—Sore-throat three days before admission.

On admission.—Child anæmic, adenoid facies very marked. Tonsils rather large, no exudate. Very profuse thick nasal discharge, hiding a thin membrane lining the outer walls of each nostril. Profuse left otorrhœa.

Diphtheria bacilli were grown from the throat swab; from the nose swab in almost pure culture; and from the ear discharge also in great profusion. Cultures from the nose and from the left ear were proved to be highly virulent to guinea-pigs.

Vaccine Treatment.—A vaccine was prepared from the nose. Doses were given as follows:—Nov. 9th, 5 millions (5 m.); Nov. 15th, 10 m.; Nov. 20th, 40 m.; Nov. 27th, 80 m.; Dec. 2nd, 100 m.; Dec. 15th, 200 m.; Dec. 21st, 400 m.

Two days after the first dose the nose became decidedly clearer and the membrane less obvious. Two days after the second dose the otorrhœa was much diminished, while the nose continued to clear. Three days after the third dose the otorrhœa ceased, and though a few diphtheria bacilli were still present in the nasal swab the nose seemed quite clean. The nose continued positive throughout, though to a slight degree, up to and after the final dose. On Dec. 12th, at which time the boy had had no dose for ten days, he had a febrile attack with right earache, followed rapidly by profuse right otorrhœa, then by nasal discharge, then by left otorrhœa. No membrane could be seen in the nose. Diphtheria bacilli in small numbers were present in the nose and in the discharge from each ear. This nasal discharge and otorrhœa seemed quite unaffected by a final large dose of 400 millions.

It should be mentioned that it was found impracticable to continue the vaccine treatment after Dec. 21st, at which time each case had received a dose of 400 millions.

The last case is of interest in showing that though the membrane and the original rhinorrhœa and otorrhœa cleared up rapidly under vaccine treatment, nevertheless the nose remained positive. But whereas the swabs before treatment gave almost pure cultures, after treatment the diphtheria bacilli were scanty, requiring for their detection careful search through several fields of a microscope. It seemed probable that the second attack of rhinorrhœa and otorrhœa was due to some other organism, and that the diphtheria bacilli found were merely casual guests rather than the cause of the condition. Since the nasal mucous membrane is apt to be unhealthy and liable to recurrent infection in membranous rhinitis, a combination of diphtheritic with autogenous staphylococcal or streptococcal vaccine from the nose might be of value towards the end of the course in preventing relapse. This would, at any rate, seem a reasonable procedure if Meyer[6] is correct in believing membranous rhinitis to be grafted on to a previous staphylococcal or streptococcal infection of the nose.

One other point needs mention. The disappearance of membrane following treatment by vaccine might conceivably be due only to the natural tendency of the disease to recovery. But the definite diminution in secretion, after one dose in one case, and after two doses in the other two, seems to indicate that the vaccine was a real factor in the improvement. One case also (F) had had one month's previous treatment without any change, and the improvement followed shortly after vaccine treatment was begun.

General Conclusions.

The facts indicated above seem to warrant the following conclusions:—

1. Membranous rhinitis can readily produce similar disease in others.

2. The connexion between membranous rhinitis and diphtheria in the school outbreak detailed above was so intimate as to make it almost certain that there was a causal relation between them.

3. It is a point of practical importance that the comparatively frequent occurrence and great infectivity of membranous rhinitis should be recognised widely. Missed cases of the disease would readily account for a not inconsiderable proportion of school diphtheria.

4. An autogenous vaccine seems to be of definite value in removing membrane, getting rid of nasal discharge, and hence greatly reducing the infectivity of membranous rhinitis. But the vaccine does not appear to be capable of completing the work of elimination after the membrane has gone—i.e., after the vascular and lymphatic channels by which antibodies can reach the bacilli have been removed.

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SCHOOL CLOSURE IN MEASLES.

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To those working on the preventive side of medicine school closure as a means of controlling epidemics is always an interesting question. Opinions differ as to its efficacy even amongst medical men, and the present article is an account of how it worked in an epidemic of measles. Laymen, especially members of education committees, often meet our arguments in favour of school closure with the retort that the children are just as liable to be infected in their home life as they are to be infected in school. The

intercourse in the home, the street, the Sunday school, and places of amusement plays, of course, its part in the spread of infectious disease, but I hope to show that in the epidemic which is here considered it was a minor part.

During the spring and early summer of last year we had to control an extensive epidemic of measles, which affected 15 out of 21 of our infant schools. There were 858 children attacked, and each of the cases has been investigated for the purpose of a special report to be included in the annual report for 1911. I have analysed the figures of incidence in each school in the hope that other school medical officers will follow my example and give the profession figures of proof of the efficacy of school closure. The accompanying table shows the departments affected, the

Table showing the Influence of School Closure in an Epidemic of Measles.

Name of school.	Extent of closure.	Average attendance.	No. of susceptible children.	No. of cases before closure.	No. of cases within 14 days after.	No. of cases more than 14 days after.
Westoe	All.	480	240	77	27	17
Ocean Road ...	,,	380	190	51	16	7
St. Hilda's ...	,,	170	80	19	1	2
St. Stephen's ...	,,	175	80	18	0	5
Gilbert Street	,,	400	200	71	28	20
Barnes	,,	440	210	37	8	0
Baring Street...	,,	450	220	49	16	1
Mortimer Road	,,	520	250	76	18	3
W. Harton ...	,,	200	100	28	6	1
Cone Street ...	,,	310	150	22	1	8
H. Trinity ...	,,	345	170	51	10	6
Laygate Lane...	Classes 5, 7, and 8.	150	70	21	0	2
St. Bede's... ...	Classes 6 and 7.	100	40	28	1	2
Stanhope Road	Class N 2.	50	20	22	0	0
Mowbray	Classes 7, 8, 9, 9A, and 10.	300	160	48	8	1
Total... ...	—	4470	2180	618	140	75

extent to which they were closed, the rough average attendance of the department, the number of children who had not already had measles (from figures obtained during three years of medical inspection), the number of cases occurring before closure, the number occurring within 14 days of closure, and the number which occurred more than 14 days after the closure.

We must take into account, as I have already said, both the infection which may be present in the home life and that in the school life. If we eliminate one of these sources of infection we can then ascertain the part played by the other in spreading the disease, providing that we have remaining, after one source has ceased to act, a large number of susceptible children. During the period that a child is at school both sources of infection are in operation, and for a period of 14 days after the child is excluded it is still possible that the child was infected at school and has been carrying the undeveloped disease in its system. After the maximum period of incubation has expired all cases occurring amongst the children must be the result of infection in the home life.

There were in this epidemic 4470 children exposed to infection, and of these 2180 were susceptible to measles. Of these, 853 children were attacked, 638 cases occurring during the time that the children were at school and 140 during a period of 14 days after the school was closed; that is, 778 cases which might have been infected either at school or in the home life. Thus, at the time of the removal of the possibility of the infection at school there were still more than 1400 children who were susceptible to measles. Only 75 of these children actually contracted the disease. This shows, I think, the important part played by the school in the spread of the infection of measles and the value of school closure in this epidemic as a preventive measure.

South Shields.

AN OPERATION FOR HÆMORRHOIDS AND CHRONIC CONSTIPATION.

BY CHARLES AUBREY BUCKLIN, M.A., M.D.

THIS operation, which is described below as it has been performed, is designed for the relief of hæmorrhoids and chronic constipation when these are not caused by obstructive inflammatory changes or by neoplasms above in the intestinal tract.

The first instrument necessary is a bi-valve vaginal speculum which can be so forcibly distended with a screw mechanism that the grasping of the distal ends of the blades offers no serious resistance to the distending apparatus. The stem of the screw device of this speculum should be marked with a file so as to indicate when its blades are distended until they measure six inches about their distal ends. The size of six inches in circumference will be found to be a safe and sufficient distension of the sphincters of the anus for all well-developed persons over 15 years of age who are suffering from these diseases. The surfaces of the speculum blades must be smoothly finished and without any openings through them. The instrument should be disinfected and then allowed to become thoroughly cool, after which the blades should be immersed in melted beef or mutton tallow which has been previously heated sufficiently to sterilise it, and then allowed to cool down to the lowest temperature at which it will remain fluid before the blades of the speculum are immersed. The blades are thus covered with a coating of tallow. It has been clinically demonstrated that this method of greasing the blades prevents any accidental complication resulting from abrasions of the mucous membrane which have been caused by stretching the sphincters of the anus so extensively with instruments.

The patient having been prepared for this operation by taking upon retiring on the previous night the necessary cathartic is anæsthetised to the state of muscular relaxation. The greased blades of the speculum are instantly introduced just through both sphincters sufficiently to insure that they are stretched when the blades are expanded. Five minutes are taken distending the blades to the proper size. The screw is now reversed one turn which causes the blades to relax from their strong contact with the mucous membrane of the anus sufficiently to allow the speculum to be slowly rotated and manipulated for the purpose of exposing the lining of this opening for inspection. Hard stumps resulting from previous hæmorrhoids are removed with the forceps and a knife. Other forms of this disease are treated with the forceps and a No. 1 catgut ligature, after which the hæmorrhoids are cut off outside of the ligatures; or when the swellings are too numerous they may be treated with hypodermic injections of 30 per cent. of carbolic acid in alcohol. The slits made in the mucous membrane by operating are better closed by stitches of No. 1 catgut for the purpose of avoiding complications.

No further explanation of the methods of operating is necessary. The patient should be confined in bed for five days after the operation. A bandage has not been found necessary in cases that have been operated. The bowels should be locked up by giving a dose of one grain of opium morning and evening. The giving of opium should be commenced as soon as the patient is able to take the medicine after the operation. On the evening of the fifth day the opium should be discontinued and the patient should take a similar dose of the same cathartic medicine as was used at the commencement of this treatment. On the sixth day the patient can be discharged entirely free from any danger of the hæmorrhoids returning. When the trouble is chronic constipation it will rapidly disappear.

These results are attributable to the reduced action produced in the sphincters by their extensive stretching. The contractions are permanently reduced and the spasms with which the sphincters were constantly affected in both of these diseases are removed. Without having had clinical experience of these results no one can appreciate the physiological relief which attends stretching of contracted sphincters in diseases of this class.

New York.

Clinical Notes:

MEDICAL, SURGICAL, OBSTETRICAL, AND THERAPEUTICAL.

THE TREATMENT OF PULMONARY TUBERCULOSIS BY INTRAVENOUS INJECTION OF CHINOSOL WITH FORMALDEHYDE.

BY JOHN MCELROY, L.R.C.P. & S. EDIN., L.F.P.S. GLASG.

IN THE LANCET of Nov. 12th, 1910, I published the effects of the above treatment in three cases of pulmonary tuberculosis. Since then I have had 22 cases under my care, and I think the publication of my results may prove interesting. It is quite possible that these results would have been even more successful had my patients continued to follow out my directions, but so-called "friendly advice" in several instances intervened and prevented my doing as much for them as I could have done.

Regarding the three cases already published, Case 1 is still at his daily work and feeling as well as ever he did. Case 2 decided to try a sanatorium, and I lost trace of him, although in an indirect way I hear he has not made any more progress. Case 3 took a relapse and put himself under other medical care. Of the cases unpublished:—

CASE 4.—Male, aged 44. Both lungs affected; all right lung and upper left lobe. Abundant coarse moist râles over upper right lobe front and back with fine râles over all affected region. Temperature; sweats; profuse expectoration laden with tubercle bacilli. Pretty severe hæmoptysis on several occasions. Pleurisy. Loss in weight over a stone. Regular medical attendant's prognosis, "hopeless." Present condition: Adventitious sounds absent. Appetite good. Sweats absent; temperature normal. Cough and expectoration practically absent. Gain in weight 17¾ lb. Back at his own work for over three months.

CASE 5.—Female, aged 26. Had been in sanatorium for six months; no benefit derived. Upper and middle lobes of right and upper portion of upper left lobe affected. Dry râles over all affected region. Cough; sputum; tubercle bacilli present. Good deal of weakness with shortness of breath. Not much loss of weight. Present condition: complete absence of adventitious sounds; quite strong again. Gain in weight 6¾ lb. Sputum negative. Back to work.

CASE 6.—Male, aged 26. Ill two years. Hæmoptysis very often. Temperature; sweats; much shortness of breath; sputum positive. No appetite. Very weak. Upper and middle lobes of right lung affected. Dry râles. Slight loss in weight. Present condition: Temperature normal; sweats and hæmoptysis stopped. Appetite good. Breathing much better; feeling stronger. Adventitious sounds gone. Cough and expectoration almost absent. Doing light work.

CASE 7.—Female, aged 16. Ill for a year. Upper lobes right and left affected. Temperature; cough; expectoration; sputum positive. Never menstruated. Slight loss in weight. Regular medical attendant's prognosis, "hopeless." Present condition: Temperature normal; cough and expectoration absent. Last four months menstruated regularly. Gain in weight 6 lb. Adventitious sounds all absent. Back to usual occupation.

CASE 8.—Male, aged 36. Upper and middle right and upper left lobe affected. Temperature; sweats; hæmoptysis; shortness of breath; weak. Loss in weight. Cough and profuse expectoration; sputum positive. Regular medical attendant's prognosis, "hopeless." Present condition: Temperature normal; sweats stopped; no hæmoptysis. Breathing normal; weight normal. Cough and expectoration practically absent. Adventitious sounds disappeared. Able for work.

These cases all seem as if the disease has been arrested and point to the great benefit—to some patients—of the treatment. Of my 17 other cases 5 are improving, but it is too early yet to say how long this will continue as they are still under treatment. With regard to phthisis, seemingly more than to any other disease, any new treatment is criticised from the standpoint of a specific, but can we really say that there is a specific for any disease? I do not think so. Naturally one agrees we have heard of many cures for pulmonary tuberculosis, but they have been, in the majority of cases, unable to stand the test of time. If pulmonary tuberculosis is due to a specific microbe, why does the one treatment not have the same effect on all? This question opens up the query, Is tuberculosis due to a particular microbe? For a considerable period I have held to the opinion that while tuberculosis may be due to a particular micro-organism, yet there must of necessity be different species or varieties of such, else why do we get patients in whom the lung lesion is comparatively small having a most disproportionate systemic infection, resulting in a condition upon which no treatment seems to have any effect, and other cases in which the lung lesion is large, with a small systemic infection and most amenable to treatment? They cannot all be explained by the principle of mixed infection. No; the probability is that when our bacteriological knowledge is improved we shall find there are, as I have already said, various species of the tubercle bacillus, some of the species being more virulent than others. I am pleased to see from one of the journals that Mr. J. Penn Milton is working at a similar theory on practical lines, and I await with interest the publication of his results in this direction.

To enable whichever treatment we select to do the most good for the patient early diagnosis of the disease is of the utmost importance, and the leading specialists in tuberculosis will, I am sure, agree that "the good old clinic with its minute auscultation is the best means to make a good diagnosis." Tuberculin tests are of the greatest service in assisting a decision in a doubtful case, but X ray photography is of practically no value for that purpose, as consolidation of tissue must have taken place before it will reveal anything.

Belfast.

NOTE ON AN OPERATION FOR PHLEBITIS WITH THROMBOSIS.

BY SKENE KEITH, M.B. EDIN., F.R.C.S. EDIN.

Dr. George E. Keith asked me to see one of his midwifery nurses who was laid up by thrombosis with phlebitis in the superficial veins of the right leg, and it had occurred to him that it might be a good plan to cut out the clots and the inflamed parts of the veins. The history of the illness was that the patient (about 50 years of age) had a recent attack of influenza, sufficiently severe to keep her in bed. Ten days after the onset of the illness she complained of pain in the leg, and on examination Dr. Keith felt two large clots—one in the vein above the knee and the other in front of the middle of the leg. The skin was red and swollen, but when I saw her, a week after the clots had been first discovered, the redness had lessened somewhat. The clots were nearly an inch each in length and there was a third small one near the ankle. The veins of the leg were slightly varicose, and there was a very small amount of œdema.

I have not noticed if veins have been removed in this condition, and the operation does not appear to be mentioned in the latest surgical works, but it seemed to me a most reasonable suggestion as it was important that the nurse should not be laid up in bed for an indefinite number of weeks, and the risk of removing a few inches of vein is certainly not greater than allowing a clot to absorb with the accompanying risk of separation. The only point which is doubtful to me is whether the saphenous vein should be tied first. In a markedly varicose condition of the veins I would certainly do so, but in an ordinary case it hardly seems necessary, provided that the vein is exposed and tied well above the clot.

In the case referred to there was no difficulty in the operation, and the veins were much thickened where the clots were situated. Immediately on the proximal side of the clots the veins were normal, thickening towards the distal end and continuing in this state for some distance beyond. As very slight pressure caused the clot to slip out of the vein, it showed how carefully such conditions must be handled. The patient was able to walk ten days after the operation.

This operation seems to be such a useful one that, even if the idea is not original, it is well worth drawing attention to it.

Upper Berkeley-street, W.

Medical Societies.

OPHTHALMOLOGICAL SOCIETY.

Hereditary Ophthalmoplegia in Five Generations.—Crystal-like Bodies of Radiate Structure in the Lens.—Exhibition of Cases and Specimens.

A MEETING of this society was held on Jan. 25th, Mr. J. B. LAWFORD, the President, being in the chair. It was announced that the society had accepted the invitation of the Dublin members to hold the May meeting on the 11th of that month in Dublin.

Mr. A. A. BRADBURNE read a paper entitled "Hereditary Ophthalmoplegia in Five Generations." In this family there was a condition of ptosis accompanied by an almost complete loss of the ocular movements, which had been present in five generations. After enumerating the numbers affected and briefly describing the condition in each, he proceeded to consider the various types of this rare affection. He classed anomalies of congenital ocular immobility into three divisions: first and most common, those in which only ptosis was present; secondly, when this was combined with epicanthus; and thirdly, a type in which ptosis might or might not be present, but in which the ocular movements were very defective or altogether wanting. This latter type embraced three sub-divisions: (*a*) ptosis associated with defect of the superior rectus; (*b*) more extensive involvement of the eye muscles with or without ptosis, the condition being due to some nerve lesion; and (*c*) this type included the same kind of anomalies, but the condition was due to entire absence of, or very defective development of, the muscles. His own case came under this category. Mr. Bradburne pointed out that in two of the younger members a certain return of the movements had occurred, and suggested how this might have come about. He showed that in the shark the ocular muscles arose from three centres—one for the superior obliques, one for the abductors, and the remaining four muscles arose in pairs from a third. These paired muscles were the superior with the internal rectus and the inferior rectus with the inferior oblique. In all the members of this family the superior obliques were probably present, and hence if any further movements became possible one would expect their appearance to follow somewhat the lines as seen in the shark. In one of the members of the family it had done so, as one eye was able to move from a point straight in front outwards, thus seemingly pointing to a development of the second centre. But that did not follow in another case in which both eyes possessed full lateral motion. By analogy one would expect to find development of motion in the upward direction, but such was not present. Hence the human development was from a different centre to that of the shark, or another factor was present in the case. As the patient had ptosis, motion in an upward direction would not be of much practical use, hence it seemed as if the visual act had had something to do with the "evolution." This seemed probable, as in the same case, to prevent diplopia, the visual act had produced a convergent squint. Finally, he asked if the argument could be logically reversed and the condition of muscle palsy attributed to a long-continued non-use of the eyes in some ancestor afflicted with ptosis.—The paper was discussed by Mr. N. BISHOP HARMAN, who pointed out that in the sunfish each of the recti, except the rectus externus, sent off a separate slip which went to the circular fold round the eye, and was capable of retracting a fold from the cornea, and one saw the original development of the levator. The idea of an arrest of development running through a family was easier of acceptance than the more difficult theory which Mr. Bradburne had brought forward.—Mr. W. M. BEAUMONT (Bath) suggested the condition might not be so much a pathological one as a tendency in this family to a throw-back to a primeval condition antecedent to the development of the oculo-motor muscles.

Mr. GEORGE COATS read a paper entitled "On Crystal-like Bodies of Radiate Structure in the Lens." He said they were found in a hypermature cataract in a woman, aged 69, and had not been seen clinically. In the lens nucleus, which had undergone but little degeneration, round and oval bodies, measuring from 0·035 to 0·160 mm., were found. They had a refractile crystalloid appearance and were marked by numerous fine lines converging towards an axial linear streak or spot. There was frequently a tendency to cleavage along these lines, so that the body was split up into a number of radially disposed pyramidal sectors, not unlike the pyramids of the kidney. In the larger crystals there was a central tuberculated mass of mineral hardness, the structure resembling that of a rubber-cored golf ball. Usually the adjacent lens fibres were arranged round the crystals to form a kind of capsule. Only two similar observations were on record, in one of which the bodies were seen clinically as globular beads with a silky or pearly sheen. In all these cases the lens was cataractous; in two the opacity was senile, in one lamellar, the patient being a child of 6. In all the crystals were confined to the more central layers of the lens. As to the nature of the crystals, the scarcity of material made it impossible to carry out extensive histo-chemical researches, but they showed considerable structural resemblance to leucin, a diagnosis which was sufficiently probable, since the crystals occurred in cataractous lenses, and leucin is a product of proteid disintegration. They occurred, however, in the least degenerate part of the lens. Hydrochloric acid produced no effervescence. Dr. W. H. Willcox had kindly examined the specimens, and reported that the appearance of the bodies was "similar to that which leucin takes when it has been subjected to dehydrating processes."—The PRESIDENT asked whether Mr. Coats found these bodies in the extracted lens—i.e., whether the eye had been removed.—Dr. J. BURDON-COOPER (Bath) asked if Mr. Coats had ever found tyrosin in the lens. He had himself discovered that substance in the aqueous after needling for lamellar cataract. Professor W. D. Halliburton, of King's College, confirmed that it was tyrosin. In wondering how tyrosin could have got there, it occurred to him (the speaker) that possibly it was the result of hydrolysis of the lens, and he therefore sent for a pig's eye at the butcher's, and found the lens yielded almost pure tyrosin. The microscope gave the most delicate test for it. Tyrosin was fairly soluble in sulphuric acid. He had found the substance in the lens in all cases of cataract, and he was strongly of opinion that the change which took place in senile cataract was a hydrolysis of the lens.—Mr. COATS, in reply, said there was nothing in his sections which resembled tyrosin.

The following cases and card specimens were shown:—

Mr. A. C. ROPER: Melanotic Sarcoma of the Conjunctiva with Secondary Nodules in the Skin. There was no trace of anything in the fundus. He was advised radically to remove the whole of the orbital contents. The skin nodules were found not to be malignant.

Mr. COATS: (1) Concretions (Drusen) of the Papilla; and (2) Corpora Amylacea in the Retina.—Dr. E. FARQUHAR BUZZARD said the appearance was different from corpora amylacea in nerve tissue generally, as in this case there was a definite capsule.

Dr. RAYNER D. BATTEN: A Fixation Fork, designed for the insertion of sutures in the sclerotic in advancement operations. By its aid one could pick up exactly the amount required, and there was no danger of the needle being pushed in too deeply. He also showed a case of Central (Macular) Coloboma of the Choroid of unusual form, symmetrical in the two eyes.

Lieutenant-Colonel J. L. PISANI, I.M.S., showed a case, which was originally exhibited in 1880, with peculiar bodies on the iris after needling for lamellar cataract.—Mr. M. S. MAYOU thought the bodies might be due to implantation of the cells of the capsule on the iris.

Mr. R A. GREEVES: (1) A case of Metastatic Septic Choroido-retinitis; and (2) a case of Quinine Amblyopia.

Mr. COATS: A case of Tubercle of the Choroid in a Cat.—Mr. MAYOU related a case in a cat also, which bore out Mr. Coats's remark. In that case, however, there was a small nodule in the breast. He thought it was not likely for primary tubercle to start in a choroid without there being a lesion elsewhere in the body.

Mr. C. WRAY: (1) A case of Glaucoma; (2) a case of Keratitis Disciformis; and (3) a case of Exostosis of the Roof of the Orbit.

Mr. R. R. JAMES: A case of Hyaline Degeneration of the Disc.

Mr. C. A. HORSFORD: A case of Mal-Development of the Eyes in a child.

DEVON AND EXETER MEDICO-CHIRURGICAL SOCIETY.

Hydatidiform Mole.—Heath's New Treatment for Paracutic Deafness.

THE annual meeting of this society was held at the Royal Devon and Exeter Hospital on Jan. 12th, Dr. R. V. SOLLY, the President, being in the chair.

The honorary secretary's report for the past year having been read and adopted, the following officers were elected for 1912:—President, Dr. R. V. Solly; Vice-President, Dr. C. J. Vlieland; honorary secretary, Mr. G. L. Thornton; honorary treasurer, Mr. Ransom Pickard.

Mr. G. L. THORNTON read notes on a case of Hydatidiform Mole. The patient, a married woman, aged 36 years, was first seen by Mr. Thornton in response to an urgent summons on June 28th, 1911. On arrival the patient was found to be lying on a sofa downstairs blanched and collapsed. There was every evidence of severe flooding not yet arrested. A cursory examination showed that the abdomen was enlarged to above the umbilicus with a (?) pregnant uterus. In addition there was massive soft œdema from the waist downwards. The condition being one of extreme gravity, the vagina was at once plugged with strips of gauze wrung out in 1-4000 biniodide of mercury, and ergotinine cit. gr. 1/100 was injected intramuscularly. The patient was then removed in an improvised ambulance to the Exmouth Cottage Hospital. The notes on admission showed nothing of note in the family history, whereas the patient herself had never had cause to consult a medical man previously. She was married at the age of 25 years. There were six children born at full term and all living, and there had been no miscarriages; all deliveries had been easy and natural. Catamenia had begun when the patient was 14 and had been regular as a rule. The bowels acted regularly, and as regards alcohol she was a total abstainer. The last child had been born on Oct. 2nd, 1909. She had nursed until May, 1910. Catamenia had returned again in June, 1910, and remained regular until April, 1911, when she menstruated early in the month. Although occupying the usual period with her of seven days the menses were scanty. About the middle of May there had been a sudden severe flooding, and since then constant oozing with actual flooding on some days and a mere show on others. She had noticed no clots and no material other than blood. During the first week in May (and prior to the first flooding) she felt sick and vomited after food. This sickness was accompanied with frontal headache which had since remained constant. The sight had remained good. About three weeks before admission she first noticed swelling of both feet and shortly afterwards of the legs and thighs. For about a fortnight she had noticed that the abdomen had been increasing in size. She had felt no movements and did not consider that she could be pregnant. There had been no difficulty in micturition and the bowels had remained regular. On June 28th (the day of admission) a severe flooding occurred when she was at work in the kitchen. She became faint and collapsed, in which condition Mr. Thornton shortly found her. "The present condition on admission" noted that she was a very pale woman, well nourished, with slight puffiness of the eyelids. There was dyspnœa, but no thorough examination of the lungs could be made (subsequently œdema of both bases was noted). Save for a low-pitched systolic murmur over the præcordium and a banging first sound, there was nothing to report as regards the heart. The pulse, which was very rapid when first called to her, had steadied down to 80 two hours after the ergot injection. The abdomen was distended from one inch above the umbilicus downwards. Both flanks were resonant. The swelling was of the size of a pregnant uterus at the sixth month, and could be felt to harden on palpation. Occasionally it gave a somewhat doughy impression. Low down on the right there was exquisite tenderness to even superficial palpation. Per vaginam the cervix felt like that of the second or third month. The os externum was patulous to the tip of the index finger. There was no *ballottement*, and the examining finger encountered everywhere the same doughy consistence as that noted per abdomen. A sample of urine was found to be of specific gravity 1016 and to show "solid" albumin on boiling. Plentiful hyaline, granular, and a few epithelial and blood casts were noted in the centrifugalised deposit. Hydatidiform or carneous mole was considered from the first to be the most probable diagnosis, and, indeed, no likely alternative seemed to be forthcoming. It was decided to endeavour to improve the general condition and to avoid operative interference for the present. Biniodide douches were ordered and a mixture containing digitalis, citrate of potash, and liquor ammon. acetatis was given, and the patient was placed on a milk diet. There was no further hæmorrhage during the first week following admission, and the general condition improved as regards lessening of œdema and decrease in albumin. The quantity of urine barely yet, however, exceeded a pint. On July 4th, following on the advice of Mr. A. C. Roper (consulting surgeon to the hospital), who had kindly taken an interest in the case throughout, ergot was added to the mixture and a few pains followed the same night. Labour pains did not, however, set in fully until the early hours of July 6th, when Mr. Thornton was called to her at about 3 A.M. The mole had then been rapidly expelled in three portions with considerable hæmorrhage, but after expression of some clots and a small remaining portion the bleeding was soon arrested and a firm contraction of the uterus was obtained. The condition was an anxious one for about 24 hours, and hypodermics of strychnia were given eight-hourly. The subsequent history was uneventful, œdema and albuminuria both clearing up gradually and the quantity of urine passed increasing to two pints and upwards within three days. The temperature, which had been of an intermittent type from the time of admission, did not reach normal until the first week in August. One sudden rise to 104·8° was noted on July 20th and was difficult to account for. The patient was discharged from hospital on August 15th, and subsequently was observed as an out-patient under Mr. Thornton's care at the Exmouth Dispensary. In September no traces of renal disease could be found, but the uterus had again cropped up above the brim. To exclude possibility of chorionic epithelioma the patient was now sent to the Samaritan Free Hospital, London, under the care of Dr. G. F. Darwall Smith, who curetted and received a favourable report from the pathologist. The woman was at the present time menstruating regularly and in apparent sound health. The points about the case were: (1) The rarity of hydatidiform mole—1 in 2000 deliveries, according to Galabin and Blacker; and (2) the obscure causation. The history of this case suggested the nephritis being consequent upon the establishment of a molar pregnancy, and the same arguments could be advanced for the renal condition as were upheld in cases of puerperal eclampsia. If the placental auto-intoxication theory held good in eclampsia, where most often nothing abnormal could be found, how much more easy would be its explanation in cases of molar pregnancy and the extensive chorionic degeneration concerned with it. The irregular chart again suggested an infection. As regarded treatment, there was nothing to regret, and the only comment to make was the immediate response to ergot both as regards the initial hæmorrhage and the subsequent emptying of the womb. A careful subsequent examination by a skilled gynæcologist was suggested in a condition which, according to the text-books, is followed by chorion epithelioma in 60 per cent. of the recorded cases.—The PRESIDENT spoke of an allied condition to chorion epithelioma occurring in the testicle of a man. In his opinion he did not think that vesicular mole was as rare a disease as the text-books made it. He had come across three in his own experience.—Dr. J. D. HARRIS mentioned a case where a part only of the placenta was involved.—Mr. C. E. BELL supported the contention in the matter of rarity, and he did not agree in the figures given for the incidence of chorion epithelioma.—Mr. THORNTON replied.

Mr. ROBERT A. WORTHINGTON read a paper entitled "A Note on Mr. Heath's New Treatment for Paracutic Deafness." He briefly described the chief theories as to the cause of paracusis Willisii, and contrasted that of Heath with that of Politzer and with Gray's more philosophical development of Politzer's theory. He said that Mr. Heath appeared to consider the essential causes of paracutic deafness to be a loosened ossicular chain and a lowered tension in the labyrinthine fluid content, the latter being dependent on the imperfect action of the stapedius muscle induced by the former. He pointed out that the early onset of

paracusis in otosclerosis, a disease of definitely observed morbid anatomy, appeared to render the hypothesis of a loosened ossicular chain untenable. With regard to the tension of the labyrinthine fluids, the continuity of the latter with the cerebro-spinal fluid appeared to render it unlikely that any change in tension could be of more than momentary duration. On anatomical grounds, too, it seemed probable that the action of the stapedius was such as to tilt the stapes away from the oval window, which would tend to lower rather than raise labyrinthine tension. If the labyrinthine tension could be raised for an appreciable time by the movements of the stapes, then it would be by such an experiment as Cyelle's, and in this, as is well known, the perception of sound is diminished, not increased. Although he disagreed with Mr. Heath's theories the complexity of the subject was such that he felt that the treatment Mr. Heath had advocated might turn out to be of value on quite other theoretical grounds. He then described in detail two cases of paracusis with thin flaccid tympanic membranes which he had treated by painting with cantharidin solutions according to Mr. Heath's method. During the treatment the patients became very deaf indeed in the ear to which it was applied; at the same time, however, the tinnitus which had been a marked symptom disappeared. As the inflammatory processes were allowed to subside the hearing gradually returned, as far as the ordinary tests went, to exactly what it had been before. Both patients considered, however, that they heard better, and having lost their tinnitus were at first very pleased. Unfortunately, the tinnitus all returned again within a few weeks of ceasing treatment. Mr. Worthington was further of the opinion that the improvement in hearing was more imaginary than real, and due to the contrast with the high degree of deafness during treatment.—The PRESIDENT and Dr. HARRIS discussed the paper and Mr. WORTHINGTON replied.

Mr. G. A. THORNTON exhibited blood film stained to show crescents from a case of Malaria under his care.

NORTH OF ENGLAND OBSTETRICAL AND GYNÆCOLOGICAL SOCIETY.

Cæsarean Section.—Retroversion of the Uterus.

A MEETING of this society was held on Jan. 19th, Dr. A. DONALD (Manchester), Vice-President, being in the chair. Dr. Arnold W. W. Lea (Manchester) was elected President for the ensuing year.

Dr. A. STOOKES (Liverpool) related the details of two cases of Cæsarean Section. The first case was that of a woman, aged 30 years, who had had three normal labours and who gave no history of trouble in the present pregnancy. The patient was seen at 5 A.M. by two medical men, who found her with strong labour pains and the vagina blocked by a tumour, so they sent her to the maternity hospital. On admission it was found that an arm was presenting and that the vagina was blocked by a soft fibrous mass which passed within the cervix; no pedicle could be reached. The general condition of the patient was fairly good; she was pale and the pulse-rate was about 100. The abdomen was larger than usual, but not tender. Cæsarean section was done and a dead child was extracted weighing 6 lb. 6 oz. After removing the placenta and membranes the tumour was found to have an extensive attachment to the posterior wall of the uterus, so supravaginal hysterectomy was done. The patient died from shock eight hours later. In the second case the patient, who was 42 years of age, had had eight normal labours. She was vomiting incessantly and was constipated; the bowels had moved slightly two days previously. The abdomen was not enlarged more than a full-time pregnancy and there was no hyper-resonance. Operation was decided upon as it was thought that there must be intestinal obstruction. After a dead child weighing over 7 lb. had been removed the peritoneum was found to be salmon pink in colour and studded with small yellow spots. The whole of the small intestine was empty and collapsed. The large intestine was attached by a mesentery 7 in. in length, which allowed the caput cæcum to fall into the pelvis. It was thought by Dr. Stookes that this must have caused incomplete obstruction, and that the empty state of the bowels was due to the reversed peristalsis, but he now believed the explanation offered by Mr. A. N. Cuff to be the probable one—that the woman was suffering from acute pancreatitis. The patient recovered from the anæsthetic and said she was much relieved, but she died next day from exhaustion.

Miss M. H. F. IVENS (Liverpool) read a paper analysing 100 Consecutive Cases of Retroversion of the Uterus, treated by round ligament ventro-suspension (Gilliam's operation), in which the after-history had been ascertained in 93 cases. There had been no mortality; 93 had healed by primary union, and in one case only had relapse occurred owing to the tenuity of the ligaments. In 32 uncomplicated cases the results were most satisfactory, while in 11 associated with marked prolapse the uterus was held up well by the round ligaments, which showed extreme hypertrophy after operation. In 46 cases where adnexal disease was present good results were obtained in all but the gonorrhœal cases, where further inflammatory trouble took place in 11 instances, although the uterus maintained its position. In 3 cases out of 4 with uterine fibroids myomectomy, followed by Gilliam's operation, was successful; the fourth subsequently required hysterectomy for a submucous sessile tumour. In 20 instances pregnancy had since occurred. Of these, 11 had borne children with no difficulty, 6 were still pregnant, and 3 had had abortions. As no ill after-effects were present in the 93 cases followed up it was concluded that the operation was a safe and successful one when done under suitable conditions, and could be undertaken during the child-bearing period. From a careful consideration of the history and symptoms of the cases recorded it was also concluded that in the majority of instances even a simple retroversion of the uterus ultimately caused pathological changes in the pelvic organs, beginning with passive venous congestion, and that for this and other reasons therefore required treatment.

LIVERPOOL MEDICAL INSTITUTION.

Recurrence of Adenoids.—Tuning-fork Vibration and Auscultation.—Opening of Skull in Cases resembling those of Tumour of the Brain.

A MEETING of this society was held on Jan. 25th, Mr. ROBERT JONES, the President, being in the chair.

Mr. THOMAS GUTHRIE read a note on the Recurrence of Adenoids, in which he pointed out that recurrence was seen most commonly in children operated on under the age of four years, even when the operation had been as complete as possible. Recurrence was not frequent in those between four and seven years of age, and practically did not occur in patients over seven where the operation had been thorough. Mr. Guthrie showed a photograph of the naso-pharyngeal tonsil removed from a child of three and of the growth which recurred at the age of five. He pointed out that recurrence was favoured by attacks of the specific fevers, by congenital syphilis, and by anterior nasal obstruction from bony deformities, &c. He urged after-treatment of posterior nasal catarrh and attention to the general health conditions of the patients.

Dr. R. J. M. BUCHANAN read a note on, and demonstrated the method of, Tuning-fork Vibration and Auscultation. He used a fork of "A" pitch, which was struck, and the stem placed on the part to be examined; the stethoscope was applied, and the fork moved by small steps over the part. The sound vibrations varied with the nature of the part over which the fork was resting. Dr. Buchanan claimed for this method that it was possible to map out organs accurately, to differentiate solid from liquid, the colon from small intestine, the stomach from the colon. He could map out portions of consolidated lung and mediastinal tumour. In one case he had been able to make out alteration in the size of a kidney which had been verified by separation of urine and by the findings at the operation.

Dr. W. B. WARRINGTON read a paper on the Results of 17 cases in which the Skull had been Opened for Symptoms resembling those of Tumour of the Brain. The operations had been mainly done by Mr. Keith Monsarrat. Of 9 cases of cerebellar exploration death took place soon after operation in 5; in these the diagnosis was confirmed by post-mortem examination and in 2 by the findings at operation. In 4 cases the patients recovered; 3 were alive and well with

the vision preserved; 1 went blind (in this patient nothing was found at the operation though bilateral exploration was made). In 2 of these successful cases nothing was seen at the operation; in 1 a tumour was diagnosed and found on the left side of the cerebellum. Of 8 cases of cerebral exploration 4 were fatal within a month. In 1 a tumour in the right parietal region was partly removed with relief of agonising pain, the patient living a year. In 3 cases where no gross lesion was found at the operation relief was obtained from the symptoms: 1 patient alive and well with improved vision five years after operation, another three years after operation, and 1 died a year after with right hemiplegia. Dr. Warrington had found that advanced cases did not improve in vision and in the condition of the discs, but where the operation was done in the earlier stages of the alterations improvement was to be looked for as the result of a decompression operation.

Considerable discussion took place, in which Mr. THELWALL THOMAS, Mr. DAMER HARRISSON, Mr. E. STEVENSON, Mr. H. E. JONES, Dr. N. P. MARSH, Dr. J. H. ABRAM, Mr. R. M. STOCKDALE, Mr. R. W. MURRAY, Mr. C. G. LEE, and Dr. H. R. HURTER took part.

GLASGOW MEDICO-CHIRURGICAL SOCIETY.—A meeting of this society was held on Jan. 19th, Dr. A. Freeland Fergus, the President, being in the chair.—Mr. A. Ernest Maylard showed a boy, aged 10 years, who had been admitted to the Victoria Infirmary in September last suffering from an extensive Compound Comminuted Fracture of the Cranial Vault in the right parietal region, with escape of brain tissue, and signs of fracture of the base of the skull. At the operation the extruded brain matter and depressed fragments of bone were removed and other portions of bone elevated. The wounds remained aseptic throughout, but the boy was delirious for some days, and for a fortnight was not expected to survive. Thereafter he made a good recovery, and when shown, about three months after the accident, was mentally acute and physically active.—Dr. R. Speirs Fullarton showed a boy, aged 9½ years, who during the past three years had had three attacks of Hæmaturia, and now had a large tumour in the region of the right kidney, which was said to have been noticed first about three months ago. The diagnosis was thought to lie between cystic kidney, malignant tumour of the kidney, and hypernephroma.—Dr. Fullarton also gave a short account of the albumin-reaction of the sputum in pulmonary tuberculosis, and said that his observations made in 50 cases of phthisis and 50 cases of chronic bronchitis and other non-tubercular pulmonary affections confirmed the statements of continental observers that in the great majority of cases of phthisis and in pneumonia during the acute stage albumin is present in the sputum in considerable amount; while in the majority of cases of non-tubercular conditions (excepting pneumonia) albumin is either absent or is present in trifling amount. The proportion of cases in which this rule did not apply was, however, sufficiently large (as had been shown by Dr. Nathan Raw and as the speaker had found) to diminish seriously its value in the differential diagnosis between tubercular and non-tubercular diseases of the respiratory organs.—Dr. J. H. Nicoll showed: (1) Three examples of Meckel's Diverticulum which had been removed in consequence of having caused intestinal obstruction; (2) a large Mesenteric Fibro-sarcoma, with three-fourths of the small intestine necessarily removed with it; (3) Masses of Lymphatic Vessels excised in a case of Filarial Lymphangiectasis of the Spermatic Cord; (4) Calculi of Unique Composition removed from the Bladder in a case of Prostatic Hæmaturia; and (5) a large number of specimens from recent cases in which "piecemeal" prostatectomy had been performed. Dr. Nicoll strongly recommended the piecemeal method of removing the prostate, of which, he said, surgical opinion was increasingly in favour.—Dr. G. H. Edington showed a specimen of an Old Fracture-dislocation of the Upper End of the Humerus, and photographs of a case of Old Fracture of the Patella, with wide separation of the fragments.

UNIVERSITY COLLEGE, DUBLIN (NATIONAL UNIVERSITY OF IRELAND), MEDICAL SOCIETY.—A meeting of this society was held at the Medical School, Cecilia-street, on Jan. 25th, Dr. John O'Donnell being in the chair.—Mr. Maurice R. J. Hayes read a paper on the X Ray Diagnosis of Diseases of the Chest. After demonstrating by means of lantern slides of skiagrams the x ray appearances of the normal chest, he went on to describe the appearances in early phthisis, pleurisy, aneurysms, tumours, diseases and foreign bodies in the œsophagus, &c. He held that phthisis could be recognised by the fluorescent screen even before physical signs could be detected. In these cases the apices were seen to go through the stages of brightness, transradiancy, blurring, and deep shadow, while the diaphragm could be seen to lose its normal regular variation and to become jerky or "cog-wheel" on the affected side. He also emphasised the importance of the left oblique position—viz., tube to the left behind and screen to the right in front—in diagnosis of aneurysms of the arch of the aorta.—Mr. T. T. O'Farrell showed specimens of Mediastinal Tumour, Aneurysms, and Fish-bone Perforation of the Intestine.—A discussion followed, and was partaken in by Mr. M. F. O'Hea, Mr. G. Maguire, Mr. O'Farrell, Mr. H. S. Meade, Dr. W. D. O'Kelly, and Dr. H. L. Barniville.

Reviews and Notices of Books.

Breeding and the Mendelian Discovery. By A. D. DARBISHIRE, M.A., Demonstrator of Zoology and Lecturer on Genetics at the University of Edinburgh. London: Cassell and Co., Limited. Illustrated. 1911. Pp. 282. Price 7*s.* 6*d.* net.

HOWEVER different opinions may be upon the interpretation and general bearings of the facts dealt with in this book the author must certainly be credited with having set forth an admirably clear statement of his subject-matter. Mr. Darbishire's style is of a high order, always lucid, and never prolix. It is not too much to say that this work, although "intended to serve merely as an introduction to the subject," seems to be the best exposition of "Mendelism," from the Mendelian point of view, that has as yet appeared; it is free from any tone of sectarian fervour, and makes no exclusive claim of infallibility for hypotheses which happen to be founded on experiment. Experiment is a mode of making observations, and explanations founded on data thus furnished are as liable to error as those founded on any other verifiable facts. These qualities of clear statement and temperate advocacy should strongly commend this book to the notice of all students desirous of informing themselves of the basic facts on which the Mendelian hypothesis has been raised. Hence this work has a definite value quite apart from the specific object aimed at by the author.

Mr. Darbishire states at the very outset that his object is "to place within reach of the practical breeder some of the things found out by the scientific student of heredity which are likely to be of service to him." Bearing this in mind we cannot perhaps quarrel with the author for the scanty and scarcely critical treatment which he gives to certain important considerations connected with or underlying his main subject. These considerations, however, he apparently admits to be important. After the preliminary statement of his object, as above quoted, he proceeds to say that the breeder has two methods, "selection" and "crossing," and that selection creates something new, while crossing merely re-combines characters which already exist. Very little or nothing is known (he says) "of the causes which determine the origin of new characters, either in the domesticated or natural state; but the art of breeding by re-combination of existing characters has been brought to a point of extreme precision by Mendel's discovery." This statement concerning "recombination" seems somewhat magisterial as it stands; the defined scope of the book, however, may be held to account for this assumption.

Again, after repeating that his object is to "make

perfectly clear what the Mendelian discovery was, and how it affects the practice of breeding," the author announces that he "will deal with the origin of new forms, because a knowledge of Professor De Vries's observations on this process is necessary to an appreciation of the significance of Mendel's discovery." On this follows at once an excellently clear statement of the hypothesis of *Mutationism*, which is so intimately associated with Mendelism in many, if not most, Mendelian writings. But here Mr. Darbishire, by omitting all critical comment on this new hypothesis of the origin of species, will leave many readers in some doubt as to how much importance he attributes to it himself, and how far it is bound up in his own mind with the Mendelian theory to the application of which he devotes the rest of his book. Again, in dealing with the matter of "Reversion," the author gives several instances and writes with his usual clearness; but other aspects of the questions involved are not discussed: he states that he has been merely concerned to point out that certain cases of "reversion" can be easily described in terms of Mendelian hereditary processes. In another place he says that though the Mendelian theory of "reversion" is not proved, it is, in his opinion, the first consistent theory which has been set forth. Here Mr. Darbishire certainly avoids any charge of dogmatic statement, but nevertheless the underlying assumption is of high importance to his general position.

After two interesting and ably written chapters (XV. and XVI.) on New Principles of Breeding, based on Mendel's Theory and on the Inheritance of Sex, the book ends with a very short chapter on the Origin of the Mendelian Mode of Inheritance. This chapter, consisting of but seven pages, begins with the statement that "it is a very important matter to determine whether Mendelian heredity is a fundamental process the true understanding of which will render all other phases of heredity intelligible, or whether it is an anomalous phase of heredity which is restricted to a small group of characters belonging chiefly to domesticated animals and plants. For if the latter is the case the investigation of Mendelian phenomena can throw no light on the problem of the successive generations of organisms, nor help to elucidate the nature of the processes to which evolution is due." Here Mr. Darbishire, in support of what apparently is his own view on this all-important question, singles out one opponent, Dr. Archdall Reid, and attacks him without great effect. Quite apart from the fact that the question to be decided does not turn necessarily on any views which may or may not be proper to Dr. Reid alone as to the question of sex-inheritance, and also apart from the fact that large numbers of biologists do not consider that Mendelism with all that it seems to entail is the true key to the process of biological evolution, it appears to us that Mr. Darbishire really fails to understand what Dr. Reid himself means. This may be to some extent Dr. Reid's fault. Mr. Darbishire is misled by words to oppose the "massive" as applied by Dr. Reid to evidence gathered from all available and relevant sources, to the "minute" evidence relied upon by himself in the matter of the observation of chromosomes, thus using a false antithesis. And we do not see that he is justified in attributing to Dr. Reid the belief that the *a priori* method of reasoning is trustworthy. But Mr. Darbishire does not expand this statement, and what he conceives the *a priori* method to be remains very doubtful.

In this interesting book the author is unquestionably at his very best when he deals, as in far the larger part he does deal, with the object he professedly undertook. But when touching, as he evidently thought it necessary to touch, on the wider biological questions concerning the origin of new forms, his judicial attitude seems to fail, and he appears to imply that the important question he raises as to the fundamental part played in heredity by the Mendelian process is already answered in the affirmative.

The excellent plates, in colour and in black and white which illustrate this book will be highly appreciated by all students.

Archives of Neurology and Psychiatry, from the Pathological Laboratory of the London County Asylums, Claybury, Essex. Edited by F. W. MOTT, M.D. Lond., F.R.S., F.R.C.P. Lond., Director of the Laboratory and Pathologist to the London County Asylums, Physician to Charing Cross Hospital, &c. Volume V. London: P. S. King and Sons. 1911. Pp. 226, exclusive of Appendix of Collected Papers.

VOLUME V. of the "Archives of Neurology and Psychiatry" maintains that high level of scholarship which our experience of its predecessors has led us to anticipate. It bears witness to the health and progressive vigour of neurological and psychiatrical research in the laboratory of the London County Asylums, under the ægis of its able director, Dr. Mott. In this volume 11 papers of varying length are published for the first time, and in an appendix seven others are republished, some of which have already appeared in the pages of THE LANCET. Of the former, reference may be made to the authoritative communication on Congenital Syphilis and Feeble-mindedness, from the pen of Dr. Mott. He shows conclusively that syphilis is an active agent in the production of congenital weakness and the degeneracy that accompanies it, and furnishes evidence to prove that the measure of its influence ought not to be estimated only by the visible and characteristic signs of syphilis on the body. The whole article deserves to be read carefully.

Other valuable papers are those on Institution Dysentery, by Dr. J. P. Candler and Dr. G. Dean, in which the same organisms as have been found in summer diarrhœa are reported as occurring in certain cases of epidemic intestinal dysentery at Claybury; on the Cortex of the Auditory Centre, the Insula, and Broca's Convolution in a Case of Deaf Mutism, by Dr. Fortuyn, of Amsterdam; on the Microscopic Investigation of a case of Tabo-paralysis with Bilateral Ophthalmoplegia, by Dr. Rondoni, of Florence; while the psychiatrical side is worthily represented by papers on the Psychological Conception of Insanity, by Dr. Bernard Hart; on "Washing Hand" Mania, by Dr. G. F. Barham; on Dementia Præcox, by Dr. Harper-Smith and Dr. G. H. Rae Gibson. In the appendix are Dr. Mott's Oliver-Sharpey lectures on the Cerebro-spinal Fluid, his Huxley lecture on the Hereditary Aspects of Nervous and Mental Diseases, and his Royal Institution lecture on Heredity and Insanity, as well as important pathological papers on Trypanosome and Spirochæte Infections, and on Amaurotic Family Idiocy, by the same author, and others that will equally well repay perusal by the neurologist and the physician.

Medical Science of To-day: A Popular Account of the More Recent Developments in Medicine and Surgery. By WILLMOTT H. EVANS, M.D., B.S., B.Sc. Lond., F.R.C.S. Eng., Surgeon to the Royal Free Hospital and Surgeon to the Hospital for Diseases of the Skin, Blackfriars. With 31 illustrations. London: Seeley, Service, and Co., Limited. 1912. Pp. 319. Price 5*s.* net.

"SUCCESS in carrying out the preventive measures which medical science has indicated does not depend only on members of the medical profession. It depends on the Government, on every voter in the Kingdom, and on every individual citizen, for without the coöperation of those who govern and those who are governed medical men can do nothing." In these words Mr. Willmott Evans strikes the keynote of his recent work, "Medical Science of To-day." With this point in view the education of the public in medical principles becomes a matter of the first importance, such

education being not in the details of disease as affecting the individual and their treatment, a practice which the medical profession must continue to deprecate as leading to injurious introspection, but in the broad facts on which our knowledge of disease is based and the methods by which that knowledge is attained, for these only can inspire confidence in the workers and obviate despair over temporarily conflicting views and theories. To this end Mr. Evans's book can be warmly commended for general perusal, the wider the better; to legislators (particularly those concerned especially with public health problems), to those whose function is the instruction of the community, schoolmasters, philanthropists, clerics, writers, and journalists. Mr. Evans says: "If we agree that the mainspring of the opposition to hygienic measures, whether that opposition is intentional or not, is lack of knowledge, it is clearly only reasonable that means should be taken to educate the public mind on some, at least, of the matters which are now engaging the attention of the medical profession, on some of the problems which we are now endeavouring to solve. ..... Though naturally legislators must be, for the most part, dependent on the expert opinions with which they are supplied, yet they would probably be more ready to accept those opinions if they were more able to appreciate the grounds on which those opinions were based." Our readers will here be in accord with the author.

All study of a subject should begin with at least a bird's-eye view of its history, explaining the course of its development, and Mr. Evans gives such a brief, though for the purpose ample, sketch before discussing the causes of disease, which he divides into four classes—mechanical, physical, chemical, and parasitic. Among the parasitic are, of course, included germs, and these are dealt with in a special chapter in an interesting and detailed manner as regards their general characteristics. To the average layman without scientific training few things appear more mysterious and incomprehensible than the estimation of the huge numbers employed in obtaining various scientific data, whether of stellar distances, geological ages, or what not, and there is often a not unnatural tendency to regard them as mere guess-work. The clear and detailed account of the manner in which the enumeration of the corpuscles in the blood is made in Mr. Evans's chapter on the microscope may help to bring conviction to many that not only these but other and very different calculations are really based on sound principles. The uses of the microscope in medicine and the various points concerning which information can be obtained thereby as to the state of the human body are excellently set out. The wisdom of first describing the general principles of immunity before touching on such debated matters as antitoxin, vaccination, and so on, is to be highly commended. A comprehension of these principles will overcome a large part of the *a priori* prejudice with which a lay reader would otherwise approach a subject on which he had already taken sides without any adequate knowledge of the principles involved. The public is well accustomed to the use of diagnostic instruments and appliances, but it is safe to say that there are few who have any conception of why these instruments tell the physician what he seeks to ascertain. A lucid description, therefore, of the principles underlying percussion, auscultation, the use of the thermometer in medicine, the ophthalmoscope, and other instruments, will throw light upon much that is obscure to the public mind. The story of the discovery of anæsthesia is admirably told, and there will be general agreement with the statement that "of all the many blessings which the medicine of modern times has conferred on the human race, none can compare with antiseptic surgery." The wonders of modern surgery following upon Lister's discovery are exemplified in the surgery of the brain, heart, and abdomen, skin grafting, the replacing and transplantation of organs, cosmetic surgery, and the wiring of broken bones. After a judicious middle view in relation to the place of drugs and animal organs in the modern art of healing, Mr. Evans humorously pillories some of the absurd stories whereby the method of discovery of "patent medicines" is heralded. He is of the opinion that it is idle, even if it were desirable, to attempt to prohibit the sale of so-called patent medicines, but he maintains, and we think rightly, that they would be shorn of most of their dangers if it were made compulsory that every such article should bear on its bottle or box a correct statement of its constitutents, for "when the purchaser knew what he was buying he would not be deluded by the charm of the unknown."

The application to public medicine of what has been learned of the principles and methods of modern medicine is admirably illustrated in the chapter on the Political Importance of Malaria, wherein the effect of this and other diseases on the rise and fall of nations is displayed, special reference being made to the observation and research of Sir Ronald Ross and Mr. W. H. S. Jones. The successful fight against malaria and yellow fever in Panama and the West Indies offers a splendid object-lesson for those whose practice it is, without knowing whereof they talk, to depreciate medical science. Industrial diseases are an increasingly important question in these days, and the more widely some knowledge about them is disseminated the better. The same applies to the subject of legal medicine, for a sustained confidence in our judicial processes will be fostered in medico-legal cases by a knowledge of how it is possible in certain legal cases to give those precise statements which are so often a cause of wonder.

Of the medicine of the future the author is optimistic, believing that many of our difficulties will be cleared away and many of our hardest problems solved. The most encouraging thing of all here is the universality of medical progress. To every country medicine has been and is being indebted, and in our own time we have seen Japan, almost fresh from barbarism, come to the forefront in extending the ever-widening boundaries of our science. A broader and more accurate conception of medical problems, a juster appreciation of medical efforts, and by consequence a more intelligent support for enlightened public action, will make possible not only the coöperation of all within the State, but the coöperation of States one with another in the defeat of disease and the victory of health.

Outlines of Biology. By P. CHALMERS MITCHELL, F.R.S., Secretary to the Zoological Society. Revised and Supplemented by GEO. P. MUDGE, F.Z.S., Lecturer on Biology, London Hospital Medical College. Third edition. With 11 plates and numerous diagrams. London: Methuen and Co., Limited. 1911. Pp. 348. Price 6s. net.

THESE "Outlines of Biology" were first published in 1894, and they have been revised and supplemented so that they now cover the ground of the student working for the First Examination of the Conjoint Board of the Royal Colleges of Physicians and Surgeons. It is a work written to meet the requirements of an examining board, though it is claimed that it meets in large measure the requirements of other examinations. It is always a question whether this is the best principle to guide the writer of a text-book. Several of the chapters in previous editions have been supplemented or rewritten and amplified, while chapters dealing with ciliated protozoa, sporozoa, the gross morphology of dicotyledonous plants, the structure of the stem, leaf, and

root, have been added. In addition, an attempt has been made to present the chief elementary facts in the histology of simple tissues. Forty pages are devoted to this subject. Amongst the subjects dealt with, besides those already mentioned, are protoplasm, unicellular plants, yeast, bacteria, protococcus and spirogyra, unicellular animals—e.g., amœba, and ciliated protozoa such as vorticella and paramecium. Attention is next devoted to the botanical subjects already mentioned. A short account is given of animal cells and metazoa—e.g., hydra,—the gastrula and cœlomata—e.g., the earthworm. A comparison between invertebrates and vertebrates forms a short chapter, and then follows a full account of the dog-fish and the frog. Mitosis, maturation of the germ cells, and development of organisms complete the text (pp. 311–327). It will be seen that the scope is limited, but so is the syllabus of the Conjoint Board.

If Mr. Mudge has an opportunity of preparing another edition of this work we hope that he will attend to some mistakes which he has allowed to creep into the third edition. In dealing with the action of the yeast plant it might be well to indicate that the alcohol formed is the ethylic form. On p. 20 "Schultze's solutions" should be defined. The composition is mentioned later. Spores are described as having "exceedingly thick" walls. This is apt to be misleading unless measurements are given. The description of the sympathetic system in the frog might easily be improved. In the chapter on Histology the fat-stream through the thoracic duct seems to have been omitted, while the term "reduced hæmoglobin" had better be discarded and called simply "hæmoglobin." That hæmocyanine contains copper instead of iron might be mentioned. A neophyte in biology is not likely to make much of "clasmatocytes"; their name has nothing to do with extensive vacuolation. It is not necessary to immerse a bone for several weeks in a dilute acid to decalcify it. Does a calcined bone upon the slightest touch crumble into dust? Does bone "consist of a meshwork of living bone-corpuscles with the spaces of the mesh filled up with calcareous salts deposited in an organic base"? and does the blood-plasma exude through the capillaries of the Haversian systems of bone? The sarcolemma of striped muscle is said to be difficult of demonstration. Surely this is not the case. In speaking of the structure of nerves it is stated that "each nerve fibre or axis cylinder is enclosed in two sheaths."

These "Outlines" have for many years thoroughly met the purpose which inspired their production; granted that when the student had mastered the whole of the contents he had not gained a very broad outlook on either the vegetable or the animal kingdom, he had certainly prepared himself for further biological work, in case his attention should not be for the future taken up by his professional studies. We have been a little insistent upon the points where revision is needed, because we consider that it would be a great pity to allow the work to lose credit in any way. The illustrations have been largely added to, and 11 half-tone plates—some with several figures—have also been added.

Pleurisy, including Empyema and Bronchiectatic Conditions. By ALEXANDER JAMES, M.D. Edin., F.R.C.P. Edin., Consulting Physician to the Edinburgh Royal Infirmary and to the Edinburgh City Hospital. With illustrations. London and Edinburgh: Oliver and Boyd. 1911. Pp. 243. Price 6*s.* 6*d.* net.

IN this monograph the various forms of pleurisy are considered chiefly from a clinical standpoint, but with special reference to etiological considerations. The work embodies Dr. James's own experience of the disease, and it is from the standpoint of the practical physician that he presents his views. He quotes illustrative cases to bring out more clearly the general types of the condition which he recognises and to give point to the explanations which he offers of some of its manifestations. At the same time he is careful to state the views of other authorities and to give due weight to them. In regard to the causation of disease, while he recognises that micro-organisms play an important part, he is of opinion that this has been much exaggerated, and he attaches far more importance to the investigation of the conditions which enable them to invade the tissue and produce their effects. In other words, he endeavours to investigate the conditions leading to predisposition, susceptibility, and diminished resistance to disease.

The author describes the symptoms and physical signs of pleurisy in all its forms, and in each instance discusses the mechanisms by which they are produced. The area of dulness occurring alongside the vertebral column on the unaffected side in pleural effusion, to which the name of Grocco's triangle is often applied, is regarded by him as due to the slightly collapsed condition occurring in the lung on that side resulting from the diminished elastic traction of the affected lung. Pleurisy associated with new growth of the pleura is discussed and illustrated by descriptions of cases. The subject of empyema is considered in detail, and separate chapters are devoted to a description of the natural methods of cure, the relation of empyema to bronchiectatic conditions, empyema in unusual situations, fœtid and gangrenous effusions, pulsating empyema, and empyema associated with pulmonary tuberculosis, which is called "phthisical" empyema. We must confess to an even greater objection to the adjective than to the noun from which it is derived. Dr. James inveighs strongly against the tendency to "imbue the public mind with the idea that an individual with tubercular disease who observes cleanliness himself and who lives among people who do the same is a source of danger to his neighbours." This he characterises as being as false as it is cruel, a view with which we are in complete accord. A separate chapter is devoted to descriptions of streptothrix and leptothrix empyemas, and the concluding chapter deals with the treatment of pleurisy and empyemas.

Dr. James's book, while not attempting to record much that is new or original, is characterised by common-sense recommendations, and affords a readable account of the conditions of which it treats.

Ticks: A Monograph of the Ixodoidea. Part II.: Ixodidæ and Bibliography. By G. F. NUTTALL, F.R.S., C. WARBURTON, M.A., W. F. COOPER, B.A., and L. E. ROBINSON, A.R.C.S. Cambridge University Press. 1911. Part II., 348 pp., 4 plates, and 192 figures in the text; Bibliography 68 pp. 12*s.* net each part.

THE importance of ticks as carriers of disease amply justifies a detailed account of these animals, which has naturally also a very large value as a contribution to systematic zoology. The authors are therefore to be thanked and congratulated upon the successful accomplishment of their very great labour. Inasmuch as the bibliography alone contains just over 2000 titles the mere book-work connected with this undertaking must have been of itself an enormous task. When we consider the careful identification of the several species, and the long journeys to museums abroad to see and compare specimens, our gratitude to these authors should be given in no unstinted measure. Nor have they failed to render the results of their labours legible to any instructed zoologists who shall come after them. For the different species are not only clearly and fully described, but their principal anatomical characters are illustrated by as plain and intelligible outline sketches as we remember to have seen in any work of this kind. The bibliography is printed

upon one side of the paper only, which, together with the inclusion at the end of several blank pages, will allow the student of this group of arthropods to fill in the titles of fresh memoirs as they make their appearance. Moreover, the bibliography is more than a mere record of references. In many cases some brief notion is given of the contents of the paper quoted; this will save much time to those who come after.

Hygiene and Public Health. By Sir ARTHUR WHITELEGGE, K.C.B., M.D. Lond., and Sir GEORGE NEWMAN, M.D. Edin. Twelfth edition, revised throughout. London: Cassell and Co. Pp. 760. Price 8*s.* 6*d.* net.

THE issue of a new and revised edition of "Whitelegge and Newman" deserves a special word of welcome. The popularity of this manual results, to a large extent, from the successful manner in which the authors cover the field of "hygiene" in a book of such moderate size and price. Both authors are especially qualified for the task of selecting essential material, from experience in teaching and examining, from their long and close association with local sanitary administration, and from their present position as heads of their respective services in Government departments. Every few years many alterations and additions become necessary in a work of this sort, for besides the growth of our knowledge of the etiology of disease and of the conditions of its progress and prevention, an ever-widening sphere of influence in the State is opening up before the worker in preventive medicine. Even in the few months which have elapsed since this edition was revised, pulmonary tuberculosis has been made generally notifiable, and a million and a half has been voted by Parliament for sanatoriums, thus opening a new chapter of work on the details of which it will soon be essential for the supervisors of public health to be fully instructed.

The present volume has been considerably enlarged, but retains the general form, systematic arrangement, and clearness of exposition which characterised its predecessors. The recent developments of school hygiene are well set out, including the latest circulars of the Board of Education on the subject, and similarly with the Housing Acts and the duties of medical officers of health as recently formulated by the Local Government Board. The results of modern work on the effect of storage in the purification of water, the parasites of meat, the ventilation of sewers and house drains, and numerous other matters have been incorporated, and the chapters on epidemic and infectious diseases have been brought to date in many respects.

The edition will be almost indispensable to the practising medical officer of health, and is also cordially to be commended to the student and to the general practitioner, who so often needs quickly to obtain information from authoritative sources respecting the functions of the central and local public health departments in regard to preventable disease, and to become acquainted with the increasing number of ways in which public health measures are being brought to bear upon the problems which he meets with in his daily work.

Formulaire des Agents Physiques. By Dr. J. LARAT, Dr. G. DAGRON, Dr. RAY-DURAND FARDEL, and Dr. DUBOIS. With a Preface by Dr. G. DIEULAFOY. Paris: Octave Doin et Fils. 1912. Pp. 451. Price 6 francs.

IN this volume a general account is given of the principles and practice of hydrology, hydrotherapy, massage, and the application of electricity in treatment. In the first portion of the work an attempt is made to bring these measures within the scope of general practitioners. It is pointed out that in large cities establishments exist where such procedures can be carried out by especially prepared appliances, but in country practice such is not the case, and hence the instructions given in this work may prove of value. With regard to massage, instructions are given which the practitioner can have carried out, or he can follow them personally in cases where he chooses to afford the time. Various hydrotherapeutic measures are described which can certainly be made use of with very simple apparatus. Electrical appliances in ordinary practice must, of course, be strictly limited, but some useful hints are given which can be easily followed. The use of mineral baths and waters can only partially be imitated, and the best effects are produced by sending patients to suitable spas.

In the second part of the volume diseases are considered in alphabetical order, and the various physical agents that may be employed are discussed under each malady. For instance, under the heading of Dyspepsia, the particular form in which electricity may be applied is first described, then the mineral waters and spas which are of service, and finally the advantages of massage.

As a work of reference this volume should prove of value, for it contains a large amount of information which is generally only found scattered through various text-books.

LIBRARY TABLE.

The Illustrated Medical Dictionary: A New and Complete Dictionary of the Terms used in Medicine, Surgery, Dentistry, Pharmacy, Chemistry, Nursing, Veterinary Science, Biology, Medical Biography, &c., with the Pronunciation, Derivation, and Definition, including much Collateral Information of an Encyclopædic Character. By W. A. NEWMAN DORLAND, A.M., M.D. Sixth edition, revised and enlarged. London and Philadelphia: W. B. Saunders Company. 1911. Pp. 986. Price 19*s.* net, or 21*s.* with thumb index.

The Pocket Medical Dictionary. Edited by W. A. NEWMAN DORLAND, A.M., M.D. Seventh edition, revised and enlarged. London and Philadelphia: W. B. Saunders Company. 1911. Pp. 643. Price 5*s.* net, or with thumb index 6*s.* net.

A Pocket Medical Dictionary. By GEORGE M. GOULD, A.M., M.D. Sixth edition, revised and enlarged. 34,000 words. London: H. K. Lewis. 1911. Pp. 1005. Price 5*s.* net.

All these dictionaries are now widely known. The rapidity with which new editions follow one another is a testimony not only to their popularity and usefulness, but also to the desire of their authors to keep them fully abreast of the rapid progress of word-making—very much of it unnecessary, it must be admitted, and some of it certainly philologically monstrous. The medical profession is properly severe on medical quackery, but it is itself one of the worst of sinners as regards philological quackery. There is no reason why every medical writer should think himself perfectly competent to invent not only new terms for new things, but even better names for those things that have already been named. But since he will persist in so sinning, it is necessary that the unfortunate reader should have some guide to explain these new words, and this is even more necessary in regard to the monstrosities than to those terms that are regularly formed on sound philological principles, and consequently are more self-explanatory to medical men of adequate education. It would be easy to find much in this regard to criticise in each of these dictionaries, but until the medical profession consents to submit its proposed new terms to a committee of philological experts to ensure that they shall be correctly framed and shall really convey what they are intended to convey it is useless to find fault.

The sixth edition of Dorland's Illustrated Medical Dictionary is said to be "new from cover to cover," and it

certainly contains many new and useful features, among which may be named the spelling of title words with an initial small letter, the reserving of the use of capitals for proper names, the introduction of biographic information—i.e., the full name, nationality, specialty, and dates of birth and death—concerning men whose names are given to diseases, structures, and procedures, as well as the insertion in their proper alphabetical order in the dictionary of short sketches of the "fathers" of medicine, such as Hippocrates, Galen, Soranus—an addition which, we feel sure, will be welcomed by many; the full definition of terms used in dentistry and veterinary medicine; and, finally, a posological and therapeutical table. The two pocket dictionaries are essentially readers' dictionaries, intended to lie handy for reference while perusing medical literature. Dorland's Pocket Medical Dictionary is so compact as to be readily kept at hand and so reasonable in price as to be within everyone's capacity to buy. In our review of the sixth edition we pointed out that the term "Charcot's disease" is usually applied to the synovial destruction in locomotor ataxia and not to insular sclerosis. In the present edition we find "Charcot's disease" defined simply as "multiple cerebro-spinal sclerosis." Gould's Pocket Dictionary is somewhat fuller on this subject, giving "(1) Amyotrophic lateral sclerosis; (2) arthropathy of tabes dorsalis; (3) multiple cerebro-spinal sclerosis." A careful comparison of the two dictionaries by actual practical use shows, as might be expected, that sometimes one, sometimes the other, seems to be more satisfying. The thinness of the paper in Gould's dictionary, adopted to allow of an increase of contents without increasing the bulk, imports a great disadvantage in the matter of turning over the pages. We doubt if even the enormous content of 34,000 words is sufficient to compensate for this irritating defect, which should be obviated in future editions, even though the bulk be slightly increased or the contents condensed.

All the books can be recommended.

Sanatoria for the People. By CHARLES H. GARLAND and THOMAS D. LISTER, M.D. Lond. London: The Scientific Press, Limited. 1911. Pp. 71. Price 1*s.*—In this small volume a good popular explanation is given of what a sanatorium is, "what work it performs, what work it is capable of performing, and in what relation it stands to the other methods of dealing with consumption." The writers take the stand that the sanatorium is the most important link in a chain of measures by which pulmonary tuberculosis could be so diminished that a bright prospect would be offered of its eventual eradication. They quite rightly point out, however, that although such an important one it is only a link, and in order that it may reach its maximum of efficiency it must be supported by the other necessary links. It is necessary that this should be plainly realised by the general public, otherwise with the establishment of the proposed State sanatoriums equally important preventive measures may be neglected. There are a good many useful hints given in the course of the book. For instance, it is stated that the sanatorium, *per se*, should be confined to the treatment of early cases in which there is a reasonable prospect of the arrest of the disease. There has been a tendency to adopt the idea that because a patient has pulmonary tuberculosis, no matter what the stage of the disease, *ergo*, he must go to a sanatorium. Such a conception of the purposes of a sanatorium cannot fail to engender want of confidence in a most valuable therapeutic measure. The authors also lay stress on the importance of differentiating between a sanatorium and a "home of rest." The former must be represented not only as an institution for the treatment of tuberculosis, but also as a school of hygienic living at which the patient will be taught not only how to live healthily, but also how to perform his work healthily. This book will help the non-medical community to a more accurate knowledge of the nature and scope of sanatorium treatment and thus aid in "the State campaign against consumption."

The British Red Cross Society Training Manual, No. 3, by JAMES CANTLIE, M.A., M.B. Aberd., F.R.C.S. Eng., V.D. London: Cassell and Co., Limited. 1911. Pp. 226. Price 1*s.* net, post free 1*s.* 2*d.*

Red Cross Manual of First Aid and Stretcher Drill for Red Cross Students, by D. M. MACDONALD, M.D Aberd., medical officer of health, Leven, Fife, and examiner to the St. Andrew's Ambulance Association. London: George Gill and Sons. 1911. Price 1*s.* net.

First Aid to the Injured and Sick: An Advanced Ambulance Handbook. By F. J. WARWICK, B.A., M.B. Cantab., M.R.C.S., L.S.A., and A. C. TUNSTALL, M.D., C.M., F.R.C.S. Seventh edition, revised. 60th thousand. Bristol: John Wright and Sons. London: Simpkin, Marshall, Hamilton, Kent, and Co., Limited. 1911. Pp. 246. Price, paper, 1*s.* net; leather, 2*s.* 6*d.* net.

Mr. Cantlie's book is intended to guide those who have already acquired a knowledge of first aid and nursing to act collectively in carrying out the Red Cross work, to accustom them to discipline, by which alone efficient service can be rendered, and to stimulate them to exercise their initiative and resourcefulness in constructing and applying improvised means of providing help, shelter, and transport for the sick and wounded in emergencies. It has a semi-military character and is issued with the approval of the War Office. The improvising of camp kitchens, latrines and beds, camp cooking, and many other things connected with outdoor life will render it of even wider service than its original aim sought.

The *Red Cross Manual* of Dr. Macdonald is a compromise between the more technical and the elementary aspects of ambulance work and first aid, covering all the ground necessary for Red Cross work and embodying squad and stretcher drill. The book is divided into 12 chapters, at the beginning of each of which a few notes are suggested for the use of the lecturer, and at the end some questions are inserted for the student. The arrangement will commend it to both teacher and student.

First Aid to the Injured and Sick, the advanced ambulance handbook by Dr. F. J. WARWICK and Dr. A. C. TUNSTALL (both of the Royal Army Medical Corps T.F.), is now in its seventh edition. It has been thoroughly revised and the new stretcher drill has been incorporated from the Royal Army Medical Corps Training, 1911. The book fully sustains its previous reputation.

My Life Story. By EMILY, Shareefa of Wazan. Illustrated. London: Edward Arnold. 1911. 8vo. Pp. 327. Price 12*s.* 6*d.* net.—This book possesses a quality that is rare nowadays—it is the simple direct impressions of a writer who has "been there" and stayed there, and lived the life of the people. The book is so simple and so modest in style that the authoress writes as though everyone knew something of Morocco. She hardly gives any indication as to the position of a shareef, and none as to that of Wazan, yet to describe herself as Shareefa of Wazan should be as good an introduction as (say) the style of Duchess of Norfolk, and the former is in antiquity and national influence far the superior title.

Everyone now ought to know something about Morocco, if only from reading the newspapers. But, also, it is easy to get a cursory glimpse at the Atlantic coast ports even within the limits of a three weeks' cruise. Morocco is far more oriental than many countries lying further east, and

may be a recognised resort for travellers of moderate means and leisure as long as its national character persists. The sherifs, or shareefs (the English spelling is optional), of Wazan are hereditary chieftains of great importance in northern Morocco. The word sherif implies a direct descendant from the Prophet, and the sherifs of Morocco are the offspring of Imaum Mahanmal (the fifth descendant of Fatima), whose son Idris fled from Mecca to Tangier in 786 A.D. The sherifs have not always occupied the Sultan's throne; the direct descendants of Idris reigned till 986. After that there were no reigning sherifs till 1544, when the line of Hazan ruled for a century and the Filalie sherifs ever since; to the latter family Mulai Hafid, the present Sultan, belongs. Most of the dominant families in Morocco claim descent from the Prophet, and into such a family an English girl married nearly forty years ago and has remained there, and entered fully into native life, surrounded entirely by native servants and retainers. The results of her experience are set down in this volume, and the simplicity and unaffected *naiveté* of the writing give the record an aspect of entire trustworthiness. The Shareefa led a very retired domestic existence, though overcrowded with difficulties and even dangers to her life. Any foreigner residing in the household of a rich noble in Morocco would be so exposed, even if he or she were a Mohammedan convert; but the Shareefa remained a Christian, and those who know the rigid fanaticism of the country know what dangers and difficulties that implies. Readers must not expect any political information from this volume, or any light upon recent history in Morocco, but, on the other hand, there is a wealth of interesting details about domestic habits, the care of children, the customs of marriage, the ritual of burial, and other matters which only a long and intimate residence could afford to a writer. There is an appendix telling of quaint sayings and superstitions among the Moors. For instance, "Children under two months old must not have their laundry out of doors after 3 P.M., otherwise they will cry all night." This is a sample, and there is a whole liturgy of portents attached to itching in various parts of the body. It is to be hoped that the Shareefa will make further contributions to the literature about Morocco, a literature which is at present very scanty in English and not abundant in any language. The way to a hearty welcome is paved by this very genuine and interesting volume of impressions.

Wright's Improved Physicians' and Surgeons' and Consultants' Visiting List. Compiled by ROBERT SIMPSON, L.R.C.P., L.R.C.S. 1912. Nineteenth edition. Bristol: John Wright and Sons, Limited. Price 5*s.* to 7*s.*—This well-known visiting list contains besides the usual information a visiting list ruled for a month on the open page, to accommodate from 40 to 240 patients, at prices ranging from 5*s.* to 7*s.*, a consultant's record showing the patient, medical attendant, and consultation engagement, obstetric engagements, vaccination engagements, notification of infectious diseases, nurses' addresses, patients' special addresses, motor expenses (a new feature). A perpetual list is also published (Form B), the same in its contents as Form A, but arranged to be commenced at any time and used until filled.

JOURNALS AND MAGAZINES.

The Medical Chronicle.—By way of original matter there is published in the January number of this magazine a thesis by Dr. James Randal Hutchinson on the Presence of Typhoid Bacilli in the Stools and Urine during Enteric Fever and Afterwards. The author concludes that 2 per cent. of such patients become chronic carriers of bacilli, while 8·3 per cent. are still excreting the organisms at or about the time of their discharge from hospital. These figures are based on a study of 50 patients, a number scarcely large enough to give accurate percentage results, but the general conclusions reached are of considerable importance.

The Birmingham Medical Review.—The opening number of this journal for this year is considerably bulkier than those to which we have been accustomed, its increased size being partly due to the thicker paper employed. In it Mr. Leonard Gamgee discusses the Differential Diagnosis of Tumours of the Pylorus, and Dr. R. Beatson Hird deals with Ophthalmic School Clinics, noting that more than one "dunce" has been cured by a pair of spectacles. Dr. Jameson Evans writes on Pituitary Growths, distinguishing the symptoms due respectively to excess and defect of pituitary secretion, the former including acromegaly and gigantism, and the latter some forms of infantilism and "certain cases in which there is excessive development of fat with mental and physical torpor, and disturbance of sexual function—dystrophiæ adiposo-genitalis of Fröhlich."

West London Medical Journal.—In the January issue is published an interesting paper by Mr. N. Bishop Harman on the Comparative Anatomy and Development of the Muscles of the Eye. He notes that the ocular muscles are developed from those of the first gill cleft, and explains on this principle that curious phenomenon known as "jaw-winking," and also certain clinical cases in which paralysis of the ocular muscles is accompanied by weakness of the orbicularis. Dr. Seymour Taylor writes on Unrecognised Diphtheria, and Dr. T. Grainger Stewart on four cases of Spinal Syphilis.

ERRATUM.—In our review of *Analyse des Harns* on Jan. 20th, p. 172, it was stated that "the reference for the account of Moore's test for sugar in the urine is given to the article in THE LANCET of Sept. 26th, 1844." This reference is not quite correct. The article on "Liquor Potassæ: A Test for Sugar in the Urine; by John Moore, Esq., one of the Resident Medical Officers of the Queen's Hospital, Birmingham," appeared in THE LANCET of Sept. 14th, 1844, p. 751. The author's account of the origin of the test is as follows: "That liquor potassæ when boiled with diabetic urine produces a characteristic colour was first noticed by my friend Mr. Palmer, Dispenser to the Queen's Hospital. This led him, with myself, to consider that it might be made practically useful, and induced us conjointly to institute the following experiments."

Reports and Analytical Records
FROM
THE LANCET LABORATORY.

DRY DIAMALT.

(THE BRITISH DIAMALT CO., 11 AND 13, SOUTHWARK-STREET, LONDON, S.E.)

WE have previously examined the malt products of this company and have reported upon their high digestive activity. Those were concentrated preparations in the shape of thick fluids. We have recently had submitted to us a sample of dry diamalt malt extract. This is an attractive-looking preparation, a crisp light-brown powder. In spite of the drying process through which it has been put its activity on starch is remarkable. We found that in one hour at body temperature one part by weight of dry diamalt completely converted five times its weight of starch, while in two hours one part of dry diamalt digested no less than 20 times its weight of starch. The powder dissolves readily in water and has a peculiarly attractive malty flavour. It contains of course all the constituents of malt soluble in water—viz., malt, sugar, protein, and phosphates. The moisture amounted to 2·50 per cent., the protein to 7·93 per cent., and the mineral matter to 1·50 per cent. The figure for protein is the highest we

have found in a malt extract. Its convenience for use, as compared with the sticky extracts, is obvious.

COLLOSOL SILVER AND COLLOSOL MERCURY.

(MESSRS. OPPENHEIMER AND CO., LIMITED, 179, QUEEN VICTORIA-STREET, LONDON, E.C.)

From the point of view of the colloidal state these interesting preparations are quite satisfactory. Further, they are reported to be stable, the ultramicroscopic examination showing the characteristic appearance of a metallic solution. On heating them, also, no change is shown, and when cooled there was no difference. On evaporation the residue obtained was easily taken up again except a very small scum, but there was no suggestion of metal being thrown out. On dialysis the absence of reduced salts was demonstrated. We understand that experiments have shown that the metals present exercise a sufficient antiseptic influence to preserve the colloidal agent in the solution. These preparations are excellent types of the respective metals in a satisfactory colloidal state. An interesting letter appears in another column in regard to their clinical value.

JOHA (SALVARSAN).

(S. MAW, SON, AND SONS, 7–12, ALDERSGATE-STREET, LONDON, E.C.)

Joha is described as a 40 per cent. preparation of salvarsan ready for immediate use. We find that it is an oil suspension of the organic arsenic compound. The oil is iodipin, which is readily absorbed. Some importance is attached to the use of this oil and to the preparation of joha in general, inasmuch as it is said that it causes no pain when injected into the right place and produces no infiltration. The percentage of salvarsan is high, so that large quantities may be introduced by using relatively small volumes of joha. Joha is stated to keep well. Its composition is due to Dr. Carl Schindler, Berlin, and Dr. A. Neisser, Breslau, who emphasise the importance of using the special syringe designed by the former physician, which appears to us to offer decided advantages.

JAEGER SARDINES.

(THE JAEGER-SMEDSVIK CO., CHESTERFIELD HOUSE, 98, GREAT TOWER-STREET, LONDON, E.C.)

We have examined these sardines, which are of a particularly small type. The tin showed no sign of corrosion, and neither the oil nor the fishes showed any metallic contamination. The oil is correctly described as olive oil. The tins are solderless. The sardines had the peculiar appetising flavour characteristic of the good fish, which in oil is a very nutritious dainty.

POULTOGEN.

(THE POULTOGEN CO., 28, MARKET-STREET, MANCHESTER.)

Poultogen is a poultice made on lines indicated by modern practice. It consists of a stiff putty-coloured paste containing antiseptics, amongst which we recognised oil of wintergreen, boric and salicylic acids, an organic iodine compound, and pine oils. The powder basis is calcined silicious earth, the whole being amalgamated with the aid of anhydrous glycerine. It is obvious, in view of this account of it, that poultogen is both antiseptic and hygroscopic, two very important qualities of a poultice. Further, it has the property of retaining heat for a relatively long time. It is an excellent application when moist heat is required continuously.

THIOCOL.

(THE HOFFMANN-LA ROCHE CHEMICAL WORKS, LIMITED, 7 AND 8, IDOL-LANE, LONDON, E.C.)

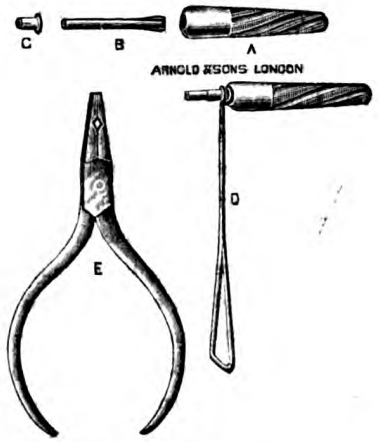
We have already reported upon thiocol, which is a convenient and active soluble guaiacol preparation. The tablets are now issued without the word "thiocol" stamped upon them, as it had been pointed out to the manufacturers that such stamping was sometimes inconvenient. Thiocol serves the purpose of a soluble creasote, and favourable accounts are given of it, chiefly in the treatment of pulmonary affections.

New Inventions.

A MODIFIED INSTRUMENT FOR THE PERFORMANCE OF THE OPERATION OF SIMPLE TREPHINING FOR THE RELIEF OF GLAUCOMA.

AN experience of over 400 trephinings has shown that many of the instruments for the purpose now on the market are imperfect. The best I have seen is that invented by Mr. Sydney Stephenson, and the guiding lines for the present model have been taken from that instrument. The new features presented are as follows:—

1. *The shape of the handle* (A).—In order to give the surgeon a good grip and to prevent his fingers from constantly slipping down as he presses, (1) the handle is made conical



with the apex of the blunt cone upwards; (2) the fluting is spiral in arrangement; and (3) the edges of the fluting are serrated at right angles to its length.

2. *The nature of the blades* (B).—These are made so that they can be used and thrown away as soon as they become blunt. The blades are made from solid drawn steel tubing. One end of each blade is divided into three parts and opened to form a spring; this when inserted into the handle holds the trephine firmly; the other end forms the cutting blade, and the edge is brought up sharp from the inside. This enables the operator to cut a hole the exact size of the trephine.

3. *The method of fitting the blades.*—A small pair of pincers (E) is supplied, with which the blade can be easily fitted into, or removed from, the handle. This should always be done at the time of operating. The blades must never be left in after use. The handle is hollowed throughout so that it can be easily and quickly cleaned and dried after use by means of a pipe cleaner (the best form being the Metropolitan pipe cleaner made in the United States of America, and sold by all tobacconists.) The bore of the proximal portion of the hollow is slightly less than that of the distal portion. This, whilst enabling the handle to be cleaned, at the same time prevents the blades from passing up more than the correct distance.

4. A stop (C) can be supplied which can be fitted to any of the blades.

5. *A small handle is provided* (D) with a loop at one end, through which the blades can be passed. This enables an operator to keep the cutting edge of his blade in one position during the operation, and is an improvement on the method of holding the blade with forceps.

The whole instrument is supplied in a small case by Messrs. Arnold and Sons, of Giltspur-street, London, E C, to whom I am much indebted for the assistance they have given me in working out the details of the instrument.

R. H. ELLIOT, Lieutenant-Colonel, I.M.S.
Government Ophthalmic Hospital, Madras.

THE LANCET.

LONDON: SATURDAY, FEBRUARY 3, 1912.

The National Insurance Act.

THE week in which we write has been a momentous one for the medical profession as far as our possible relations with the National Insurance Act are concerned. At the end of last week, as is more fully explained in another column, the National Insurance Commissioners invited various medical bodies to meet them at a conference to be held to-day (Friday), Feb. 2nd, to consider matters of procedure in bringing the Act into operation and make suggestions thereon. It was obvious to all the bodies concerned that the time given to them in which to make up their minds whether they would or would not attend the conference was entirely too short; there was no opportunity to consider what their representatives should say, and no chance of inviting the opinion of the different constituencies. It was seen at once that a body which refused to be represented might appear to wear the unfortunate air of being sulky, of being determined to lend no assistance to a group of officials endeavouring to do their best; on the other hand, any institution represented at the conference might be considered to have acquiesced in everything that took place, however impressive the necessary silence preserved by its delegates. (There are at the present moment scores of persons ready to say this sort of thing.) We are extremely glad to learn that on Tuesday afternoon at a Comitia of the Royal College of Physicians of London, it was decided that representatives of the College should not be sent to the conference, and we hope that the same will be the decision arrived at by the Council of the Royal College of Surgeons of England, a meeting of which body took place yesterday (Thursday) afternoon, with results which are not known to us as we go to press. Nor do we know what action will be taken by the General Medical Council. The Council of the British Medical Association have been placed in the same position as the two Royal Colleges by the early date suggested for the conference. A meeting of this Council was held on Wednesday afternoon, when it was eventually decided not to be represented at the conference, a decision which followed inevitably upon the fact that the next meeting of Representatives will not be held until Feb. 20th. The decision of the National Insurance Commissioners to hold this conference without giving proper opportunity to the medical profession of coming to any common decision as to what they might desire to recommend is in our opinion most unfortunate. If the Commissioners, instead of wishing to ascertain what is the collective medical opinion, had designed thoroughly to embarrass the leaders of the profession, they could hardly have taken a more apt course.

The suggestion that a Central Council should be formed by representatives of the great corporations, with a temporary mission to advise and support the profession in the present crisis, has met, we are glad to know, with very general approval, and certainly the circumstances which we have described above point strongly to the valuable work which such a Council might do. The Insurance Commissioners have expressed a desire to know what the views of the Royal Colleges are, and it is essential under the circumstances that the Colleges should be able to take a common line in any advice which they might wish to give to the Commissioners as much as in any support which they might be able to offer to the medical profession—and we may be certain that they will offer this willingly to those whose education has lain largely in their hands. Exactly the same words describes the position of the Society of Apothecaries of London. By far the greater part of the medical profession in England, whatever additional academic degrees they may have acquired, owe their places on the Medical Register to the possession of the Diplomas of the Royal College of Physicians of London, the Royal College of Surgeons of England, or the Society of Apothecaries of London, and the governing bodies of these three corporations cannot but feel that the present position of their diplomates is seriously affected by the medical provisions of the National Insurance Act, and that the *personnel* of their future adherents may be much altered in quantity or lowered in quality if those provisions remain the law of the land. If any such Central Council as has been suggested should come into being, the British Medical Association would probably be happy to assist its efforts and would certainly bring to the combination an element of great strength. It is unlucky that at the present moment the Council of the British Medical Association is to some extent on its trial, for the new advisory body would desire to start free from the factiousness which has so far interfered with the attempts of the medical profession to deal with the Act. But the moment that the British Medical Association is itself as a mass satisfied with its Council it is our opinion that the assistance of that Council should be sought, and that a common line of action should be taken against the existing medical provisions of the Act. Delay, reasonable delay, in the date of coming into operation of the Act should be demanded, during which time the position can be calmly reviewed. So far there is, with a very general dislike of the Act, a determination on the part of many thousands of practitioners not to work under it save with certain detailed safeguards. A successful strike would be deplorable in its public effects; a strike which failed would only be less dreadful in the loss of prestige that would result. A calm consideration of the regulations by a Central Council may avert grave disasters, and for this reasonable time is required.

Personality in Medical Teaching.

A CANDIDATE for the office of assistant physician or assistant surgeon to a great hospital, an office to the holder of which fine opportunities of teaching medicine or surgery to others must in due time be afforded, could perhaps produce no higher recommendation than evidence that, in the capacity of house physician or house surgeon, he had been able to secure a following of students when performing his duties in the wards; or, in other words, that he had rendered these duties interesting and instructive to bystanders, and had prevented them from degenerating into routine. The contemporaries of a great clinical teacher, when their memories go back to the earlier portions of his career, will seldom fail to recall as a characteristic of him that he possessed an exceptional power of directing his own and their attention to matters which at first sight were apparently of only subordinate significance, and of deriving from them important guidance in respect either of diagnosis or of treatment. For example, a whole generation of students at St. Bartholomew's Hospital will remember exactly these things of the late Sir HENRY BUTLIN, whose untimely death is recorded in our columns this week. To the perception of such a teacher few symptoms would be trivial and none would be negligible, while the positive value to be attached to each would only be determined by an analysis of the conditions attending or producing it. The consequent intellectual operations would be performed more rapidly and, so to speak, more instinctively as they became more and more habitual, until a condition might ultimately be attained in which they would seem to onlookers to be intuitive and to depend upon a degree of penetration which the average practitioner could scarcely hope to attain. We should hold, on the contrary, that this swiftness of operation, coupled with inclusiveness and accuracy, was but the due reward of diligence, habitually exercised upon matters which the negligent would have passed over as unworthy of their attention. It is, we believe, the power of grasping such matters which mainly constitutes the difference between the more and the less skilful practitioner, and it is the power of fruitfully directing attention to them which mainly constitutes the special qualification of the really great teacher. The methods of appeal to the senses of the learner may be almost infinitely various, but the principle underlying them is practically always the same. The teacher by example may apply some test which the learner would not at first have supposed to be called for in the conditions manifestly present—such, for instance, as an examination of the urine for albumin or for sugar in a case of defective vision; the Socratic questioner may guide his class to sound conclusions through inquiries which at first sight appear irrelevant; and the born demonstrator may point out the greater or less readiness of the abdominal muscles to assume a condition of protective rigidity, and may draw such inferences from the facts as they will justify. The principle that no discoverable condition should be suffered to escape notice, or should be omitted from consideration in the formation of a reasoned judgment upon the case, as it is that upon which the attainment of accuracy must depend, is also that which it is the first and most important duty of the teacher to inculcate.

The qualities of sense and of intellect which mainly contribute to the complete development of the accomplished clinical instructor are not always those which are of the highest importance to his colleague in the lecture-room, whose work is rather the inculcation of principles than the demonstration of facts, and whose main object should be to clothe those principles in language calculated at once to stamp them upon the memory and to render them clear to the intelligence. A good presence, an impressive manner, an agreeable voice, a perfect intonation, are all of them aids of high importance; but the most important of all is such a knowledge of the English language as may reduce the employment of technicalities to the lowest possible point, and may permit the construction of sentences which, in the terms of COBBETT'S famous description, should be "as clear as a pebbled brook," and "should not only not be liable to be misunderstood, but should not be capable of being misinterpreted." There are only a few now living who can remember how these conditions were fulfilled by those lectures of Sir THOMAS WATSON which furnished a text-book of medicine to two generations of practitioners, and which survive, although the progress of scientific discovery has gone far beyond them, as perpetual examples of the way in which it is possible to express the recondite in language of absolute lucidity, and to distinguish with precision between what is known and what is conjectural. No man who aspires to be a great, or even a good, teacher can take too much pains in the perfecting of his most essential weapon, language, or in the attainment of a power to draw a verbal picture which shall at once satisfy the intellects and impress the memories of his auditors. Nor can he be too careful to swim without corks, and to render it clear that his mastery of his subject needs no reinforcement from notes or references. Most of us have dismal recollection of lecturers at our medical schools, who sat opposite to the class with the head well down, reading aloud in a dreary monotone from the proof sheets of a forthcoming treatise. The true lecturer should lose no opportunity of placing himself *en rapport* with his audience, and he may often do this most successfully by selecting some single member of it, and by pressing his point home until an answering intelligence in the face of the special hearer shows that, in one instance at least, the end desired has been attained. The average student, even if he be not of the highest order of industry or of capacity, is prompt to recognise and to admire knowledge in his teachers; and those who would teach him efficiently should regard as a first duty the fulfilment of his reasonable expectations in this respect. They should make it abundantly manifest, alike in the wards and in the lecture

room, that they have carried their own studies to a point which he is not yet prepared to reach.

DUGALD STEWART once pointed out that the possession of a perfect English style, in which it seemed as if every word used was the only one which could have been selected for that particular place, or to express that particular shade of meaning, was apt to induce the careless reader to suppose that he also could write in a similar manner; and, as all things have the defects of their qualities, it is perhaps conceivable that the best possible lecturing and clinical teaching may sometimes lead the student to underestimate the difficulties of the pursuit in which he is engaged, and to aim at results by shorter roads than those which alone render them attainable. The almost intuitive perception of a thoroughly trained observer may induce a student to strive after rapidity of diagnosis by a hasty glance at the salient, and possibly misleading, features of the case, and in this way to attain nothing but a lamentable facility for jumping from insufficient data to erroneous conclusions—conclusions to which the person so framing them will be only too likely to adhere until it is too late to rectify the consequences of his error. A teacher can hardly be too much upon his guard in striving to protect his pupils against this particular source of error, and in impressing upon them the necessity of neglecting no method of inquiry by which light may possibly be thrown upon any of the conditions of a case which admits of doubt. Under the operation of the new Insurance Act, under whatever shape it may be brought into operation, and under whatever terms medical men may be found who will work according to its provisions, the profession will be confronted with very serious questions concerning the validity of the claims put forward for relief on account of illness, and will in all probability be compelled to take the occurrence of systematic malingering into serious account. It is notorious that the recent enactments for affording compensation for injuries received during employment have definitely lengthened the average time of consequent disablement; and it is not necessary to regard the whole of this effect as a result of deliberate imposture. But, as Mr. FRANK MILTON said in our columns last week, "it is difficult to avoid coming to the conclusion that the benefits to be obtained under the Workmen's Compensation Act have had a distinct tendency towards increasing the number of cases of accident applying for treatment." This increase is partly due, no doubt, merely to the fact that the compensated man is in no hurry to return to his occupation. In the future, however, a large element of malingering is likely to come under the notice of medical men, and to derive importance from the fact that it will be at least as necessary to protect the honest claimant as to expose the dishonest one. The medical and surgical teachers of the near future may not improbably be faced with the new duty of preparing their pupils, in a great number of obscure or doubtful cases, to hold an even balance between the patient and the State; and upon their success in this endeavour will largely depend the success of any system of general insurance against sickness, however sound its financial basis.

Tenure of Office of Medical Officers of Health.

ALTHOUGH the conditions of appointment of medical officers of health in the provinces have been considerably improved by the terms of the General Order of the Local Government Board of Dec. 13th, 1910, they are still far from satisfactory. Until the end of 1910 medical officers of health in England and Wales, except those appointed by the metropolitan borough councils and by county councils, could be, and usually were, appointed by local authorities for limited periods, usually of one year. At the expiration of the period of appointment there was no obligation on the part of the authority to re-appoint, and no intimation was required to be given to the medical officer of health that he would not be re-appointed. The order of Dec. 13th has enabled a local authority to make an appointment without limit of time, in which case the officer appointed holds office until he dies or resigns, or is removed by the electing authority with the consent of the Local Government Board, or is removed by the Board itself, or is proved to be insane. That is to say, his tenure of office is similar to that of a Poor-law district medical officer who resides within his district. The appointment of medical officer of health may, however, still be made for a specified period, but at the expiration of that period the appointment is held on a yearly tenure, the local authority having power to give three months' notice of its termination, provided the notice expires at the same period of the year as that at which the original term expired. The assent of the Local Government Board is not necessary to make this notice a valid one, but in one or two instances, where there does not appear to have been adequate reason for such dismissal, the Board has intimated that it would not be prepared to sanction the appointment of a successor, with a view to the refunding of a moiety of the officer's salary from the Exchequer grants. This course was adopted in the case of the Claypole rural district council, who called upon the medical officer of health, who had held office for some years, to resign for what, in the opinion of the Board, were insufficient reasons. The ratepayers of the district are now, therefore, paying the whole of the salary of the newly appointed medical officer of health. If the Board will continue this policy the position of medical officers of health will be materially improved, though it would be still better if they were placed in the more secure position occupied by all Scottish medical officers of health and by those who hold office in London and under the county councils.

FORTY-FIRST CONGRESS OF THE GERMAN SURGICAL SOCIETY.—This congress will take place from April 10th to 13th, 1912, at Berlin. As the space in the Langenbeckhaus, which has been resorted to on former occasions, has been found too small, the committee of the society has for this year's meeting hired the Beethoven Saal der Philharmonie, Berlin (entrance, 32, Köthener Strasse). The congress will be opened on the first day at 10 A.M., and on the other days the hours of business will be from 9 to 12.30 and from 2 to 4. The president for 1912 is Geh. Med.-Rat. Professor Carl Garrè, of Bonn. Cards of membership and all particulars may be obtained from Herr Melzer, Langenbeckhaus, Ziegelstrasse, 10/11, Berlin, N.24.

Annotations.

"Ne quid nimis."

THE RHODES SCHOLARS AND THEIR CAREERS.

THE annual statement of the Rhodes Trustees—describing the work achieved under the trust in sending scholars to Oxford from the colonies, Germany, and the United States—is already an interesting document now that definite results are beginning to be ascertainable, and the statistics which it contains will increase in importance as time passes. In 20 or 30 years, when the promising young men of to-day are in a position to have their life-work scrutinised, and when the educational antecedents of those who then are occupying leading positions in statecraft and diplomacy, in the professions of science and law, in commerce, or in the world of action and adventure are inquired into and criticised, the dispositions of the will of Cecil Rhodes will come up for judgment after a verdict has been found upon proven facts. At present we are watching the development of the experiment of sending to be educated at Oxford nearly 200 students at a time (there were 176 Rhodes scholars on the books in 1910–11) who, but for the intervention of a great and original minded Englishman, would never have gone there except possibly upon brief visits as more or less intelligent tourists. Up to now they have worked with varying degrees of intellectual distinction, their list of honours during the past 12 months recording but few first classes, seconds and thirds being more conspicuous, numerically. Not the least interesting part of the experiment, it must be remembered in this connexion, is the consideration of physical and athletic excellence as well as of intellectual qualifications imposed by the will of the founder upon those who select the beneficiaries under it. The interest, of course, lies not in studying the athletic performances of Rhodes scholars at Oxford, but in watching the effect of special cultivation upon intellectual plants selected with equal regard for the *corpus sanum* and the *mens sana*, a condition of choice which obviously places some restriction upon merely academic results. At present Rhodes scholars appear by their choice of professions to suggest that the exercise of useful influences may be expected of them rather more than conspicuous intervention in the economy of the world. Out of 250 who had done with Oxford and made their first choice in the matter of professions at the beginning of 1910, 84 had selected educational work, 66 the law, and 19 religious callings. Educational work with the prestige conferred by an Oxford degree opens, no doubt, a tempting path to immediate independence, and both the law and education are careers which may be abandoned, or which lead to high distinction within their own limits, but the numbers given above leave but a restricted number for entry into science, medicine, engineering, the civil service, diplomacy, commerce, and the other avenues of distinction open to a class of picked youths who have enjoyed exceptional educational advantages. In the future of those who enter the medical profession we naturally take a keen interest. There are 11 of these among the 250 to whom reference has been made, and we look forward to seeing the proportion increased, to the advantage of the medical profession and its patients, using these terms in their widest sense. Science recognises no territorial limitations, and the bond of a common struggle against disease and human suffering will be strengthened by early friendships and by the sympathetic comradeship of men working thousands of miles apart who have drawn their first instruction from the same source and inherited the same honourable traditions.

THE CAMPAIGN AGAINST TUBERCULOSIS IN ITALY.

WE have received a copy of the journal *La Tubercolosi* for November–December, which is published monthly at Rome as the official journal of the organising committee of the Seventh International Congress against Tuberculosis meeting at Rome from April 14th to the 20th of this year. The subject-matter is printed in Italian, French, German, and English. Forms of application for membership of the Congress, and information in regard to reduction in rates of travel to the Congress, are included with this number. There is also an interesting *résumé* of the measures in force and those in preparation to combat tuberculous disease in various parts of Italy. It would appear that hitherto more attention has been paid to general hygienic reforms and to the moral and economic elevation of the working classes than to the actual provision of sanatoriums. In general these reforms may be summed up as endeavours to raise wages, the provision of insurance against accidents, and of legislation against diseases caused by conditions of labour, and measures to secure better housing. Concessions are granted by the Italian Legislature to certain coöperative societies, mutual benefit societies, charitable institutions, corporate bodies, and local authorities to further cheap and satisfactory housing. Regulations are in force for the construction and sale of such buildings and for the expropriation of areas for hygienic reasons. Facilities for loans are also offered. Recently a new board has been constituted in many Italian cities called the Independent Board for the Cheap Housing of the People. It is supported by contributions from municipal bodies, the savings banks, benefit and loan societies, and from other societies and private individuals. The provision of sanatoriums is also being actively pushed forward, and a list of these, with a brief description of their scope and accommodation, is included in the article to which we refer. Various tuberculosis dispensaries, modelled on those now general in most countries, have been started, and are engaged in the prophylaxis and treatment of the disease. A central alliance of all the agencies at work has recently been inaugurated by Professor Guido Baccelli, Professor Rossi-Doria, and Professor Tamburini. Its objects are the coördination of the various societies and agencies at present engaged in the work of combat against tuberculous disease and to awake public interest in the subject. We have read the article with interest, as it shows that the Italians are fully aware of the importance of this subject to the national welfare, and are actively engaged in work with this object in view. The session of the Congress should serve a useful purpose in directing public attention to these matters and in aiding the authorities in their work.

SALT IN POTABLE WATERS.

THE amount of sodium chloride found in potable waters rarely exceeds 5 grains per gallon, but there are certain exceptions, the most notable of which are in the county of Essex, where the water derived from the Thanet sand and from the chalk below contains considerable quantities, not only of salt, but of sodium carbonate. Over a large area the salt averages 50 grains per gallon and the sodium carbonate 20 grains, and over a more limited area the salt increases to 80 grains and upwards per gallon. The sodium carbonate, however, does not increase in the same proportion. The origin of these saline constituents has given rise to much speculation amongst chemists and geologists, but it is accounted for by the researches of Dr. J. C. Thresh, county medical officer of Essex, who, in an article which is published on p. 315, shows that they are derived from an admixture of sea water and chalk water altered by percolation through

the Thanet sand. The sodium chloride derived from the sea water remains unchanged, whilst the calcium carbonate of the chalk water is converted into sodium carbonate. That thousands of persons near London use for drinking and all domestic purposes a water containing over 50 grains of salt per gallon will cause general surprise, but Dr. Thresh's studies of the sickness statistics of the districts in question show that they are amongst the healthiest in the county, and as the county mortality rates are generally the lowest, or very nearly the lowest, of all the counties in England and Wales, it is clear that the use of such water has no appreciable effect upon the health of those who habitually drink it. During the last few years the difficulties experienced in obtaining water-supplies for large villages in the north-east portion of the county of Essex have raised the question whether a water of the above character containing 80 grains of salt per gallon will be objectionable for domestic purposes. Farms and cottages dotted over the area are supplied with such water from deep wells, and strangers, after getting accustomed to the flavour, do not object to it, while all who use it consider it to be perfectly wholesome. The only available sources of supply for the villages referred to appear to yield water of this character, and Dr. Thresh has been compelled to express an opinion and has decided that the water is wholesome and may be used with impunity. His opinion is based exclusively upon his Essex experience, no other being apparently available. At various times scurvy and other diseases have been attributed to the excessive consumption of salted food, and in the *Indian Medical Record*, April, 1911, a list is given of the evils arising from "undue salt eating," but there is no definition of an undue amount. There is no doubt from the experience in Essex that 50 grains of salt per gallon of water is perfectly harmless, and some evidence that even much larger amounts have no ill-effects, but it is desirable that this evidence should be further supported before expending thousands of pounds upon works to supply whole communities with waters of this character.

THE PROPAGATION OF PLAGUE WITHOUT THE AID OF INFECTED RATS.

WE have received from Dr. Choksy, of Bombay, a well-known authority on plague, a letter, which appears on another page, adverting to an article published in THE LANCET of Dec. 16th, 1911, p. 1714, entitled, "The Propagation of Plague without the Aid of Infected Rats." While agreeing in the main with our conclusions, which were based upon the circumstances of the late disastrous epidemic of pneumonic plague which swept across Manchuria during the winter months of 1910–11, Dr. Choksy contends that attacks of secondary pneumonia arising in bubonic cases, though theoretically potential sources of infection to those in contact with them, do not, as a matter of experience, cause infection of these persons; and that if any of those in contact with such cases do contract plague it must occur through the agency of rat fleas. In a brochure on "The Various Types of Plague and their Clinical Manifestations" which Dr. Choksy has forwarded to us, he has set out clearly the dangers arising from primary pneumonic plague. This type, he says, is the most insidious and virulent form of the disease, and at the same time highly infectious; it is usually contracted by the inhalation of the fine spray of the patient's sputum which teems with B. pestis. He also points out in his pamphlet that an apparent primary pneumonia "may not really be so, but a secondary development of malignant infection, with deep-seated buboes not felt during life-time, and early septicæmia." These instances, though pneumonic, have not in Dr. Choksy's experience proved infectious to those around the patients. It has, however, to be remembered that cases treated in well-constructed and well-administered hospitals such as those under Dr. Choksy's charge in Bombay are on a different footing from those occurring in dirty and ill-ventilated hovels. In the Manchurian epidemic, which spread so rapidly, it is surmised that some of the earlier cases of plague among the tarabagan trappers were treated in overcrowded and unventilated huts or tents, where the virulence of the infection might have become exalted, and the natural resistance of the occupants greatly reduced. It is worth mentioning in this connexion that the form of plague which frequently appears among the Mongols and other tribes in Central Asia, as well as among nomadic folk generally, is said to be nearly always of the pneumonic type, and that it is excessively fatal. This has been attributed to the extremely insanitary conditions under which these people mostly live. Their homes, as well as their persons, are described as being habitually dirty. They do not wash even their faces for many months on a stretch, and they wear their dirt-sodden clothing day and night, year after year, until the garments literally rot upon their backs. The occurrence of a secondary pneumonia in a case of plague treated under similar conditions would, in our opinion, be likely to lead to infection of persons in close proximity to the sufferer; and if a combination of circumstances arose, such as those which were met with in Manchuria in 1910–11, affording a sufficient supply of susceptible human material, a virulent and swiftly spreading epidemic might be originated. The Advisory Committee for the Investigation of Plague in India appear to regard secondary pneumonia as a possible source of danger, for one of the members of that body not long ago in a public address on plague made the following statement: "The universal experience in India has been that bubonic plague, whether it has become septicæmic or not, is for practical purposes not infective, unless it develops a secondary pneumonia."

THE FINGER PHENOMENON: A NEW SIGN OF ORGANIC HEMIPLEGIA.

SINCE Babinski discovered his invaluable sign of organic disease of the pyramidal tract several observers have described other reflex manifestations in the lower limb, but the upper limb has received comparatively little attention, and no sign comparable to the toe phenomenon has been described. In the majority of cases there is no difficulty in recognising an isolated monoplegia of cerebral origin or a paralysis of the arm accompanying hemiplegia, yet at times cases are seen in which the diagnosis between functional and organic paralysis of the upper limb is difficult. Again, in a small group of cases of hemiplegia dating from infancy the paralysed limbs or one of them (the upper) may be free from spasticity, and old anterior poliomyelitis may be suggested. If the lower limb has greatly improved or been only slightly involved the difficulty of diagnosis may be great. In the *Journal of the American Medical Association* of Nov. 11th, 1911, Dr. Alfred Gordon has described a new sign of organic hemiplegia, which he terms "the finger phenomenon" and which may be useful under these circumstances. The forearm of the affected limb is elevated and the elbow placed on a table. The wrist is then lightly grasped by the examiner's hand with the thumb against the pisiform bone and the other fingers on the dorsum of the wrist. Pressure is made with the thumb against the pisiform bone, especially on its radial side, care being taken not to produce pressure on the dorsum of the wrist where the extensor muscles are located. In organic hemiplegia the fingers of the patient's hand are seen to extend and sometimes to spread out in a

fan-like form. In some cases extension is observed only in the fourth and fifth fingers; in others all five extend, and in still others the thumb and the next two fingers. In old hemiplegia in which contracture is pronounced the phenomenon is not very marked, and may not be obtained. In recent hemiplegia (under six months) the reflex was usually prompt, but in some cases was elicited only after making two or three tests. As controls normal persons and patients suffering from brachial palsy of poliomyelitic and hysterical origin were examined.

THE NEW FATS.

IT is not so very long ago that the fatty substances essential in the human dietary were derived almost exclusively from an animal source. Beef, mutton, pork, milk, butter, or cream practically supplied the fatty needs of the body. The only vegetable fat hitherto consumed in important quantities was olive oil. It use, however, was generally limited to the salad, and not a few people prefer the salad without the addition of oil. Cod-liver oil, the most familiar example of a fish oil, was used medicinally because it was regarded to be readily assimilated, and so was held to be a certain and rapid source of energy. The important question of the digestibility of fats appears to have received attention chiefly in regard to animal fats. In physiological literature, at all events, it is difficult to find any definite conclusions as to the digestibility of vegetable fats, and yet the matter is of increasing importance, seeing how rapidly vegetable fats are being introduced into our daily articles of diet. The introduction of butter substitutes in the "seventies" created an opening for vegetable fats, and the industry in these fats is growing enormously at the present time. Margarine at first consisted of beef fat churned with milk and coloured, but now a very wide range of vegetable fats is available for making part, at any rate, of this butter substitute. There is a very large trade in sesame oil, cocoa-nut oil, palm-kernel oil, arachis oil, cotton-seed oil, sunflower oil, maize oil, poppy oil, and a number of other vegetable oils, all of which are destined for human consumption, chiefly in the form of butter substitutes. We are constantly told that these are wholesome, but occasionally it has happened that in the race for cheap sources a poisonous oil has been found and actually used in making a butter substitute, while several nut oils are known to have marked purgative properties. The time has arrived, we think, when the broad question of the suitability of vegetable fats, such as those just mentioned, for purposes of human consumption, compared with animal fats, should be thoroughly investigated and discussed. It is generally admitted that butter is the most digestible edible fat we possess, and if that is the case something should be done to ascertain whether the use of one or any of the vegetable fats as substitutes, on the enormous scale of the present day, is justified on sound physiological premises.

DIAGNOSIS OF ENTERIC FEVER BY CONJUNCTIVAL INSTILLATION.

AT first sight it would seem superfluous to search for a diagnostic test of typhoid fever; the Widal reaction is easily made, and the margin of error is small. It fails, however, in one respect, and that an important one in the case of typhoid fever; it is not likely to be positive until the disease is well on in its course. To meet this objection Chantemesse in 1907 applied the principle of Calmette's ophthalmo-reaction for the diagnosis of tuberculosis to typhoid fever and found it reliable. In the hands of other investigators, however, the test proved not quite so certain as its author's reports had suggested. A possible explanation of this variability is supplied by Dr. Charles R. Austrian, who reports his experiences of the test in the *Johns Hopkins Hospital Bulletin* for January, 1912. His earlier applications of this method of diagnosis led him to think that the negative results which he encountered in cases of undoubted typhoid fever might be due to variations in the strain of the infecting bacilli. To meet this objection he prepared the emulsion, to be used for instillation into the conjunctival sac, from 80 different strains of typhoid bacilli. The results obtained were encouraging; a positive reaction developed in 71 out of 75 patients with typhoid fever, while in 190 control cases (patients suffering from other diseases than typhoid fever) a reaction was seen only twice, in both instances this occurring in patients who had had typhoid fever previously. To carry out the test fresh preparations should be used; the patient should turn the head to the left if the right eye is selected; the lower lid should be partially everted, and one drop instilled into the lower conjunctival sac so that it runs towards the inner canthus. Immediate closure of the lids must be prevented, and the eye must not be rubbed. A positive reaction consists in congestion of the vessels of the caruncle and of the inferior palpebral conjunctiva, which reaches its maximum in six to ten hours (the membrane becoming deep purple), and persists for at least 20 hours, with lacrymation, purulent exudation, and bulbar suffusion. Atypical reactions may develop in non-typhoid cases, but these are more diffuse and less enduring. According to Dr. Austrian there is no difficulty in distinguishing between the two types. He believes that this reaction is similar to that devised by Calmette for the diagnosis of tuberculosis, in that it is the outcome of sensitisation of the patient's tissues to the toxins of the specific organism, and he makes the interesting suggestion that atypical responses occurring in non-typhoid persons are due to "group-sensitisation"—i.e., to sensitisation of the tissues to typhoid toxin by the action of the toxins of allied bacteria, such as B. coli communis. Perhaps the most important claim made for this method of diagnosis is the early stage of the disease at which a positive reaction is to be anticipated; in 18 out of 19 cases examined during the first week a positive result was obtained, and in 77 per cent. of the cases which reacted to the ophthalmic test the Widal reaction, applied at the same time, was negative. It should be added that there were no untoward or uncomfortable consequences.

INSANITARY BERTHS IN THE MERCHANT SERVICE.

THE Imperial Merchant Service Guild, consisting of captains and officers, is doing a good and a very necessary work by bringing pressure to bear upon the Board of Trade so as to secure better sanitation on board merchant ships. The agitation to which the late Mr. Plimsoll, "the sailor's friend," devoted his life was heartily supported by the general public, and something was done to prevent seamen sailing in "coffin ships." But a ship may be a coffin ship without sinking to the bottom of the sea. Bad sanitation may produce fatal results just as easily as a shipwreck. Thus, for instance, we have before us a letter addressed by an officer to the company he was serving and explaining why he is compelled to resign. His story runs as follows. When, as was frequently the case, the vessel shipped a sea the water would come through under the door into his private cabin, having first scoured out the adjoining lavatories and closets. These closets were divided off from the officers' quarters by a wooden partition which was neither water-tight nor air-tight, so that it did not prevent the unpleasant odours from penetrating the officers' berths, and they were frequented by 14 men. The Imperial Merchant

Service Guild urges that officers are entitled to separate cabins with sufficient room and adequate equipment, and the cabins should be situated in a part of the ship where proper rest and relaxation can be enjoyed. Officers' cabins at present are often very small, and two or three officers are made to share this insufficient accommodation. Then they are not only overcrowded, but at times are absolutely insanitary, as in the case mentioned above. If such conditions exist in regard to the officers, what must the quarters inhabited by the seamen and firemen be like? Some evidence as to the prevalence of pulmonary tuberculosis in the Merchant Service was given in a paper by Dr. Murdoch MacKinnon in THE LANCET last autumn.[1] This paper showed how great are the permanent disablement and loss of life from a preventable disease. From time to time also we have described the very unsatisfactory state of affairs that prevails at sea,[2] and lamented that it has been left to France, Austria, and other nations to enact laws that secured for their seafaring population much better sanitary conditions than prevail in the British Merchant navy. This is a question on which officers and men might well unite, and they should claim conditions at least equal to those which continental governments enforce in their merchant navies.

PELLAGRA IN NYASALAND.

PELLAGRA is a disease which, if practically unknown except by name to the profession at home, has within recent years more or less suddenly become of pressing importance from the epidemiological and other points of view. It is true that only two cases, apparently, have been reported in this country, but in America during the last few years there has been a prolonged and severe epidemic, which has ravaged more particularly the Southern States, neither white nor black being exempt, and in which many hundreds, if not thousands, of cases have occurred. Perhaps the term epidemic is rather inaccurate in this connexion, for the question which has agitated the profession in America, and which was one of the subjects of discussion at the Pellagra Conference in N. Carolina, is, how far can the appearance of the disease be said to be due to fresh introduction or extension, and how far simply to increased facility in recognising the affection? In the case of the recent disastrous American outbreak probably both factors are implicated. Pellagra is endemic in the Southern states of Europe, in Italy, Roumania, Bulgaria, and so on. It occurs in the same way in Lower Egypt, Algiers and the Red Sea Littoral. At a recent meeting of the Society of Tropical Medicine and Hygiene Dr. Hugh S. Stannus, one of the medical officers of the British Central Africa Protectorate, read an important paper on the occurrence of pellagra in Nyasaland, where hitherto the disease has not been known or at least not been recognised. Dr. Stannus, while acting as medical officer to the central native prison at Zomba, was struck by the appearance in certain inmates of a rhagades-like soreness at the corners of the mouth, associated with changes on the surface of the tongue, with the subsequent development of symmetrical skin eruptions on face and neck and elsewhere, and also with the development, at a later stage, of paretic symptoms. It was not until the whole cycle of symptoms had established itself that Dr. Stannus was convinced he was dealing with an outbreak of pellagra. There can be no doubt, from the description which he supplies, that the disease occurs in Nyasaland in typical and easily recognisable form. Apparently there is a seasonal maximum in April and October. The earliest symptoms are this rhagades-like condition at the muco-cutaneous borders of the angles of the mouth, a similar condition at the free margin of the prepuce, and a curious glossitis which denudes he tongue of epithelium and renders it shining and bright pink in colour. Then appears the characteristic skin eruption, as a rule on the extensor surfaces of the forearms, in the triangles of the neck, on cheeks, nose, and forehead, on the back of the hands, on the shins, and the dorsum of the feet. The eruption preserves a remarkable bilateral symmetry. Gastro-intestinal and other general symptoms often occur in the early stages. Of great interest and pathogenic significance are the phenomena indicative of invasion of the nervous system. Headache, mental apathy, and moroseness are specially noted by Dr. Stannus. There is commonly a sadness of facial expression and an inability or unwillingness to smile which are almost pathognomonic. Cranial nerve symptoms, in the shape of transient amblyopia, central scotomata, loss of sphincter tone in the iris, and deafness may occur. Paresis or paralysis of the lower extremities is common, tremor of the limbs is the same, subjective sensory phenomena are also very frequent, consisting of tingling and burning pains in the feet, toes, and calves, often associated with tenderness of the latter on pressure. The organic sphincters are not impaired in function. There can be little doubt that pellagra is a toxæmia affecting more particularly the central and peripheral nervous system, rendering the skin more liable to irritation by the sun's rays, and recurring in successive years in a chronic form, but its pathology, epidemiology, and etiology are still to be elucidated. Dr. Stannus suggests that the nervous lesions are produced by a toxin entering the spinal theca by the lymphatic spaces of the posterior roots, setting up a posterior lepto-meningitis and then invading the cord. The disease presents suggestive resemblances, especially in symptoms, to certain well-known nervous diseases, on the etiology of which, therefore, it may some day prove by analogy to shed light. In view of certain current opinions as to the causation of the disease, it is noteworthy that Dr. Stannus's cases only rarely had maize as an article of food; their staple diet consisted of rice. There is reason to suppose that pellagra may be associated with the occurrence of flies of the simuliidæ family, whose habitat is in the neighbourhood of running streams. It is to be hoped that Dr. Stannus's suggestive paper will be provocative of further investigation into the subject of pellagra, as the disease is one, as above remarked, of singular interest, whose recent expansion is a fact of serious import.

ADUMBRATIONS OF ANTISEPSIS.

ABOUT a century before the great discoveries of Pasteur and Lister it is curious to find William Alexander, an Edinburgh surgeon, discussing the animalcular origin of putrefaction and putrid, or, as we should now say, septic, diseases, and dismissing as untenable what he supposes to be a theory founded on inaccurately conducted experiments. The believers in the rejected theory included such names as those of Plenciz, Linnaeus, Buffon, Needham, Robert Boyle, and Athanasius Kircher, a Jesuit of universal learning, who, in 1658, published "Scrutinium Physico-medicum Pestis, Origo, Causæ, Prognostica," &c., a work in which the plague is attributed to what for lack of a better phrase we must call "a bacterial origin." But though in 1771 Alexander will have nothing to do with what has since triumphantly developed into the germ theory of disease, he nevertheless speculates and acts almost as though the theory were already an accepted dogma. Thus in one of his "Experimental Essays," published in 1768, three years

[1] THE LANCET, Sept. 23rd, 1911, p. 885.
[2] THE LANCET, Feb. 8th, 1908, p. 457, March 27th, 1909, p. 945, and Sept. 17th, 1910, p. 880.

earlier than his work inquiring into the origin of putrid diseases, under the title "Essay on the External Application of Antiseptics," he resembles a child playing at hide-and-seek and growing decidedly "warm." His approximation to certain truths, which, as a rule, it is supposed, are entirely modern, appears in such a passage as the following: "Sir John Pringle, as far as I know, was the first who attempted to sweeten putrid flesh by immersing it in antiseptics. Dr. Macbride [another Edinburgh surgeon who published just prior to Alexander] has improved his hints ..... by suspending it in the steams which arose from them. It has been an established fact these many years that poultices of bark or spirituous antiseptic fomentations, applied to gangrened parts, have very much contributed to recover them." We are here within an ace of the treatment of wounds by antisepsis. In the succeeding passage we find ventilation insisted on in an age supposed to be peculiarly careless in the conduct of the sick-room. "At present almost every practitioner who attends the sick in putrid diseases orders the room to be ventilated, washed with vinegar, or fumigated with aromatics; and what are all these but so many methods of applying antiseptics externally? I am persuaded that if we had reasoned fairly upon them they would have served as so many leading hints to have discovered that a human body may be sweetened and recovered from putrefaction by being bathed in antiseptics as well as a part of any other animal." Though rejecting the animalcular theory Alexander plainly recognises that putrid diseases are caused by what he calls "putrid particles," and he argues that evacuants are useless as a means of treatment. "Were we to proceed entirely by the evacuatory method, so long as we left one particle it would still be an infected one."

LIFE INSURANCE IN INDIA.

WE have received a copy of a paper read before the Life Assurance Medical Officers' Association on behalf of Dr. Adrian Caddy, surgeon to the Hindu Marwari Hospital, Calcutta, on life insurance in India. Some interesting points are brought forward which indicate the differences between those individuals presenting themselves for examination for life insurance in this country and those who are examined in India. In regard to the native lives Dr. Caddy finds that the native is usually a shorter man than the European, that height for height the native weighs the same on an average as the European, and that there is no evidence to show that his tissues are any lighter than those of a European. The native is very subject to glycosuria, due probably to his carbohydrate diet; he is also liable to develop hydrocele, but the reason for this is not evident. Dr. Caddy is of opinion that opium and hemp drugs are not commonly consumed by the insuring classes. With regard to Europeans, Dr. Caddy offers some interesting suggestions, but he points out that they are the results of his own inquiries, and must only be taken as such. He maintains that Europeans do not acclimatise in the tropics, and submits as a proof of this statement the inability to withstand the tropical sun without any head covering, and after years of residence in hot climates there seems to be a greater liability to sunstroke than on arrival. He further contends that the children of Europeans who have been sent "home" when 4 or 5 years old for their education are generally not so fine physically as their parents, owing to the debilitating influence on their constitutions of the tropical climate at an important growing period of their lives. He also thinks that it is a mistake for parents who have lived in India to send their children when grown up to that country to earn their livelihood; this, however, is very commonly done, but Dr. Caddy believes that it leads to physical degeneration. All these are points which would have an important bearing in arriving at conclusions as regards the rating to be advised on candidates presenting themselves for examination for life assurance. But little, we believe, has been written on life assurance in India, and therefore Dr. Caddy's remarks are particularly worthy of attention.

FOUR lectures on Sleeping Sickness will be delivered at the City of London School, Victoria Embankment, by Dr. F. M. Sandwith, Gresham professor of physic, on Tuesday, Wednesday, Thursday, and Friday, Feb. 13th–16th, at 6 P.M. The lectures are free to the public.

THE ORIGIN AND WHOLESOMENESS OF THE SALINE WATERS IN THE LONDON BASIN.

BY JOHN C. THRESH, M.D. VICT., D.SC. LOND.,
MEDICAL OFFICER OF HEALTH, ESSEX COUNTY COUNCIL; LECTURER ON PUBLIC HEALTH, LONDON HOSPITAL MEDICAL COLLEGE.

THE waters derived from the chalk and Thanet sands under south-eastern Essex, London, and other places are characterised by their great softness and by the presence of considerable quantities of sodium chloride, sodium sulphate, and sodium carbonate. The proportions of these salts vary considerably, and in some cases, as, for example, near the coast from Harwich down to Foulness Island, and near the Thames at Barking, the Isle of Dogs, &c., the water shows undoubtedly the effect of tidal water infiltration. For years past I have been engaged in investigating the origin of the saline constituents of these potable waters and in plotting the various sources on the map and tracing the chalk water from the north-west of Essex and the very saline and brackish water from the north-east. I surmised that these waters mingled in their course south towards London, and that in some way, whilst travelling, the lime salts disappeared and were replaced by soda salts. This is not the place to record my experiments, but the results are simple and conclusive. The alkaline saline London Basin water is a mixture of chalk water with a small quantity of sea water, which by filtration through the Thanet sand undergoes a marvellous change. This change can be effected in the laboratory, but to completely remove all the lime salts in a short time it is first necessary to treat the sand either with dilute acid or with brine. After either treatment mere filtration of a mixture of sea water and chalk water converts it into a water typical of that in the London Basin. One such result may be recorded as an example, and the mixture contained, purposely, an excessive quantity of sea water. As a typical chalk water, that from the water-works at Halstead on the north border of the chalk outcrop was selected, and this was mixed with 3 per cent. of sea water from Clacton-on-Sea. A portion was analysed and the remainder simply filtered through six inches of Thanet sand which had been washed with brine and then with distilled water. The filtrate was collected and examined.

Analysis of Mixed Chalk Water and Sea Water.
(*In parts per 100,000.*)

	Before filtration through Thanet sand.	After filtration.
Total hardness	50·0 deg.	0·5 deg.
Free ammonia	0·002	0·105
Organic ammonia	0·004	0·009
Calcium carbonate	25·25	1·0
Magnesium carbonate ...	2·45	0·0
Magnesium sulphate	12·30	0·0
Magnesium chloride	6·65	0·0
Sodium carbonate	9·0	31·85
Sodium sulphate...	0·0	16·30
Sodium chloride...	113·1	126·2
Silica, &c.	1·35	2·65
Total solids...	161·10	178·0

Using smaller quantities of sea water, it is possible to produce waters practically identical with the water from any deep well in the London Basin.

To make the proof conclusive it was argued that if these salts came from sea water they would be associated with bromides found in all tidal waters. This proved to be the case and led to an interesting investigation, not yet completed, on the detection of various compounds of iodine and bromine in sea water and other saline waters. Here it is sufficient to state that when proper precautions are taken bromides can be detected in all these waters, and iodides have been detected in those specially examined for that purpose. The quantity found, however, is exceedingly minute and most easily overlooked. Incidentally the source of the ammonia found in these deep well waters is also demonstrated. It is produced by the reduction of nitrates by the ferruginous sand.

Of the wholesomeness of such of these waters as are used for public supplies at Southend, Colchester, Witham, Chelmsford, and other places there appears to be no doubt, but near the coast in certain parts of Essex the only deep well water obtainable resembles that the analysis of which is given above, and which contains 70 grains and upwards of common salt per gallon. So far these waters have only been used for supplying farms or a few cottages, and when such a water has been obtained in boring to obtain a public supply it has been unhesitatingly condemned as being unsuitable for the purpose. Fifty grains of salt to a gallon of water imparts a saline taste perceptible to many people, and when the amount is increased to 70 grains everyone can detect it. The comparatively few people I have been able to interrogate acknowledge that at first they would not have used the water for drinking purposes if they could have obtained any other, but that they soon became accustomed to it and like it, and have never experienced any ill-effect which could be attributed to its use.

The subject has recently assumed greater importance since it is now proposed to utilise such a saline water as a supply for a population of several thousands. I have suggested mixing it with an equal volume of spring water or subsoil water, but unfortunately a sufficient quantity of a sufficiently good water does not appear to be available for the purpose. The water in question contains about 85 grains of salt per gallon, so that assuming each person drinks three pints per diem, each would imbibe 31 grains of salt. Many wild and random statements are made about the injurious effects of salt, but no proof seems to be adduced that its continued use in moderate quantities has produced illness of any kind. In Essex thousands of people are entirely dependent upon supplies containing 55 grains of salt per gallon, and these localities are about the healthiest in the county. Will the additional 30 grains per gallon be deleterious? Or, in other words, if water containing 21 grains of salt in the three pints drunk daily is perfectly wholesome, is it likely that a water containing 31 grains in the same quantity will be unwholesome? My opinion is that the water is quite wholesome and that after the inhabitants have become accustomed to its use no objection will be found in it.

Deep well waters derived from the Thanet sands or chalk beneath the greater part of London only contain 8 to 26 grains of salt per gallon, with a correspondingly smaller quantity of sodium carbonate and sulphate, and are very pure, palatable, soft, and well adapted for all domestic and most manufacturing purposes. Bacteriologically they are not invariably so pure as would be expected from such a deep source, but as it is practically impossible for dangerous pollution to occur the bacterial contents can usually be disregarded. A recent experience, however, shows that pollution is possible. When investigating the cause of the bacterial pollution of such a well I discovered that a similar well a few hundred yards away had been converted into a kind of cesspool, and that polluting matter had been poured into it for years. However, at the time of my investigation the well had been filled in and the polluting matter carried by a drain into the public sewer. The experience has, however, impressed upon me the necessity for making very careful investigations before asserting that pollution is impossible.

London Hospital Medical College, E.

ROYAL COLLEGE OF PHYSICIANS OF LONDON.

MEETING OF COMITIA.

A COMITIA was held on Jan. 26th, Sir THOMAS BARLOW, Bart., K.C.V.O., President, being in the chair.

The PRESIDENT referred to the great loss the profession had sustained by the death of Sir Henry T. Butlin, formerly President of the Royal College of Surgeons of England, and it was resolved that a letter of sympathy should be sent from the College to Lady Butlin.

The following gentlemen having passed the required examination were admitted Members of the College:—Charles Hubert Bond, M.D. Edin., Alfred Joseph Clark, M.B. Camb., L.R.C.P., Georg Dorner, M.D. Königsberg, L.R.C.P., William Johnson, M.D. Lond., L.R.C.P., Indarjit Singh, M.B. Camb., I.M.S., and Charles Wilfred Vining, M.D. Lond.

Licences to practise were granted to 92 gentlemen who had passed the necessary examinations.

Diplomas in Public Health were granted jointly with the Royal College of Surgeons of England to the following gentlemen: Arthur George Atkinson, Robert Vickers Clayton, Francis Gerard Hamilton Cooke, Maneckjee Merwanjee Cowasjee, Frank Elton Cox, George Henry Dupont, Josephine Letitia Denny Fairfield (under the Medical Act, 1876), William Miller Fairlie, William Robert Gibson, John Andrew Hagerty, George Crichton Jackson, Satyaranjan Maitra, Mammatha Nath Mitra, John George Owen, Henry Christian Ernest Quin, Jessie Annie Scott (under the Medical Act, 1876), Frederick Meadows Turner, and Arthur Christopher Watkin.

A Diploma in Tropical Medicine was granted jointly with the Royal College of Surgeons of England to James Bruce-Bays.

The following communications were received:—1. From the secretary of the Royal College of Surgeons of England, reporting proceedings of the Council of that College on Nov. 9th, Dec. 14th, and Jan. 11th last. 2. From Mr. C. S. Jackson, informing the College that the late Dr. Hughlings Jackson bequeathed a portrait of himself to the College. 3. From Mr. Frank Glover, offering to the College a gold pencil case, formerly the property of Sir Henry Halford, Bart., President of the College. 4. From Mr. Ernest M. Wilks, informing the College that the late Sir Samuel Wilks, Bart., bequeathed to the College a portrait of himself and a gold cup. The above gifts were accepted, and the thanks of the College ordered to be returned to the writers of the letters. 5. From the Doctors' Wives Defence Movement concerning certain effects of the Insurance Act. 6. From Dr. James Kerr Love, on behalf of the National Bureau for Promoting the Welfare of the Deaf, concerning the delivery of proposed lectures. The matter was referred to the Censors' Board.

The PRESIDENT announced that he had nominated Sir James F. Goodhart to be the Harveian orator for this year, and Dr. D. B. Lees to be the Bradshaw lecturer, and that the Council had appointed Captain R. McCarrison, I.M.S., to be the Milroy lecturer for 1913. The President also announced that he had nominated Dr. Frederick T. Roberts to be the representative of the College on the governing body of the University of Wales. Dr. W. Collier, Dr. F. W. Mott, Dr. H. P. Hawkins, and Dr. H. D. Rolleston were elected councillors.

Sir Francis Champneys was re-elected a representative of the College on the Central Midwives Board; Sir Dyce Duckworth was re-elected a representative on the governing body of the University of Liverpool; and Dr. Samuel West was appointed a representative of the College on the court of governors of the University of Birmingham.

Certain addenda were made to the scheme of the new examinations in psychological medicine, the chief of which was to the effect that the appointment of examiners should be made by the Censors' Board.

A report was received and adopted from the Committee of Management dated Dec. 5th, 1911. The committee recommended that the following institutions should be added to the list of institutions recognised by the Examining Board in England for instruction in chemistry and physics: Royal Dental Hospital, London, and Mill Hill School. The committee also recommended that Rhodes University College,

Grahamstown, South Africa, should be added to the list of institutions recognised by the board for instruction in chemistry, physics, and biology.

It was resolved that a committee of the College should be formed to watch the interests of the Licentiates of the College under the provisions of the Insurance Act, with power to confer with any other body established for similar purposes should the committee see fit to do so.

A debate then followed upon the invitation of the National Insurance Commissioners to the College to send representatives to the conference to be held to-day (Friday, Feb. 2nd), in the course of which the President adjourned the Comitia until Tuesday, Jan. 30th.

The adjourned Comitia was held on Tuesday, Jan. 30th, Sir THOMAS BARLOW, K.C.V.O., the President, being in the chair.

A report was received from the Representative of the College on the General Medical Council, on the proceedings of the Council during its session in November last.

After some formal business had been transacted the College proceeded to discuss a letter which had been received from the National Health Insurance Commission. The letter was as follows:—

National Health Insurance Commission,
Whitehall, London, S.W.,
24th January, 1912.

SIR,—The National Health Insurance Commissioners have decided, for their assistance in bringing the Insurance Act into operation, to take the earliest opportunity of personally conferring with representatives, widely selected, of the chief sections of the community specially concerned. Conferences with representatives of prospective insured persons have already taken place, and it is considered that the time has now arrived when it would be of material assistance to the Commissioners to obtain, in a conference, suggestions from representatives of the medical profession on certain important questions of procedure preliminary to bringing the Act into operation.

The National Health Insurance Joint Committee and the Insurance Commissioners for England, Scotland, and Wales respectively propose accordingly to hold a Conference on Friday, Feb. 2nd, with representatives of the medical profession; and the Royal College of Physicians in London is invited to appoint two members to attend the Conference, which will be held at 3 P.M. A further communication will be addressed to you as to the place of meeting. A similar invitation is being addressed to the General Medical Council, the British Medical Association, and to other medical bodies.

The point which it is specially desired to discuss relates to the selection of the medical members of the Advisory Committee by whom the Commissioners must be advised in the framing of regulations in accordance with Section 58 of the Act[1]; and the Commissioners will also be glad to hear the views of those present on other matters of procedure in bringing the Act into operation which the representatives of the medical bodies may desire to bring forward.

I am, Sir, your obedient servant,
R. W. HARRIS,
Assistant Secretary of the Joint Committee.

The Secretary, Royal College of Physicians in London.

The following motion was proposed and seconded:—

That in view of the letter from the Insurance Commissioners the College should proceed to appoint Representatives to place before the Commissioners the resolutions of the College respecting the Insurance Bill, in so far as these resolutions may not have been incorporated in the Insurance Act.

To this an amendment was proposed and seconded as follows:—

That in view of the letter from the Insurance Commissioners the College should proceed to consider the invitation of the National Insurance Commissioners to confer with them on the methods of putting the Act into operation.

This was carried by a large majority, and thus became the substantive motion, and carried.

The following series of suggestions were then put and approved of:—

1. That the Insurance Act, as it stands, or even after any modification in it which the Act empowers the Insurance Commissioners to make, is not adapted to secure the benefits "of insurance against loss of health and the prevention and cure of sickness" which are its stated purpose to provide; and that the coöperation of the medical profession in carrying out the operations of the Act is not possible under the Act or under any modifications of it empowered to the Commissioners without inflicting grave injury on the profession.

Therefore:—

2. The College, while desirous of doing all in its power to promote the objects of the Act in reference to the health of the community, is not prepared to accept the invitation of the National Health Insurance Commissioners to the conference on Feb. 2nd for the purposes therein stated of "Selection of Medical Members of the Advisory Committee and" for other matters of procedure in bringing the Act into operation.

3. That the College would be happy to promote an amending Act by which the interests of the public health would be promoted and the interests of the medical practitioners and medical science be safeguarded.

The following motion was then proposed and seconded:—

That the President be requested, with the assistance of such Fellows as he may nominate, to draw up and send a reply to the invitation of the Joint Commissioners in accordance with, and giving the substance of, these resolutions.

To this an amendment was proposed and seconded as follows:—

That the College accept the invitation to discuss the election of medical members of the Advisory Committee, but is not at present in a position to discuss with the Commissioners any other matters of procedure in bringing the Act into operation.

This amendment was lost by a large majority, and the original motion being put was carried.

The PRESIDENT then dissolved the Comitia.

[1] Section 58 of the Act is as follows: "The Insurance Commissioners shall, as soon as may be after the passing of this Act appoint an Advisory Committee for the purpose of giving the Insurance Commissioners advice and assistance in connexion with the making and altering of regulations under this part of this Act, consisting of representatives of associations of employers and approved societies, of duly qualified medical practitioners who have personal experience of general practice, and of such other persons as the Commissioners may appoint, of whom two at least shall be women."

BRITISH MEDICAL BENEVOLENT FUND.

AT the January meeting of the committee 14 cases were considered and grants amounting to £86 made to 11 of the applicants. Appended is an abstract of the cases assisted:—

Daughter, aged 44, of late M.R.C.S. No income, and has been unable to earn a living for some years on account of increasing deafness. Finds she can hear with an instrument recommended by an aural surgeon and asks for assistance to purchase it. Voted £5.

M.B., C.M. Edin., aged 57. Has a small practice in Hampshire, but finds great difficulty in obtaining his fees and asks for a little help. Voted £5.

Widow, aged 41, of M.B., C.M. Edin. Quite unprovided for at husband's recent death after a long illness, and has four young children, the eldest only being 5 years old. Voted £10.

Daughter, aged 57, of late M.R.C.S. Is most willing and anxious to work, but has broken down in health and been obliged to give up a situation as companion. Relieved once, £12. Voted £12.

Daughter, aged 74, of late M.R.C.S. Supplements an income of a few shillings a week by needlework, but is unable to earn as much as formerly on account of rheumatism and failing eyesight. Relieved 13 times, £125. Voted £12.

Daughter, aged 59, of late M.R.C.S. Has supported herself for more than 30 years as governess, school matron, &c., but is now unable to obtain a suitable post. Relieved five times, £60. Voted £12.

Widow, aged 56, of M.R.C.S. No income; no children; and unable to maintain herself on account of ill-health. Relieved eight times, £80. Voted £2, and case to be reconsidered.

Widow, aged 60, of L.R.C.P., L.R.C.S.Irel. No income, and is practically incapacitated by the loss of her right hand. Children unable to help. Relieved eight times, £68. Voted £12.

M.D. Aberd., aged 59. Used to have a fair practice in a Midland town, but has been incapacitated for several years by spastic paralysis, and is entirely dependent on pensions obtained from charitable societies. Three children, the eldest only 13 years old. Relieved three times, £33. Voted £5.

Widow, aged 66, of M.D. Edin. Supplements a small weekly allowance from relations by taking a boarder, and asks for a little help to meet unavoidable expenses. Relieved twice, £12. Voted £6.

Daughter, aged 50, of late F.R.C.S. Has supported herself as a companion, but at present has no post and is not in very good health. Relieved six times, £35. Voted £5.

Contributions may be sent to the honorary treasurer, Dr. Samuel West, 15, Wimpole-street, London, W.

VITAL STATISTICS.

HEALTH OF ENGLISH TOWNS.

IN the 94 largest English towns having an estimated population of 17,559,219 persons in the middle of this year, 8745 births and 5559 deaths were registered during the week ending Jan. 27th. The annual rate of mortality in these towns, which had been 15·3, 15·4, and 14 8 per 1000 in the three preceding weeks, rose to 16 5 per 1000 in the week under notice. During the first four weeks of the current quarter the mean annual rate of mortality in these large towns averaged 15·5 per 1000, while in London during the same period the average annual death-rate did not exceed 15·0 per 1000. The annual death-rates in the several towns last week ranged from 6 2 in Edmonton, 7·8 in Eastbourne, 8·5 in Hornsey, 9·6 in Grimsby, and 10·1 in Southend-on-Sea, to 23·1 in Newport (Mon.), 24·3 in West Bromwich, 25·3 in Merthyr Tydfil, 29·8 in Walsall, and 31·5 in Dudley.

The 5559 deaths from all causes in the 94 towns were 580 in excess of the number in the previous week, and included

311 which were referred to the principal epidemic diseases, against 323 and 297 in the two preceding weeks. These 311 deaths from the principal epidemic diseases included 94 from whooping-cough, 72 from measles, 53 from diphtheria, 47 from infantile diarrhœal diseases, 26 from scarlet fever, and 19 from enteric fever, but not one from small-pox. The mean annual death-rate from these epidemic diseases last week did not exceed 0·9 per 1000, and was equal to the average rate in the three preceding weeks. The deaths attributed to whooping-cough, which had been 78, 88, and 81 in the three preceding weeks, rose to 94 last week, and caused the highest annual death-rates of 1·3 in Gateshead, 1·4 in Coventry, 1·5 in Tottenham and in West Bromwich, 1·7 in Walsall, 1·8 in Swansea, and 2·5 in Merthyr Tydfil. The deaths referred to measles, which had declined from 83 to 64 in the three preceding weeks, rose to 72 last week; the highest death-rates from this disease were 1·3 in Wallasey and in Swansea, 1·8 in Oldham, and 2·1 in Warrington. The fatal cases of diphtheria, which had been 49, 69, and 60 in the three preceding weeks, declined to 53 last week, and included 18 in London and its 14 suburban districts, 5 in Leeds, and 3 in Liverpool. The deaths attributed to infantile diarrhœal diseases, which had averaged 57 in the three preceding weeks, declined to 47 last week, of which 17 were registered in London, 4 in Birmingham, and 3 in Newcastle-on-Tyne. The deaths referred to scarlet fever, which had been 19 in each of the two previous weeks, rose last week to 26, and included 4 in Leeds, 3 in London, and 2 each in Birmingham, Liverpool, and Middlesbrough. The fatal cases of enteric fever, which had been 24, 20, and 17 in the three preceding weeks, were 19 last week; 4 deaths were registered in Sheffield, 3 in London, 2 in Stoke-on-Trent, and 2 in Manchester.

The number of scarlet fever patients under treatment in the Metropolitan Asylums and in the London Fever Hospital, which had steadily decreased from 2213 to 1654 in the ten preceding weeks, had further declined to 1562 on Saturday last; 158 new cases of this disease were admitted to these institutions during the week, against 193, 165, and 162 in the three preceding weeks. These hospitals also contained on Saturday last 1209 cases of diphtheria, 328 of whooping-cough, 116 of measles, and 50 of enteric fever, but not one of small-pox. The 1376 deaths from all causes recorded in London were 159 in excess of the number in the previous week, and were equal to an annual death-rate of 15·9 per 1000. The deaths referred to diseases of the respiratory system, which had been 290 and 303 in the two preceding weeks, further rose to 333 in the week under notice, but were 41 below the number registered in the corresponding week of last year.

Of the 5559 deaths in the 94 large towns last week, 190 were referred to different forms of violence, and 470 were the subject of coroners' inquests. The causes of 61, or 1·1 per cent., of the deaths registered in the week under notice were not certified either by a registered medical practitioner or by a coroner after inquest. All the causes of death were duly certified in Leeds, Bristol, West Ham, Bradford, Nottingham, Portsmouth, and in 63 other smaller towns. The 61 uncertified causes of death last week included 10 in Birmingham, 10 in Liverpool, 5 in Stoke-on-Trent, and 4 each in London, in Dudley, and in Manchester.

HEALTH OF SCOTCH TOWNS.

In the 18 largest Scotch towns having an estimated population of 2,182,400 persons in the middle of this year, 1108 births and 740 deaths were registered during the week ending Jan. 27th. The annual rate of mortality in these towns, which had been 18·7 and 17·7 per 1000 in the two preceding weeks, rose to 17·3 per 1000 in the week under notice. During the first four weeks of the current quarter the mean annual rate of mortality in these Scotch towns averaged 17·7 per 1000, and was 2·2 per 1000 above that recorded in the 94 large English towns during the same period. The annual death-rates in the several Scotch towns last week ranged from 7·6 in Falkirk, 9·9 in Partick, and 10·0 in Motherwell, to 20·4 in Glasgow, 28·2 in Greenock, and 31·1 in Ayr.

The 740 deaths from all causes in the 18 Scotch towns were 15 in excess of the number in the previous week, and included 89 which were referred to the principal epidemic diseases, against 82 and 103 in the two preceding weeks. Of these 89 deaths, 39 resulted from measles, 18 from whooping-cough, 13 from diphtheria, 11 from infantile diarrhœal diseases, 4 from scarlet fever, and 4 from enteric fever, but not one from small-pox. These 89 deaths from the principal epidemic diseases were equal to an annual death-rate of 2·1 per 1000, or 1·2 per 1000 above that recorded in the 94 large English towns. The deaths attributed to measles, which had increased from 34 to 56 in the three preceding weeks, declined to 39 last week, of which 22 were recorded in Glasgow, 6 in Edinburgh, and 3 in Aberdeen. The 18 deaths referred to whooping-cough were equal to the number in the previous week, and included 8 in Glasgow, 3 in Ayr, and 2 in Aberdeen. The fatal cases of diphtheria, which had been 10 in each of the two preceding weeks, rose to 13 last week; 6 deaths occurred in Glasgow, 2 in Edinburgh, and 2 in Ayr. The 11 deaths attributed to infantile diarrhœal diseases were two in excess of the average in the three preceding weeks, and included 5 in Glasgow, 2 in Dundee, and 2 in Hamilton. The deaths referred to scarlet fever, which had been 11, 6, and 6 in the three preceding weeks, further declined to 4 last week, 2 of which were registered in Aberdeen. Of the 4 fatal cases of enteric fever, which were equal to the number in the preceding week, 3 were recorded in Glasgow and 1 in Greenock.

The deaths referred to diseases of the respiratory system, which had been 147 and 120 in the two preceding weeks, rose to 133 last week; and 24 deaths were attributed to different forms of violence.

HEALTH OF IRISH TOWNS.

In the 22 town districts of Ireland, having an estimated population of 1,157,014 persons in the middle of this year, 602 births and 495 deaths were registered during the week ending Jan. 27th. The annual rate of mortality in these towns, which had increased from 18·0 to 21·8 per 1000 in the four preceding weeks, further rose to 22·3 per 1000 in the week under review. During the first four weeks of the current quarter the mean annual death-rate in the 22 Irish towns averaged 20·8 per 1000; in the 94 large English towns the mean annual death-rate during the same period did not exceed 15·5, while in the 18 Scotch towns it was equal to 17·7 per 1000. The annual death-rates last week in the several Irish towns were equal to 23·5 in Dublin (against 15·9 in London), 27·5 in Belfast, 26·5 in Cork, 15·3 in Londonderry, 16·3 in Limerick, and 13·3 in Waterford; while in the 16 smallest of these Irish towns the death-rate last week did not exceed 10·7 per 1000.

The 495 deaths from all causes in the 22 Irish towns were 12 in excess of the number in the previous week, and included 30 which were referred to the principal epidemic diseases, against 28 and 41 in the two preceding weeks; of these 30 deaths, 15 resulted from whooping-cough, 5 from diarrhœal diseases, 3 from measles, 3 from scarlet fever, 3 from diphtheria, and 1 from enteric fever, but not one from small-pox. These 30 deaths from the principal epidemic diseases were equal to an annual death-rate of 1·4 per 1000; the death-rate from these diseases did not exceed 0·9 in the 94 English towns, while in the 18 Scotch towns it was equal to 2·1 per 1000. The deaths attributed to whooping-cough, which had increased from 4 to 19 in the three preceding weeks, fell to 15 last week, and comprised 12 in Belfast and 3 in Dublin. The deaths referred to diarrhœal diseases, which had been 4 and 11 in the two preceding weeks, declined last week to 5, all of which related to infants under two years of age. The 3 fatal cases of diphtheria were equal to the average in the two preceding weeks. The 3 deaths attributed to scarlet fever were equal to the average in the three preceding weeks, and included 2 in Dublin and 1 in Belfast. The 3 fatal cases of measles were registered in Dublin, and that of enteric fever in Belfast.

The deaths referred to diseases of the respiratory system, which had steadily increased from 83 to 111 in the five preceding weeks, further rose to 152 last week. Of the 495 deaths from all causes in the 22 Irish towns, 126, or 25 per cent., were recorded in public institutions, and 9 were attributed to different forms of violence. The causes of 15, or 3·0 per cent., of the total deaths in the week under notice were not certified either by a registered medical practitioner or by a coroner after inquest; in the 94 English towns the proportion of uncertified causes of death last week did not exceed 1·1 per cent.

THE SERVICES.

ROYAL ARMY MEDICAL CORPS.

Lieutenant-Colonel Frederick S. Heuston, C.M.G., is placed on retired pay (dated Jan. 22nd, 1912).

The undermentioned Majors to be Lieutenant-Colonels:—Stephen F. Clark, vice T. W. O'H. Hamilton, C.M.G., retired (dated Nov. 4th, 1911); Edward M. Hassard, vice W. W. Pike, D.S.O., promoted (dated Nov. 9th, 1911); Brevet Lieutenant-Colonel Sir William B. Leishman, F.R.S., vice J. M. Irwin, promoted (dated Dec. 11th, 1911); James Thomson, vice Sir W. B. Leishman, F.R.S., supernumerary (dated Dec. 11th, 1911); Gerald T. Rawnsley, vice F. S. Heuston, C.M.G., retired (dated Jan. 22nd, 1912); and Brevet Lieutenant-Colonel Alfred P. Blenkinsop, vice G. T. Rawnsley, supernumerary (dated Jan. 22nd, 1912).

Captain Carlisle Kelly is placed temporarily on the half-pay list on account of ill-health (dated Jan. 5th, 1912).

Lieutenant Thomas A. Weston, from the seconded list, is restored to the establishment (dated Dec. 1st, 1911).

Colonel W. G. A. Bedford, C.M.G., principal medical officer, South China, has taken up duty as Principal Medical Officer of the London District, rendered vacant by the retirement of Colonel A. Peterkin. Brevet-Colonel R. H. Firth, sanitary officer, Army Headquarters, Simla, has been appointed an Honorary Surgeon to His Excellency the Viceroy. Lieutenant-Colonel R. L. R. Macleod has been posted to Devonport in charge of the Military Hospital and appointed Senior Medical Officer of the South-Western Coast Defences. Lieutenant-Colonel J. J. C. Donnett has taken up duty in the Straits Settlements as Senior Medical Officer. Lieutenant-Colonel J. M. F. Shine has been appointed Senior Medical Officer at Jersey, in succession to Lieutenant-Colonel F. P. Nichols, who has been appointed as Medical Officer in Charge at Bodmin. Lieutenant-Colonel C. T. Blackwell has been appointed to command the Station Hospital at Rangoon. Lieutenant-Colonel C. A. Lane has been placed under orders to embark for a tour of service in India.

Major T. E. Fielding has taken up duty in the London District. Major H. S. Roche, adjutant of the Royal Army Medical School of Instruction at Leeds, has been posted for duty at Lincoln. Major H. W. Grattan has been posted to Benares. Major A. Chopping has been posted to the Eastern Command on return from India. Major H. H. Norman has been appointed for duty at Kasauli. Major A. C. Fox, on return from North China, has been posted to the Dublin District. Major A. G. Thompson has been selected for appointment to command the Station Hospital at Pachmarhi, with effect from March 1st next. Major J. McD. McCarthy has taken up duty as Specialist Sanitary Officer to the Second (Rawal Pindi) Division. Major J. G. McNaught has been appointed to the Aldershot Command Major G. H. Goddard has taken over charge of the Helena Hospital for Women and Children at Shorncliffe, in succession to Major S. H. Fairrie. Major L. P. More has been posted for duty with the Ninth (Secunderabad) Division.

Captain T. S. Blackwell has been appointed to the Medical Charge of the 1st Battalion, Royal Irish Rifles, during the movement of this regiment from Maymyo, Burma, to Kamptee. Captain V. T. Carruthers has joined the Cork District. Captain W. Egan has been granted eight months' general leave of absence home from India, at the termination of which he will revert for duty on the home establishment. Captain R. L. Argles has been appointed to the Medical Charge of the 23rd Fortress Company of the 3rd Sappers and Miners, stationed at Aden, in succession to Captain A. D. O'Carroll. Captain W. C. Smales, in charge of the Cantonment General Hospital at Poona, has been granted eight months' leave of absence home from India. Captain A. D. Jameson, from Aldershot, has taken up duty as Specialist in Dermatology and Venereal Diseases at the Station Hospital, Meerut. Captain J. Mackenzie has been transferred from Pirbright to the London District. Captain F. W. W. Dawson has left Dublin for a tour of duty in India. Captain H. C. Winckworth has been transferred from the Aldershot Command to the Woolwich District for duty at the Royal Herbert Hospital. Captain J. H. Graham, on return from Gibraltar, has been posted to Kilworth Camp. Captain F. A. McCammon has joined the Station Hospital at Poona for duty. Captain G. E. Ferguson has been appointed to Winchester. Captain J. L. Jones has been posted to the Eighth (Lucknow) Division for duty with the Southern Army. Captain H. Rogers has been detailed for a tour of service at Malta. Captain A. H. Heslop has been appointed for duty on board the transport s.s. *Rohilla*, which left Karachi for Southampton on Jan. 31st.

Lieutenant J. A. Manifold has been placed under orders for a tour of service in Bermuda. Lieutenant A. S. M. Winder, from the Curragh, has joined the Station Hospital at Lucknow. Lieutenant J. Gilmour, Devonport, has been appointed to the Military Hospital at Cosham.

INDIAN MEDICAL SERVICE.

The King has approved of the promotion of the following officers of the Indian Medical Service:—Captains to be Majors (dated July 27th, 1911): Francis Victor Owen Beit and Matthew Corry. Lieutenants to be Captains (dated August 1st, 1911): Reginald Broughton Lloyd, Hugh Stott, and Gerald Lewis Colhoun Little.

The King has also approved of the retirement of Lieutenant-Colonel Charles Henry Bedford (dated Dec. 18th, 1911).

Lieutenant-Colonel T. W. Irvine has been selected to officiate as Agency Surgeon, First Class and Chief Medical Officer in the North-Western Frontier Province during the absence on leave of Lieutenant-Colonel W. R. Edwards, C.M.G. Lieutenant-Colonel H. B. Melville has taken over Medical Charge of the Army Headquarters Staff and Establishments during the absence of Captain A. E. Lister, surgeon to H.E. the Commander-in-Chief. Lieutenant-Colonel J. Penny has been granted an extension of his leave of absence home from India on the recommendation of a medical board.

The services of Major V. Robertson have been placed at the disposal of the Home Department of the Government of India. Major C. Hudson, D.S.O., has been granted 18 months' leave of absence home from India. Major T. B. Kelly has been appointed Specialist in Ophthalmology to the Burma Division. The services of Major H. M. Mackenzie have been placed temporarily at the disposal of the Government of the Punjab. Major R. Brysom has been appointed District Medical and Sanitary Officer at Tinnevelly, and in Medical Charge of the District Jail, Palamcottah, Madras Presidency. Major W. H. Kerrick has arrived home on leave of absence from India. Major A. F. Stevens, civil surgeon at Hazaribagh, has taken up duty as an Officiating Civil Surgeon of the first class during the absence on leave of Lieutenant-Colonel F. C. Clarkson.

Captain W. M. Houston has been appointed Medical Officer, Kathiawar Political Agency, and in charge of the West Hospital at Rajkot. Captain W. C. Long has arrived home on leave of absence from Madras Presidency. Captain M. R. C. MacWatters has been granted furlough for one year. Captain W. D. A. Keys has been appointed Civil Surgeon at Karwar. Captain J. E. Clements has been selected to officiate as Superintendent of the Central Jail at Fategarh during the absence on leave of Lieutenant-Colonel E. Jennings. Captain B. B. Paymaster has been granted leave, combined with furlough, for a total period of two years. Captain W. P. G. Williams has been appointed to officiate as Superintendent of the Central Jail at Bareilly during the absence on leave of Major C. B. Prall. Captain J. Smalley has been appointed to officiate as Civil Surgeon at Dhulia, in succession to Major G. E. Stewart, who has been transferred. The services of Captain C. C. Shaw have been placed temporarily at the disposal of the Chief Commissioner of the Central Provinces. Captain C. E. Bulteel has arrived home on leave of absence from India.

SPECIAL RESERVE OF OFFICERS.

Royal Army Medical Corps.

Lieutenant D'Arcy Power is confirmed in his rank. John William Gray to be Lieutenant (on probation) (dated Dec. 27th, 1911).

ROYAL NAVAL VOLUNTEER RESERVE.

The undermentioned gentlemen have been appointed Surgeons (dated Jan. 26th, 1912):—Alfred Ernest Wilson Hird, Alfred Edward Turnbull, Edmund Ralph Sircom, Francis Carminow Doble, Walter Fedde Fedden, James Bruce Ronaldson, Joseph Henry Thompson, William Innes Gerrard, Cecil Brian Forsyth Tivy, and Charles O'Beirne Ryan.

TERRITORIAL FORCE.

Royal Army Medical Corps.

Highland Mounted Brigade Field Ambulance, Royal

Army Medical Corps: Lachlan Martin Victor Mitchell to be Lieutenant (dated Jan. 27th, 1912).

1st East Anglian Field Ambulance, Royal Army Medical Corps: The undermentioned officers to be Captains: Lieutenant Ernest V. Gostling (dated Nov. 6th, 1911) and Lieutenant Gerald M. Hetherington (dated Dec. 23rd, 1911).

2nd Home Counties Field Ambulance, Royal Army Medical Corps: Lieutenant Bernard Richardson Billings, from the List of Officers of the Royal Army Medical Corps attached to Units other than Medical Units, to be Lieutenant (dated Jan. 27th, 1912).

2nd West Lancashire Field Ambulance, Royal Army Medical Corps: Lieutenant Owen H. Williams to be Captain (dated Dec. 23rd, 1911).

6th London Field Ambulance, Royal Army Medical Corps: Lieutenant Edward P. Minett is seconded under the conditions of paragraph 114 of the Territorial Force Regulations (dated Jan. 1st, 1912).

1st Lowland Field Ambulance, Royal Army Medical Corps: Lieutenant-Colonel William F. Somerville resigns his commission, and is granted permission to retain his rank and to wear the prescribed uniform (dated Jan. 27th, 1912). Major George H. Edington to be Lieutenant-Colonel (dated Jan. 27th, 1912).

3rd Wessex Field Ambulance, Royal Army Medical Corps: Lieutenant Frederick E. Stokes to be Captain (dated Nov. 19th, 1911).

4th London General Hospital, Royal Army Medical Corps: Captain Fred. W. Mott to be Major (dated Jan. 27th, 1912).

2nd Southern General Hospital, Royal Army Medical Corps: Captain John Alexander Nixon, from the List of Officers of the Royal Army Medical Corps attached to Units other than Medical Units, to be Captain (dated Jan. 27th, 1912).

4th Southern General Hospital, Royal Army Medical Corps: Lieutenant-Colonel Charles E R. Rendle resigns his commission, and is granted permission to retain his rank and to wear the prescribed uniform (dated Jan. 27th, 1912).

Attached to Units other than Medical Units.—Lieutenant William J. T. Barker resigns his commission (dated Jan. 27th, 1912).

For Attachment to Units other than Medical Units.—Robert Lowis Routledge to be Lieutenant (dated Nov. 26th, 1911).

Supernumerary for Service with the Officers Training Corps.—The appointment of Lieutenant Henry Stokes (for service with the Royal College of Surgeons in Ireland Contingent, Senior Division, Officers Training Corps) is antedated to April 1st, 1911.

ROYAL ARMY MEDICAL CORPS EXAMINATIONS.

The following is a list of the successful candidates for commissions in the Royal Army Medical Corps at the competition held in London in January, for which 46 candidates entered:—

	Marks.
A. G. Biggam, M.B., Ch.B. Edin., Edinburgh University ...	585
D. T. M. Large, M.B., Ch.B. Edin., Edinburgh University ...	585
W. F. Christie, M.B., Ch.B. Edin., Edinburgh University ...	575
R. K. Mallam, M.B., B.S. Lond., London Hospital	570
W. W. Pratt, M.B., B.S. Lond., M.R.C.S. Eng., L.R.C.P. Lond., Bristol University	564
*W. B. Stevenson, M.B., B.Ch., B.A.O., Queen's Univ., Belfast, Queen's University, Belfast	544
M. Burnett, M.R.C.S. Eng., L.R.C.P. Lond., St. George's Hospital	543
C. J. Blaikie, M.R.C.S. Eng., L.R.C.P. Lond., St. George's Hospital	540
J. H. M. Frobisher, M.B., B.Ch. Leeds, Leeds University ...	540
C. M. Ingoldby, M.R.C.S. Eng., L.R.C.P. Lond., London Hospital	539
O. W. J. Wynne, L.R.C.P. & S. Irel., Royal Colleges of Physicians and Surgeons of Ireland, University College, London	538
D. T. Richardson, M.B. Ch.B. Edin., Edinburgh University...	534
R. A. Strachan, M.B., Ch.B. Edin., Edinburgh University ...	533
W. McNaughtan, M.B., Ch.B. Edin., Edinburgh University...	525
S. J. Higgins, M.R.C.S Eng., L.R.C.P. Lond., London Hospital and Cambridge University	518
A. Hood, M.B., Ch.B. Edin., Edinburgh University	514
J. L. Ritchie, M.B., Ch.B. Birm., M.R.C.S. Eng., L.R.C.P. Lond., Birmingham University	514
G. A. Blake, M.B., B.S. Lond., M.R.C.S. Eng., L.R.C.P. Lond., Guy's Hospital	503
H. R. L'Estrange, L.R.C.P. & S. Irel., L.M. Rot., Royal College of Surgeons, Ireland	493
*C. J. H. Little, M.B., Ch.B. Leeds, Leeds University	492

* Awarded service marks under Par. 71 of the Regulations for the Officers Training Corps.

INDIAN MEDICAL SERVICE EXAMINATIONS.

The following is a list of the successful candidates at the recent competition for commissions in His Majesty's Indian Medical Service, which was held at the Royal Army Medical College and at the Examination Hall, Victoria Embankment, on Jan. 22nd–27th:—

	Marks.
Ronald Herbert Candy, M.B., B.S. Lond., L.R.C.P., M.R.C.S., London Hospital	3447
Philip John Veale, M.B., B.S. Lond., Bristol University... ...	3376
Henry Hingston, M.B., B.S. Lond., Westminster Hospital ...	3358
Jamasp Cursetji Bharucha, L.R.C.P., M.R.C.S., London Hospital	3338
Frederick Jasper Anderson, L.R.C.P., M.R.C.S., St. Bartholomew's Hospital	3254
Heerajee Jehangir Manockjee Cursetjee, M.B., B.S. Cantab., L.R.C.P., M.R.C.S., L.M. & S. Bombay, Cambridge University and London Hospital	3191
John Simson Stuart Martin, M.B., Ch.B. Edin., Edinburgh University	3094
Peter Fleming Gow, M.A., M.B., Ch.B., D.P.H. St. And., St. Andrews University...	3093
Robert Victor Morrison, M.B., Ch.B. Edin,, Edinburgh University	3019
Joysh Chandra Dey, M.B. Calcutta, Calcutta Medical College	3006
James Walker Jones, M.B., Ch.B. Glasg., Glasgow University	2992
James Hall Hislop, M.B., Ch.B. Glasg., Glasgow University ...	2958

THE ROYAL NAVY LIST.

The Royal Navy List, the 137th quarterly issue of which has just appeared, will appeal to everyone who is interested in naval affairs. To the service and the press it is an indispensable source of reference, while to the public who desire information with regard to the various departments of the Royal Navy—the *personnel*, the ships which form our first line of defence, their names, groupings, and so forth—the book is both valuable and convenient. Compared with the corresponding issue of the List for 1911 the volume is somewhat smaller in bulk, containing only 560 pages, as against 724 last year, but the information which it gives is still characterised by fulness and reliability. In addition to the lists of ships, of officers, and other tabular details, there is a complete history of all the battleships and cruisers of the first and second class, and specially written articles on the "Current History of the Royal Navy" and the "Current History of Foreign Navies," including naval administration and shipbuilding, while there is a chronological list of the notable naval events of the year. One of the most convenient features of the book is the complete alphabetical list of all officers, active and retired, with their services, honours, and special qualifications in the Royal Navy, Royal Marines, Indian Marine, Royal Naval Reserve, Royal Volunteer Reserve, and Australian Naval Defence Forces. The price at which the book is issued—10*s.*—is moderate when the vast amount of information arranged for convenient reference is considered. Messrs. Witherby and Co., of High Holborn and Newman's-court, Cornhill, are the publishers.

MEDICAL SICKNESS AND ACCIDENT SOCIETY.—The usual monthly meeting of the executive committee of this society was held at 429, Strand, London, W.C., on Jan. 19th. There were present Dr. F. de Havilland Hall (in the chair), Dr. F. C. Martley, Mr. H. P. Symonds, Mr. J. Brindley-James, Dr. G. E. Herman, Dr. W. Knowsley Sibley, Mr. F. S. Edwards, Dr. F. J. Allan, Dr. H. A. Sansom, Dr. F S. Palmer, and Dr. J. B. Ball. The records of the society in the latter part of 1911 have been very satisfactory, comparing favourably with the same period in past years. As usual, in the winter months the claims increase, but so far the amount of sickness experienced has been well within that provided for in the rates of contribution. The time of the committee was largely taken up in examining the list of those who are at present receiving sick pay and who are to all appearances permanently incapacitated from professional work. The society's reserves are large, now amounting to over a quarter of a million sterling, and a considerable portion of this is specially earmarked for the benefit of these chronic cases. Prospectuses and all further particulars may be obtained on application to Mr. F. Addiscott, secretary, Medical Sickness and Accident Society, 33, Chancery-lane, London, W.C.

Correspondence.

"Audi alteram partem."

FATAL HÆMOPTYSIS IN EARLY LIFE.

To the Editor of THE LANCET.

SIR,—It may interest your readers, in connexion with the cases described by Mr. Carruthers Watt and Dr. Ralph Brown in your issue of to-day and of April 30th, 1910, to refer to a case an account of which I gave to the Pathological Society in May, 1874.[1] It was that of an infant aged 7 months, under my observation at the Brompton Hospital, who had suffered from cough from the preceding Christmas and presented signs of tuberculosis. The cough was spasmodic and attended with a ropy mucous expectoration which had to be removed from the mouth. On April 1st, having had no previous hæmoptysis, the child suddenly expectorated half a pint of dark, partly clotted blood and expired almost immediately. On post-mortem examination the lungs were disseminated with miliary tubercles, and at the base of the left lobe there was a ragged cavity traversed by trabeculæ, some of which contained vessels still patent, and surrounded by tuberculous consolidation. Near the apex of the same lobe there was another smaller cavity of similar characters, across which stretched a vessel one-tenth of an inch in transverse measurement, with thickened walls, but at one point the wall of the vessel was eroded to extreme tenuity and had given way. The vessel was found to be one of the larger branches of the pulmonary artery. Pulmonary tuberculosis is not common at this early period of life, but in this family all the five other children had died in infancy with lung symptoms, the eldest being ten weeks old, and the father was found to be suffering from phthisis.

I believe this to be the first case recorded of fatal hæmoptysis at so early an age, and I classified it as belonging to the third group of the series of cases I had brought before the Pathological Society four years previously.[2] Amongst the 17 cases there recorded the youngest was that of a child aged 14, more fully described by Dr. Symes Thompson in the *Medical Times and Gazette* of May 21st, 1870.

I am, Sir, yours faithfully,

Portland-place, W., Jan. 27th, 1912. R. DOUGLAS POWELL.

THE TREATMENT OF GLAUCOMA.

To the Editor of THE LANCET.

SIR,—I read with great interest the communications by Mr. J. Herbert Parsons and Dr. Leonard Hill to THE LANCET.[3] At the early part of my career I worked for many years at five ophthalmic clinics at the same time—indeed, for ten years. The experience I obtained led me to attach little value to the operative treatment of those cases in which one rarely if ever found increased tension—i.e., tension detectable by palpation. That the blocking of the angle was the determining cause of glaucoma in these cases did not appeal to one's judgment, and especially in view of the fact that some even with *deep cupping* retained their sight for many years under purely drug treatment. At the Ophthalmological Society I have several times emphasised the hypothesis that, given toxins or antitoxins or any such irritant in any amount for a considerable time, tension would result from swelling of the epithelium cells, and especially those lining the canal of Schlemm. So firmly did I believe this to be the case that my treatment for many years has been largely conservative. Not long ago I was called to see a feeble patient with acute glaucoma. In this case medical treatment was tried: (*a*) gutt. eserin. gr. 1 saepe until the pupil contracted; (*b*) a brisk purgative; (*c*) diminution of the supply of fluids; and (*d*) the placing of the patient in the cardiac position, &c. The patient made a perfect recovery and during the last two years under suitable drug treatment has had no further symptoms. Dr. J. Stewart Richards, of Croydon, kindly undertook supervision of the case.

As regards chronic glaucoma with rare attacks of tension and very deep cups—i.e., in precisely the cases in which operation is apt to result in rapid contraction of the field of vision, and in which operative treatment most signally fails—I have had results well worth recording. One case, a myope with advanced glaucoma, deep anterior chambers, and only occasional tension, vision was kept at or about 6/12 with correcting glasses for 15 years. During my holidays she had attacks of fog, for which iridectomy was done by one of the most expert operators in London, with the result that in a few months she was quite blind. In a second case, a lady with very deep cups was advised by an eminent oculist, to whom I sent the case for an opinion, to submit to an immediate operation. I saw her a few days ago. Vision in the right eye is 6/18 and in the left 6/12 good and 6/9? The field in the right eye is badly contracted on the nasal side but good in the left eye. It is now 20 years since my eminent *confrère* recommended immediate operation.

Another interesting case which tends to bear out Dr. Leonard Hill's teaching was that of a man with subacute glaucoma and cloudy cornea. On this man I performed an iridectomy on the worse eye, but it resulted in no benefit whatever. I accordingly induced a friend, who very deservedly enjoys a great reputation for operative skill, to see him. He inspected my iridectomy wound very carefully and declined to operate on the other eye which was similarly affected. As treatment seemed useless—i.e., the treatment by eserine—and the man persistently came to my out-patients despite all efforts to discourage him, I determined to put him on active mercurial treatment. The result was an apparent cure, and he retained his sight in the unoperated eye for about nine years—indeed, until the time of his death. Of course, I have lost scores since then, but these cases show the necessity of taking Dr. Leonard Hill's teaching very seriously. My own conviction is that iridectomy for chronic glaucoma should never be relied on without attention to certain details which will appear lower down. As regards the newer operations, I incline most to that of Major Herbert on the ground that, despite his belief, sections recently made prove that filtration can take place through the new tissue. There is an even greater probability of success if we can delay healing in such a way as to produce a permanent fistula, which seems by no means an impossibility if time is allowed for epithelium to grow up along the track of the knife. To estimate these operations in glaucoma, such as I have referred to, it is idle to suppose they have been successful on the ground the vision and fields remain stationary for merely a year or two.

The treatment I now follow is to show the patient the kind of halo seen in glaucoma, and instruct him to look for it at night before retiring (as there is very properly a suspicion that the attacks of tension occur at night), and in the event of there being even a suspicion of such a halo to instil gutt. eserin. gr. 1-8th. The patient is further instructed to sleep in the cardiac position. Very urgently are all glaucoma cases advised not to sleep with the pillow pressing on the great veins of the neck. These injunctions are also given to those suffering from iritis, as in no cases do we see the result of such pressure more acutely felt; indeed, the pressure of the pillow seems to be quite a common cause of the exacerbation of pain at night when in bed. Another precaution one takes is to give a small dose of hydrarg. last thing at night on the supposition that it may help to restrain the growth of bacteria in the alimentary canal. The bowels are washed out every ten days or so with a brisk saline. My experience of this treatment has been such that one would be reluctant to give it up.

I certainly hope that Dr. Leonard Hill's paper will be widely read, as he undoubtedly gives us a good scientific basis to work upon.

I am, Sir, yours faithfully,

CHAS. WRAY, F.R.C.S. Eng.

Victoria-street, S.W., Jan. 26th, 1912.

To the Editor of THE LANCET.

SIR,—It affords me satisfaction to have obtained from Dr. Leonard Hill a statement of his own opinions on the subject of glaucoma, partly because I could not believe that Dr.

[1] Pathological Transactions, vol. xxv., p. 39.
[2] Ibid., vol. xxii., p. 55.
[3] THE LANCET, Jan. 6th (p. 15) and 27th (p. 226), 1912.

Thomson Henderson's writings gave an adequate expression of those opinions, but chiefly because it is only by enlisting the active interest and coöperation of physiologists that advance in our knowledge of the physiology and pathology of the intra-ocular pressure can be attained. I have so profound a respect for the views of those who are *au fait* with the latest researches in physiology that any criticism of Dr. Hill's remarks which I venture to offer are put forward in the rôle of *advocatus diaboli* rather than that of confirmed antagonist. The statement which Dr. Hill controverts is founded upon the experimental work of Leber, Starling and Henderson, myself, and others. I have always been careful to state that the physical conditions of the formation of lymph "are consistent with" or are "not inconsistent with" its production by a process of filtration, for I have never brought myself to believe that the living endothelial cells which form the walls of the capillaries and the retinal epithelial cells which cover the ciliary processes play a merely passive part in the production of the intra-ocular lymph. Such experimental work as I am familiar with appears to me to support the statement in the terms which I have used, and the deduction that there is a difference in pressure on the two sides of the capillary walls is thus far justified. The bald statement that "there is *no* evidence which demonstrates that there is a hydrostatic difference of pressure on either side of the capillary wall" does not under these circumstances carry conviction. Dr. Hill apparently admits the physical process of filtration in the absorption of lymph, for he says that "each pulsatile expansion in the arteries of the eye helps to drive a little of the aqueous into the efferent veins."

With regard to Martin Fischer's work, it appears to me to be as risky to apply such results obtained upon the excised eye directly to the living eye as it is to make deductions from a mechanical model. We know that an excised frog's muscle will take up water from strong saline solutions against osmotic pressure; it does not follow that the living muscle will behave in the same manner, and in fact it does not. The statement as to the action of sub-conjunctival injections in glaucoma has unfortunately been amply disproved. The suggestion, however, that the swelling of colloids is an important factor in glaucoma opens up a wide field for research, and if any remarks which I have made stimulate physiologists to direct their attention to the subject I shall be well repaid for any errors of which I may have been guilty. I am, Sir, yours faithfully,

J. HERBERT PARSONS.

Queen Anne-street, W., Jan. 29th, 1912.

THE PROPAGATION OF PLAGUE WITHOUT THE AID OF INFECTED RATS.

To the Editor of THE LANCET.

SIR,—I have perused with considerable interest your leading article on this subject in THE LANCET of Dec. 16th, 1911. I beg to forward, under separate cover, a copy of my paper on Plague published in the *American Journal of the Medical Sciences* in September, 1909. I have tried therein to represent the views upon pneumonic plague which are held here, and which have been amply borne out by my clinical experience, now extending over 15 epidemics in this city. Whilst fully agreeing with Dr. R. Farrar as to direct infection in the propagation of pneumonic plague, there are other possible channels of infection that should not be overlooked, as you will find pointed out on p. 14 of my pamphlet. Should the apparent primary pneumonia be but a result of septicæmia, then the intervention of the flea would be necessary, whether the tarabagan or the human flea, I am not prepared to say. The sequence of events would then stand thus: (1) Infected tarabagan; (2) infected flea of same; (3) human infection, with rapid and early septicæmia followed by (4) pneumonia, *apparently* primary, but really secondary to blood infection.

As regards the sputum infecting from secondary pneumonia in a case of bubonic plague, the chances of infection are infinitesimal, though the probability could hardly be denied. The complication is comparatively rare, and the sputum not generally free or abundant. I have not come across any instances of infection in this way throughout my long connexion with the disease.

I am, Sir, yours faithfully,

Bombay, Jan. 6th, 1912. N. H. CHOKSY, M.D.

THE MORBID DIATHESES.

To the Editor of THE LANCET.

SIR,—My esteemed former house surgeon, Mr. MacIlwaine, credits me with little knowledge of the writings of my revered teacher, Dr. Moxon, and proceeds to contend against conclusions presumed to be in my Bradshaw lecture without apparently having read that address. My argument in reference to the diatheses was that many diseases formerly dogmatically taught to be due to hereditary constitutional causes, such as tubercle, leprosy, malaria, rheumatism, had been proved by modern investigation to be due to the in-roads of micro-organisms, or, to use the terms of our common teacher, had been removed from the intrinsic to the extrinsic class. Nowhere do I deny that disease may not commence from defects in the organisation of any individual. But Mr. MacIlwaine's illustrations are not all well chosen; for nothing is more certain than that attacks of asthma may be caused by the pollen of certain plants and the odours of various animals, and "chronic lunacy" is certainly not always dependent on a constitutional cause, for that form of chronic lunacy which is associated with general paralysis has been most clearly proved to be due to the degenerations caused by the ravages of the spirochæta pallida.

I am, Sir, yours faithfully,

Wimpole-street, W., Jan. 30th, 1912. R. CLEMENT LUCAS.

ELECTRIC METALLIC COLLOIDS AND THEIR THERAPEUTICAL APPLICATIONS.

To the Editor of THE LANCET.

SIR,—I have read with great interest M. Duhamel's article on the use of metallic colloids in medicine in THE LANCET of Jan. 13th. I was unaware that so much work had been done with this comparatively new therapeutic agent. M. Duhamel is undoubtedly an authority on this development of treatment in clinical medicine, but I think he is not justified in sweeping on one side all colloids of metals produced by chemical means as useless, and asserting that those produced by electrical means only are of value.

The new metallic colloids of silver and mercury recently introduced by Mr. Henry Crookes, under the name of "collosols," are made by an entirely novel chemical reaction and produce metallic colloids which are eminently stable and of great Brownian and bactericidal activity. The particles are of very small size and of perfect uniformity as seen under the ultra-microscope. It has also been found that when injected into the blood stream the particles do not block the capillaries. These collosols have been reported on by Professor Emil Hatschek as being "well made, free from reduced mercury and silver salt, and sufficiently stable towards electrolytes, heat, and the influence of organisms for all reasonable requirements." Mr. Crookes's collosols are made of a standard strength, namely 500 parts of metal to 1,000,000 parts of liquid—i.e., 1 in 2000. Laboratory experiments over a considerable period of time show that all bacteria experimented with are killed rapidly by one or the other of these collosols. The strength may be reduced to as little as 5 or 10 parts per 1,000,000, and in some cases as little as 1 part of silver per 1,000,000 has proved fatal to the bacteria in a few minutes. The bacteria experimented with were *B. coli communis*, *B. tuberculosis*, *diplococcus gonorrhœæ*, various forms of *staphylococcus* and *streptococcus*, and many others. The collosols are practically tasteless, of a reddish-brown colour, perfectly clear by transmitted light, and fluorescent by reflected light. They may be applied topically, hypodermically, intravenously, or by the mouth, and being non-toxic the dose hypodermically is unlimited, and experimental injections of 1 to 2 c.c. give little or no local or reactionary symptoms. It is necessary, of course, when giving hypodermically or intravenously that proper and usual precautions be taken. My own clinical experience with these chemical colloids during some months of recent practice entirely corroborates that of M. Duhamel with the electrical colloids, and I have treated the following cases with marked and surprising success. *Topically:* Septic and follicular tonsillitis, Vincent's angina, phlyctenular conjunctivitis, gonorrhœal conjunctivitis, spring catarrh. Impetigo contagiosus, acne of face and body, septic ulcers

of legs, ringworm of body, tinea versicolor. Soft sores suppurative appendicitis after operation (the wounds cleaned rapidly). Pustular eczema of scalp and pubes, chronic eczema of external meatus of ear with recurrent boils, and also chronic eczema of anterior nares. Offensive discharge in case of chronic suppuration in otitis media, bromidrosis of feet and axillæ. Blind boils of neck. *By injection:* Gonorrhœa and chronic cystitis (local), boils, epididymitis. In above cases I found that symptoms were relieved rapidly.

In these circumstances I feel justified in asserting that "collosols" are quite equal to, in their clinical action, if not better than, electric colloids, and my object in writing this letter is to bring before the medical profession the advantages that can be gained in treatment by the use of chemical collosols.

I am, Sir, yours faithfully,

C. E. ALEX. MACLEOD, F.R.C.S. Eng.

Ladbroke-grove, W., Jan. 24th, 1912.

SALVARSAN AND SYPHILIS.

To the Editor of THE LANCET.

SIR,—My first experience of salvarsan was in September, 1910, at the Hôpital St. Jacques, Brussels. The results observed there were quite brilliant, but in many cases the swelling caused by the injection was of the size of a clenched fist, exceedingly painful to the touch, and attended by great pain lasting often three days. One injection was made deeply into the muscles of the back.

Most of the writers on this subject in your columns have specially commented upon the painfulness of this procedure. Salvarsan, I think, is not very irritating or caustic to the tissues if properly prepared, but the sudden introduction of 10 c.c. of any powder in suspension which is not immediately absorbed must produce tension and consequently pain, even if not more serious consequences, such as necrosis and sloughing.

I have been using salvarsan ever since it was procurable on the market, and have employed it in the following manner. The emulsion is prepared at the side of the bed with all aseptic precautions. The patient lies on his stomach; both buttocks and the skin below both scapulæ are painted with tincture of iodine. Into each of these sites the emulsion is injected in about equal quantities. The needle of the syringe is necessarily somewhat large and four injections are more disagreeable than one, but any after-pains have in my cases been negligible, therefore opium has never been required either before or after the injection. Practically there has been no rise in temperature. The dose given has been 0·6 gramme except in the case of children.

All must, I think, admit the speedy and remarkable results of this drug in many forms of syphilis, but at the same time we are all familiar with the rapid improvement which takes place in some syphilitic lesions by the administration of large doses of the iodides.

Last year I saw in the Hôpital St. Louis, Paris, cyanide of mercury given intravenously; it caused not the slightest inconvenience to the patients, and benefited wonderfully the specific lesions. To produce rapid results it seems necessary to administer a powerful poison to the treponema, and excellent results follow the intensive treatment by mercury urged by M. Jacquet, which I have been using for some time. We must all be grateful for the addition of "606" to our weapons against the devastating action of syphilis; the dream of Ehrlich has yet to be fulfilled, though he has materially helped its consummation—the discovery of agents parasitotropic, but not organotropic, when administered in disease.

I am, Sir, yours faithfully,

Wigan, Jan. 23rd, 1912. R. PROSSER WHITE.

RESEARCH DEFENCE SOCIETY.

To the Editor of THE LANCET.

SIR,—It is just four years since this society was founded to make generally known the facts as to experiments on animals in this country and the regulations under which they are conducted, the immense importance of such experiments to the welfare of mankind, and the great saving of human and animal life and health which is already due to them. We hope that you will kindly allow us to report progress. During the past year the society has gained 1000 new members and associates and has formed ten new branches. It now has 5000 members and associates. During the year the society has lost by death eight of its vice-presidents—Sir Henry Butlin, Canon Duckworth, Lady Foster, Dean Gregory, Sir Joseph Hooker, Dr. Hughlings Jackson, the Bishop of Oxford, and Sir Samuel Wilks. The following have consented to act as vice-presidents: H.H. the Aga Khan, Mr. Waldorf Astor, Mr. Otto Beit, Lord Cobham, Lord Dunedin, Lord Leconfield, Sir Henry Morris, the Bishop of Rangoon, the Bishop of St. Asaph, Mr. Paul Swain, and the Bishop of Truro.

The following pamphlets and leaflets have been published during the year: (1) A Question of Ethics; (2) Experiments during 1910; (3) The Facts of the Case; (4) The Saving of Human Lives; (5) The Rockefeller Institute; (6) The Case presented by Antivivisectionists; (7) Recent Surgical Progress; (8) Antivivisection Shops; (9) Tuberculosis: (10) Sleeping Sickness; (11) Annual Report, Balance Sheet, and List of Members and Associates. A book is in the press, giving a full *résumé* of the evidence before the Royal Commission. It will be published within a few weeks after the publication of the final report of the Royal Commission.

Since Jan. 1st, 1911, the number of addresses, lantern lectures, and debates has been about 120. The quantity of literature which has been distributed has far exceeded that of any preceding year. The society has held stalls at various important exhibitions.

We greatly hope that many of your readers will become members or associates of the society, and will help its useful work. The hononary secretary will always be glad to answer every inquiry, to send literature to all applicants, to receive names for membership or associateship, and to make all necessary arrangements for addresses and lantern lectures in London or elsewhere.

We remain, your obedient servants,

CROMER, President.
SYDNEY HOLLAND, Chairman of Committee.
F. M. SANDWITH, Hon. Treasurer.
STEPHEN PAGET, Hon. Secretary.

21, Ladbroke-square, London, W., Jan. 27th, 1912.

MICHEL'S METAL SUTURES IN GASTRO-ENTEROSTOMY.

To the Editor of THE LANCET.

SIR,—Any detail about this valuable operation seems worth considering if time can be saved in making the junction between the stomach and the bowel without any loss of security. Murphy's buttons and time-saving apparatus such as the newly invented sewing-machine are now not often used. Most surgeons, I think, make a double row of stitching. But the interior row after the openings have been made in the stomach and bowel can be securely and quickly made by metal suturing. This procedure I have tried only in one case of gastro-jejunostomy in a patient exhausted and emaciated with cancer of the stomach and it proved perfectly successful. There is no need to point out the mechanical advantages of metal sutures or the rapidity with which adaptation can be effected. The small teeth are bitten together after use and a thin light ring results which should do no more harm than any other unabsorbable fixation. A metal suture takes a larger surface area of approximated tissue than does a stitch and a row of metal sutures is very light and flexible.

Mr. Moynihan's interesting paper on Jejunal Ulcer in the *Universal Medical Record*, p. 11, suggests remote injurious results from the use of unabsorbable ligatures and quotes Wilkie;[1] the presence of an unabsorbable suture in the granulation area tends to delay repair. Moynihan remarks that the evidence is "perhaps a little slender." Whether other surgeons have tried metal sutures in gastro-enterostomy I do not know, experience will encourage or discredit their use. We must be cautious in writing of any ligature as unabsorbable, for time, *edax rerum*, makes many substances soluble, and solubility has its peculiar dangers from mechanical, toxic, and chemotaxic causes.

I am, Sir, yours faithfully,

GEORGE WHERRY, M.C. Cantab., F.R.C.S. Eng.

Cambridge, Jan. 26th, 1912.

[1] Edinburgh Medical Journal, 1910, p. 2.

LOCAL REACTION IN TUBERCULIN TREATMENT.

To the Editor of THE LANCET.

SIR,—I was much interested in the remarks of Dr. H. W. Godfrey in THE LANCET of Jan. 20th, p. 194, with reference to the treatment of pulmonary tuberculosis with tuberculin. I am quite in agreement with him when he says that many cases are unsuitable for tuberculin treatment, and also with his remark that those which are suitable should be treated correctly; our difficulty is to know which is the correct method of treatment. There appear at present to be two ways of treating the disease; by one method a cure is attempted by stirring up the bacilli at the seat of disease, and the other by preventing the disease from ever becoming active in any way again. The first method can be accomplished by giving exercise and by giving tuberculin in sufficiently large doses, the second by rest and giving sufficiently small doses of tuberculin, in individuals who are apparently able to transform the injected tuberculin into some anti-substance before it reaches the diseased focus in the lung. Both methods in some cases produce cures. The latter method has, however, this advantage, that it is not dangerous, which cannot be said of any method that may cause renewed activity of the disease in such an organ as the lung. When possible, therefore, I have been accustomed for the last 12 months to attempt to produce a local reaction at the site of inoculation and none at the seat of disease. In this effort, in suitable cases, I have been quite successful, and have noted that when the local reaction has been severe the only symptoms following are beneficial, resulting in falling temperature, immediate diminution of sputum, increase in appetite and weight, and no increased activity at the diseased focus in the lung. Even with care one is liable to overshoot the mark and produce some focal reaction, but if a rectal temperature be taken, this can be perceived at once, and the next dose reduced in amount.

I first noticed local reactions when I began giving tuberculin in 1909. I am aware that Carl Spengler has given tuberculin injected into the forearm, but the reason for this being done in my cases was at first simply on account of convenience. Subsequently, when visiting other sanatoriums to study the question, I found that it was difficult to follow local reactions when the injections were made into more fleshy parts. However, so much has been written upon tuberculosis that it is almost impossible to read everything—indeed, if one does, the result is only likely to produce a feeling of incompetence in oneself, or to tempt one to go from treatment to treatment whilst the patient is getting worse. I have no particular wish to claim any originality in the matter, for if I really knew, I have no doubt someone else has pointed out that *with a severe local reaction it does not necessarily follow there will be any focal reaction*, and this, together with the necessity of taking a rectal temperature (a method I first learned to appreciate through the kindness of Dr. H. G. Felkin, of the Linford Sanatorium), are the matters which I wish to lay stress on, the most important temperature being that taken before rising in the morning.

I am, Sir, yours faithfully,

Ayrshire Sanatorium, Jan. 22nd, 1912. EDWARD E. PREST.

PSYCHOTHERAPY AND GENERAL MEDICINE.

To the Editor of THE LANCET.

SIR,—May I have space for a brief answer to Dr. E. Ash's letter on the above-named subject in THE LANCET of Jan. 27th?

1. Dr. Ash complains because I applied the word "chicanery" to the methods of bald suggestion. The word was certainly ill-chosen, and I withdraw it; for it imports not only deception but unworthy deception, and this last I did not intend to imply. For the rest, I conceive that when a man surrenders his judgment to another and accepts without criticism whatever he is told, then he is allowing himself to be imposed upon, even though the imposition be practised for his advantage. It was in the sense of such deception as this that my remark was meant; and I was far from wishing to asperse the integrity of those who employ direct suggestion.

2. Dr. Ash considers that what I described as "rational psychotherapy" is equivalent to "psycho-analysis" done badly. This is not the case, however, and I should be sorry if the two were at all confounded. For what I described is at the worst harmless, while I doubt whether so much can be said for the other, presuming that the method of Freud is the one indicated by my critic. Psycho-analysis seeks (by methods which do not commend themselves to me) to unearth past emotions which, though long since forgotten and lost to consciousness, are yet capable, so it is said, of perpetrating mischief upon the patient. There is nothing so abstruse or dubious about the proceeding I urged, which, from the diagnostic side, amounts to little more than this: that one should be on the look-out to detect the occasions on which a patient consciously withholds from the doctor his ill-founded but damaging apprehensions of physical disease, while he emphasises to a deceptive extent the symptoms upon which those apprehensions are based.

3. Dr. Ash credits me with claiming that "rational psychotherapy" is immeasurably superior to direct methods of suggestion. I am pretty sure that no such claim can be read into the article with justice. For I was at pains to write with the moderation demanded both by my own experiences of the method I wrote of and by my ignorance (correctly surmised by Dr. Ash) of the practice of direct suggestion. It does, indeed, seem to me axiomatic that of two methods, one of which appeals to reason and the other (frankly) to something quite remote from reason, the former is likely to be the more healthy for the patient, and should be chosen if possible. But the choice is not always open, and I can imagine well that many patients who are beyond the reach of "rational psychotherapy" might be amenable to the methods of my critic. They will be, however, people whose loss of mental equilibrium is more profound than is the case with the classes of invalid to which my article referred, the latter being typified by the common run of patients who attend the medical practice of a general hospital, not those who are hovering between the neurologist and the alienist.

4. It is undoubtedly true, as your correspondent says, that an element of direct suggestion enters, in practice, into "rational psychotherapy," but this fact does not seem to me to stultify the essential objective of the method, which is to appeal to the patient's reason.

I am, Sir, yours faithfully,

WILLIAM P. S. BRANSON.

Devonshire-place, W., Jan. 28th, 1912.

THE MEDICAL PROFESSION AND THE NATIONAL INSURANCE ACT.

To the Editor of THE LANCET.

SIR,—I was glad to see the able letter of Dr. E. T. Larkam in THE LANCET of Jan. 27th. He goes to the whole root of the matter when he says that independence is the primary and essential requisite for our profession. We should all urge this as our first principle, and be satisfied with nothing less. What good are the "cardinal points" if they are under the control of—and administered by—committees composed chiefly of adherents of un-Friendly Societies? "That were low indeed, That were a shame and ignominy beneath this downfall"!

I am, Sir, yours faithfully,

Winchester, Jan. 29th, 1912. W. HARMAN.

To the Editor of THE LANCET.

SIR,—At a meeting of the council of the British Hospitals Association on Jan. 18th the following resolution was unanimously carried:—

The British Hospitals Association is strongly of opinion that upon the Insurance Act coming into force insured persons, except for accidents or sudden emergency, should no longer be received in the out-patient or casualty departments unless accompanied by a certificate or introduced personally by the medical practitioner who is in attendance, and in such a case after consultation he should be referred back to the same medical attendant, with an expression of the opinion of the hospital physician or surgeon on the case.

And that a list of all such insured persons, and the practitioners by whom they are sent, should be forwarded to the Insurance Committees of the district periodically.

With regard to the in-patients, the council are drawing up

a general statement for the information of members of the association upon the bearing of the Insurance Act on the in-patients, which will be sent out shortly.

I am, Sir, yours faithfully,

A. WILLIAM WEST.
Chairman of Council.
E. STEWART JOHNSON,
Hon. Treasurer.
DONALD J. MACKINTOSH,
Hon. Secretary.

Jan. 24th, 1912.

To the Editor of THE LANCET.

SIR,—In deciding the mode of payment to be adopted do not let us forget the ever recurring epidemics of influenza and the appalling amount of extra work thereby incurred for which hitherto we have never received an extra penny from the so-called Friendly Societies. In rural districts these epidemics are much to be dreaded. Since the beginning of the year I have scarcely had a spare moment owing to this disease.

I am, Sir, yours faithfully,

T. CUMING ASKIN, M.D. Dub.

Alderton, Woodbridge, Suffolk, Jan. 29th, 1912.

To the Editor of THE LANCET.

SIR,—It has been decided to hold a special Representative meeting of the British Medical Association on Feb. 21st in order to determine the position that the Association is to take up with regard to the National Insurance Act. It is generally recognised that the decisions come to at that meeting will have a momentous effect on the practices of present members of the profession, on their successors, on the advance of medicine, and ultimately on public health. It is, therefore, most desirable that those medical practitioners who propose to instruct these Representatives should be conversant with the actual details of the Act and not allow their minds to be swayed by side issues.

No better means could be found for placing medical constituents in a position to give sound instructions than for them to use the interval, before they have to come together in a Division meeting of the Association, to hold several small informal meetings amongst themselves. These meetings need not be of long duration, should not be made an excuse for speeches, but rather should be educational in their aim and devoted to an exchange of ideas. They could be arranged by any member inviting those in his immediate neighbourhood to discuss the subject with him. Possibly it might be desirable to hold a separate meeting for the consideration of certain subjects, and so to limit the range of discussion on each occasion. Subjects that suggest themselves are the relation of the Act to (1) club practice; (2) private practice; (3) charitable medical services; (4) existing State medical services. It would prove useful if before attending these meetings each practitioner were to read through the following sections of the Act: Sections 1; 8; 10 (1); 11; 12; 14 (1), (4); 15; 16; 17; 18 (1); 19; 20; 21; 37 (1) (*a*); Schedule 4, Part 2; 42; 45 (1) (*d*); 46 (2) (11), (3) (*f*), (3) (*h*); 48 (12); 51 (*i*); 57 (1); 58; 59; 60 (1) (1); 60 (2); 61 (1) and (2); 62; 63 (1); 64 and (2); 65; 69 (1); 78; 83.

Were hundreds of such informal meetings held throughout the United Kingdom during the next few days there would be less heard in the Association of demands for an amending Act, when all that could possibly be required is obtainable in the Regulations (see Sections 65 and 78); of the incompetency of the electors to instruct their Representatives; and of the failure of these Representatives to deal adequately with the situation created by the National Insurance Act.

I am, Sir, yours faithfully,

Jan. 28th, 1912. SPECTATOR.

ROENTGEN SOCIETY.—A meeting of this society will be held on Tuesday next, Feb. 6th, at the Institution of Electrical Engineers, Victoria Embankment, London, W.C., at 8.15 P.M., when a paper on After-glow in Vacuum Discharge Tubes will be read by the Hon. R. J. Strutt, F.R.S. The honorary secretaries are Dr. F. Harrison Low, 13, Wimpole-street, W., and Dr. Robert Knox, 7, Harley-street, W.

MOTORING NOTES.

(FROM A SPECIAL CORRESPONDENT.)

Motor-car Licences.

UNDER the Finance (1909–10) Act, 1910, Section 86 (4), it is provided that if any motor-car is kept by a medical man for the purpose of his profession, he shall be entitled to an allowance in respect of the duty payable under this section on the licence for the car equal to half the amount of duty so payable. Practitioners claiming this should ask at any post office for Form No. 1A, and fill in that form instead of the usual Form No. 1. In London this form, together with the duty, should be sent direct to the Comptroller, London County Council, 23, Cockspur-street, S.W. In other counties this form must first be certified by the local licence authority.

The 12 h.p. Rover Car.

For many years the Rover Co., Limited, of Meteor Works, Coventry, and New Oxford-street, London, W.C., have enjoyed, especially among doctors, the best of reputations, and deservedly so, on account of their excellent 6 and 8 h.p. cars, which many of the profession have run with success, and, what is more, disposed of at very good prices when their "motor fever" had become more acute and they had decided to buy a larger and more powerful car. The one point which I believe proves, more than anything else, the reputation of a car is the value that a second-hand one fetches, and I have heard of a Rover which, after six months' use, fetched within 20 per cent. of its original cost.

A particular aspect of the new Rover Car is that it is fitted with a Silent Knight engine, which is made at the Meteor Works under the same patents as those of the Daimler, Panhard, and Minerva Companies. The fact that so many firms have adopted slide valve engines, and that the Daimler Co. have now sold them for some three years, is unquestionably a proof that the type answers, "F.R.C.S. Eng.," writing in THE LANCET of July 8th last year (p. 124), states that he ran a 15 h.p. Daimler fitted with this type of engine 5203 miles in a year, and that the only mechanical breakdown in that period was caused by the fracture of a ball race. Yet I do like the old poppet valve engine, and when anyone holds forth too enthusiastically on the other I always think that, if the inventions had come in the reverse order, the originators of the poppet type would have proclaimed the simplicity of the poppet over the slide valve.

The engine of the new 12 h.p. Rover is a two-cylinder one, bore 96 mm., stroke 130 mm., which means to doctors a tax of £1 11*s.* 6*d.* Except that it has only two cylinders, it is similar in construction to the four-cylinder Silent Knight Daimler described on p. 1025 in THE LANCET of April 15th, 1911. The oil-troughs under the big ends of the connecting rods have not a variable depth. The oil is pumped from the sump to the receptacles beneath the big ends, which are fitted with scoops. These pick up the lubricant as the engine revolves and splash it on to the pistons, sleeves, and bearings, when it passes through a gauze back to the sump. All that is required is to fill up with oil until it escapes from an overflow tap. Two small pumps convey the oil to the troughs, and a third pump, by a pipe outside the crank-case, with a branch to an indicator of large size on the dash, conveys oil to the worm-gear driving the water-pump and magneto. An adjusting screw to regulate the supply is fitted near the crank-case, so there is no possibility of any oil leaking on to the dash, which is a common occurrence when it is placed near the drip. As long as oil passes through the indicator the lubrication is complete. As the combustion heads are machined, pre-ignition from carbon deposit in these particular places is unlikely to occur; but if there is excessive over-lubrication the piston head may become sooted, and so cause explosion of the mixture prior to complete compression. On these cars the cylinder heads can easily be removed, and thus any deposit of burnt oil may be scraped away. This, however, should not be needed more than once in two years, and perhaps not even then if the lubrication is correctly adjusted.

The carburettor is of the two-jet type, and gives the fullest power of which the engine is capable. It has—what I believe is the one important feature that all carburettors should possess—a jet which can be easily taken out. A

satisfactory petrol filter is fitted. The water is circulated by a centrifugal pump driven by worm-gearing, and has the advantage that, should by any possibility anything happen to it, there is still a clear passage for the cooling fluid to pass properly. The radiator is of the honeycomb pattern, and is attached to the frame by hinges, so that road shocks are not likely to cause it to leak. A fan is fitted behind, but the circulation is so efficient that the makers recommend running without it in winter. The ignition is the Bosch duplex, consisting of a high tension magneto and a small and compact switch and coil, which latter is in connexion with the primary winding of the magneto, the effect of this being that by the aid of a four-volt battery the output of the magneto is increased by self-induction, and at even very low speeds a strong spark is induced, and the engine can always be easily started. The coil is not intended for continuous running, and when the engine has started the switch should be turned over to the magneto position. The clutch is of the flat metal plate type, consisting of the main clutch body, two steel and three phosphor bronze plates, and a back compression ring operated on by three levers, which are either compressed or released by means of the clutch spring or clutch pedal respectively. It can be easily removed without taking down the gearbox or engine, and runs practically dry. All that is needful when reassembling the plates is lightly to smear them with oil.

Opinions, I know, differ as to whether a leather-faced cone clutch or a multiple disc is the best. Personally, I believe that either, if well made, acts equally well, and certainly the Rover type of the latter is well made, grips well without being fierce, and on the test I gave it certainly the multiple disc was ideal. The gearbox is fitted with a gate change, and the change speed levers and quadrant are connected direct to the gearbox by means of an aluminium casing, so that any slight movement in the frame, due to road shocks, cannot affect the change speed, which I found always to work easily and smoothly. Three speeds forward are provided, and though I know there are many advocates of four it seemed to me that three are ample for a car of this power. All the gear shafts run on ball bearings. Between the clutch and the gearbox the coupling takes the form of a double universal joint, one-half of the star variety, the other of the sliding block kind, which permits of the movement required to withdraw the clutch. A flexible union like this appears undoubtedly to have an advantage over what is known as the unit system, in which the engine and gearbox are either made in one piece or are bolted together so that they are solid. The final drive is by an encased propeller shaft, with a ball type universal joint at the front end, to a worm drive back axle, with the worm on top of the worm wheel. This gives greater clearance, and gets the whole of the transmission from the engine to the back axle in line, a method that gives longer life to the universal joint. Those who fit the worm below ignore the wear their method entails on the universal joint, and claim that the freedom they obtain from bed wear compensates. In a well-supported worm, such as on this car, the fear of bed wear may, however, be disregarded. Both brakes are applied directly to the back wheels, and are of the internal expanding variety, the expanding segments taking effect upon concentric drums, the hand-worked one acting on the smaller drum, and the pedal controlled one on the outer. It certainly does seem a great advantage that the brake strain is direct and not conducted through the gears, as is the case with the ordinary propeller-shaft brake.

The springs are semi-elliptical. Daimler pattern supplementary coil springs are fitted to the back of the rear springs, which are really shock absorbers, and make the springing of the car most luxurious, eliminating the evil effects arising from unevenness of road surface, and thus doing away with slipping between the tyre tread and the road, and effecting a saving in the wear of the tyre. I understand that on these cars as much as 8000 miles can be had out of the back tyres. A small but useful refinement is that the spring ends and shackles are fitted with greasers, and if these are but kept replenished the rattle which occurs in so many cars at these points should be avoided. The petrol tank is on the dash and is filled from inside the car. The undershield extends back to the gearbox. The tyres are Dunlop 810 mm. by 90 mm.

The standard body is flush-sided, of a torpedo type, and is ideal for the profession. With the hood up ample protection is given in all kinds of weather, and the scuttle dash and high side doors are certainly a great improvement on the old pattern type of body which left the front seat occupants so exposed to the elements. I would suggest, however, that in hot weather a ventilator might be fitted, as the heat from the engine makes the front compartment rather close and hot.

I spent a morning in visiting patients and in driving over all the villainously bumpy roads I could find—and Kent still boasts a few—and yet we travelled wonderfully comfortable. Most hills were easily climbed on second speed, and only on hills such as Willenhall-road, Woolwich, 1 in 5, was the first needed. Both in the open country and in traffic the car was simplicity itself to drive, and in addition, whether crawling through Victoria-street, Westminster, or at high speed over Dartford Heath, the engine sensation was of the smoothest, and the pull continuous and regular. I have seldom handled a car which gave more pleasure to drive, and I can certainly strongly recommend it as a suitable mount for medical men.

MANCHESTER.

(FROM OUR OWN CORRESPONDENT.)

Manchester Drainage Scheme.

THE city surveyor, Mr. T. de Courcy Mead, on Jan. 22nd, in a lecture on this subject, said that a hundred years ago the open country was within a few minutes' walk from any part of the town. The inadequacy of the present system of sewers was well known, hence the scheme to provide better sewerage arrangements. Manchester was incorporated in 1838, and in 1853 the borough was constituted a city. In 1885 the area was enlarged from about 4300 acres to about 6000. In 1890 the area reached 13,000 acres, and by other additions in 1909 the area was increased to 21,643 acres, more than five times the original area. In the same period the population increased from 222,120 to 695,173, or three times the population of 1838. The present population is 714,427. The Mersey and Irwell Joint Committee was established in 1891 to enforce the provisions of the Rivers Pollution Prevention Act, 1876. Already the sum spent under its jurisdiction is about £6,070,000, and the population in the area supervised is 2,782,215. An effluent of a high standard of purity is necessary where large volumes of sewage are discharged into a canal, as is the case in Manchester. The new works, for which Parliamentary sanction has been obtained, will cost about £1,000,000, which will be met by a loan payable over a period of 50 years. When completed the drains will be of sufficient capacity to take the sewage from an area of 60 square miles with a population of 1,500,000. When the scheme for main drainage is completed it is asserted that it "will make Manchester one of the best drained and in every respect the most sanitary city in the kingdom."

Manchester Royal Infirmary: Post-Graduate Demonstrations.

In order to suit the convenience of practitioners it has been decided to alter the day on which medical demonstrations are given from Monday to Tuesday. The surgical demonstrations will be held as heretofore on Friday. The demonstrations will accordingly be given at 4.30 o'clock every Tuesday and Friday afternoon throughout the year, with the exception of Whitsun week and the months of April, August, and September.

Verdict of "Self-murder."

The Manchester coroner held an inquest on Jan. 23rd into the death of a married woman of Bolton from lead-poisoning caused by a drug she had taken. The grave crime of taking drugs in certain circumstances, said the coroner, was very prevalent among women. If a woman deliberately made up her mind to commit that crime, and took the drug in sufficient quantities to achieve her object, she might cause her own death. At first the jury wished to return a verdict of "Accidental death" on the ground that the woman had not intended to take her own life, but the coroner pointed out that the verdict was hardly in accordance with the evidence, for the woman knew what the risk was when she took the drug, and was warned when she bought the drug. Eventually a verdict of "Self-murder" was returned.

Athletics from a Medical Viewpoint.

Dr. A. Abrahams, in lecturing on this subject in Manchester on Jan. 24th, by means of a series of instantaneous photographs taken at critical phases of the movements of high jumpers, sprinters at the start, in their progress, and at the tape, hurdle jumpers, lawn tennis players, cricketers, and footballers, showed how such photographic records might be useful in exhibiting excellences or defects in style. A committee had been appointed to collect information and to inquire into the question of athletics with a view to putting games on a scientific basis, to ascertain the best methods of training. He had not been able to convince himself that smoking made any difference, perhaps because the athlete was always a very moderate smoker. He favoured those forms of exercise which had a high psychological as well as a physical value—tennis, golf, and the like. He did not think much of the "constitutional"—of walking—nor yet of swimming, because its physiological value was low and the person was moving in an abnormal medium, and perspiration was ineffective. Rowing was really a very severe form of exercise, partly because of the peculiarities of the breathing movements of the chest.

Jewish Hospital: A King Edward Ward.

In the annual report of the Jewish Hospital, Cheetham, it is stated that the King has honoured the hospital by permitting a ward "to be named to the memory of His Majesty King Edward." During the year 693 cases were treated in the hospital and 6816 in the out-patients' department. The income fell short of the expenditure by £426. Mr. Adolph Ahrens gave a donation of £1000, while £250 each were given by Mr. Mark Shaffer and Messrs. John Levy, J. N. Levy, Harry Levy, and C. L. Levy.

Vaccination Exemptions and Officials' Fees.

In the Altrincham, Wilmslow, and adjacent districts the increasing number of vaccination exemptions has greatly reduced the emoluments of the vaccination officers. In view of this fact the Bucklow board of guardians on Jan. 23rd decided to pay each officer 9*d.* for each exemption granted since April last year. The first exemption was granted only four years ago.

Important Cases under the Workmen's Compensation Act.

The point as to whether a miner with only one eye can work satisfactorily at the "coal face" was raised in the Salford county court before Judge Stanger on Jan. 16th. A miner claimed compensation from his employers in respect of an accident which he met with in one of his mines in December, 1908. While working at the "coal face" he was struck by a piece of ironstone on the right eye. Compensation was paid at the rate of 15*s.* 7*d.* per week until April, 1910. Other and lighter work was found for him for which he was paid 3*s.* 7*d.* per day with 6*s.* 7*d* per week partial compensation until August, 1911, when his employers considered him fit to go back to his work as miner. The question raised was whether a man who had practically lost the sight of one eye was fit to work at the "coal face," or only able to do the easier work which a day wageman has to do. It was contended that as the plaintiff was 52 years of age, and had lost an eye at that age, after 30 years in the mine, it was practically impossible for him to adapt himself to the altered conditions, having acquired his skill with the full use of his sight. Evidence was given for the defence that the injured organ had still a certain amount of capacity. The judge found that the man was not fit to work in the mine, but only on the surface, and awarded compensation at the rate of 6*s.* per week.

Another unusual case came before Judge Mellor on Jan. 25th. The applicant was married to her late husband in March, 1910, and he was killed while working as a carter for the defendant in June of last year. The widow had signed a paper expressing her willingness to accept £170 in full settlement. If she was wholly dependent she would be entitled to a full three years' wages amounting to £232. Before marriage she had earned 15*s.* per week; after marriage she continued to work and was still doing so. The registrar refused to sanction the settlement on the ground that the amount was not adequate. Ultimately a judgment for £192 was pronounced, as the widow was not wholly dependent on the wages of her late husband.

Large Bequests for Hospitals and Charities.

Miss Helen Swindells, of Elmstead, Birkdale (formerly of Bowdon), has left bequests, all free of duty, which include the following:—University of Manchester, to be applied by the Council of the University in aid of the Cancer Research and Pathological Department of the said University, £5000; Manchester Royal Infirmary, £4000; Manchester Hospital for Consumption, Hardman-street, and St. Mary's Hospital, Manchester, each £3000; Devonshire Hospital and Buxton Bath Charity, Northern Counties Hospital for Incurables, Manchester Children's Hospital, Pendlebury, Boys' and Girls' Refuges, Strangeways, Charter-street Ragged Schools, Street Children's Mission, Wood-street, and Crippled Children's Help Society, Cross-street, each £2000; Southport and Birkdale Nursing Society, £1000; and the sum of £5000 to form a fund for distressed ladies.

Cost of Lunatics in Lancashire.

At the Ashton board of guardians there was a call from the county council for £18 369. This is largely due to the increased cost of lunatics.

Jan. 30th.

BRISTOL AND THE WESTERN COUNTIES.

(FROM OUR OWN CORRESPONDENTS.)

Hospital Sunday in Bristol.

THE collections for the Lord Mayor's Hospital Sunday Fund were taken in Bristol on Jan. 28th. The statement issued showed that the four principal institutions—the Royal Infirmary, the General Hospital, the Children's Hospital, and the Eye Hospital—had been responsible for the treatment of over 110,000 persons during 1910, their total ordinary income amounting to £7000 less than their ordinary expenditure. During the years of its existence this fund has amounted to over £23,000. The result of this year's collections is, of course, not yet known, so that it is impossible to say whether the total will be influenced by the Insurance Act. The Lord Mayor, Mr. F. W. Wills, speaking at the Colston Hall on the Sunday afternoon, pointed out that the illness for which treatment was provided by the Act was of a different type from that for which the hospitals were responsible, and that it was therefore as necessary as ever to subscribe liberally to their support. It was also pointed out from at least one pulpit in the city that the Act does not come into operation for six months, and that it is therefore incumbent on the citizens to provide for the upkeep of their hospitals during that period on the same scale as heretofore. There is unfortunately reason to believe that the subscription lists are already suffering as a result of the Act; whether this falling-off is temporary or permanent remains to be seen, and it is not yet possible to ascertain the effect of the Act on the contributions of workpeople, which form a large proportion of the regular income of the Bristol hospitals. At the General Hospital and at the Royal Infirmary the extension schemes, which are being pushed forward, show no signs of interruption, the committees no doubt realising that the public will need hospitals in the future as in the past, and that money will have to be found for their support, whether voluntarily or through Government channels.

Bristol Eye Hospital.

The 101st annual meeting of the Bristol Eye Hospital was held last week, the Lord Mayor being in the chair. The annual report stated that the increased accommodation provided by the centenary collections had been fully utilised; there had been 578 in-patients and 8258 out-patients, an increase of 131 and 1257 respectively over the preceding year. There was a deficit of £47 on the year, which would have been much greater had it not been for large anonymous donations given in response to an urgent appeal made through the press towards the end of the year. An additional £500 yearly in subscriptions is absolutely necessary. The Lord Mayor said that he had been surprised to find from the report how large a number of the patients came from outlying towns and villages, and he had felt this to be so important that he had addressed a special appeal for help through the Sunday Fund to the clergy of the various places sending patients to the hospital. Mr. F. Richardson Cross said, in reference to the Insurance Act, that its probable result would be to increase, and not to relieve, the work of the hospital. He also stated that no less than 932 of the patients seen at the

hospital during 1911 came from the school medical officers, although the education committee made no contribution whatever to the funds of the institution. As most of these are refraction cases a considerable strain is added to the already arduous work of the staff.

Lectures to Voluntary Health Visitors.

The first of a series of elementary lectures for voluntary health visitors and others, arranged jointly by the Mothers' School, the Civic League, and the Bristol Women's Local Government Association, was given last week at the University of Bristol by Dr. Annie Cornall.

The Residence of a District Medical Officer.

There has recently been some discussion by the Plymouth board of guardians in reference to the residence of one of its district medical officers. The gentleman in question does not reside in his district, but has a branch surgery there in telephonic communication with his house. The Local Government Board was prepared to sanction the appointment for three years. After several guardians had spoken highly of the medical officer's kindness to the poor, a resolution that he should be appointed for three years was defeated by four votes. It was then proposed that the appointment should be advertised, but eventually an amendment was carried to the effect that the medical officer should be given another opportunity to comply with the guardians' requirement that he should reside in his district.

Boric Acid in Sausages.

At the Exeter police court on Jan. 19th a local tradesman was summoned for selling sausages containing boric acid. Evidence showed that 1 lb. of sausages contained 52·5 grains of boric acid. The bench fined the defendant £2 and costs.

Proposed School Clinic at Plymouth.

The clinics subcommittee of the Plymouth Education Committee has recommended that the Board of Education be asked to give its approval to a scheme for providing a clinic for the children of parents who cannot afford to pay for a private medical man or who cannot obtain treatment at the various medical institutions in the town. The subcommittee recommends that the conditions treated by the school medical officer should be extractions of teeth, defects of ear (suppurative), skin diseases (including ringworm, scabies, and impetigo contagiosa), and pediculosis of the scalp and body. The subcommittee adds that it is impossible to state with any degree of certainty the number of children who will require treatment, and recommends that the school medical officer should have his salary increased by £50 per annum for the extra work he will be called upon to perform, and that the sum of £100 should be the limit of this expenditure for the financial year.

The Teignmouth (Devon) Hospital.

At the annual meeting of the subscribers of the Teignmouth Hospital held on Jan. 24th it was stated that the charity had been without a house surgeon for some six months, and that the duties had been performed by the honorary medical staff. Some discussion took place upon the question of obtaining a house surgeon, and it was thought that the salary of £80 per annum, which was offered, was not sufficient. Eventually it was decided that the medical staff should report upon the subject to the committee.

The South Devon and East Cornwall Hospital, Plymouth.

The treasurer of the South Devon and East Cornwall Hospital states that during 1911 the institution received £838 from the Hospital Sunday Fund and £581 from the Hospital Saturday collections.

Death of Brigade-Surgeon-Lieut.-Colonel T. G. Skardon.

Brigade-Surgeon Thomas Gray Skardon died at his residence, "Simla," Paignton, Devon, on Jan. 24th, aged 75 years. He received his medical education at St. Thomas's Hospital, London, and took the M.R.C.S. qualification in 1859. A year later he entered the Indian Medical Service, serving with the Bengal Army. After 25 years' service in India he retired and took up his residence at Paignton. He soon became very popular there, and took great interest in all local matters. He was a staunch Churchman, and with some other residents was instrumental in the building of Christ Church, Paignton. He was greatly interested in missionary work. The funeral took place at Maker, near Plymouth.

Death of Dr. William Dashwood Kingdon.

Dr. W. Dashwood Kingdon died on Jan. 20th at his residence, Heavitree House, Exeter, in his ninety-ninth year. The deceased, who received his medical education at Edinburgh University, graduated M.D. in 1837, and in the same year was admitted L.R.C.S. of Edinburgh. Dr. Kingdon was well known and highly respected at Exeter, and was at one time physician to the Exeter Dispensary and resident medical superintendent of St. Thomas's Lunatic Hospital, Exeter. He had retired from active work for some years. He took a great interest in Freemasonry, and was stated to be the oldest "Mason" in the world. The funeral took place at the Higher Cemetery, Exeter, on Jan. 25th.

Jan. 30th.

IRELAND.

(FROM OUR OWN CORRESPONDENTS.)

The National Insurance Act.

CONSIDERABLE surprise is felt and expressed that the Insurance Commissioners, in their letter of Jan. 24th, addressed to the British Medical Association, asking them to appoint 20 members, selected from England, Scotland, and Wales, to attend a conference on Feb. 2nd, have totally ignored Ireland. Ireland has no medical benefits, it is true; but, on the other hand, workmen who come over to Ireland from other parts of the United Kingdom, having previously registered there, will be entitled to receive medical benefits while in Ireland, and in that country sanatorium and maternity benefits exist under the Act. All sorts of medical certificates, moreover, will be required, so it is not clear why Irish practitioners are not asked to join in this preliminary conference. At a meeting of the Ulster Branch of the British Medical Association held in Belfast on Jan. 25th a discussion took place in reference to the appointment of an organising committee for Ulster, and it was finally decided to ask the Council of the Ulster Branch to select the names, taking care that the various towns and districts were fully represented. The Presbyterian Church of Ireland and the Methodist Church are taking action to form approved societies under the Act, and it is also stated the Church of Ireland will act in the same direction.

Irish Milk-supply.

The Vice-Regal Commission on Irish Milk-supply has continued its sittings. Last week Mr. E. Kennedy, of Straffan Station Stud, expressed the opinion that tuberculous disease was increasing steadily among cattle. Tainted milk was mixed in the same creamery vat with sound milk, and all the milk became tainted. He believed that an increased percentage of affected cattle was caused by feeding calves on separated milk and by the bad conditions in which the cattle were housed. A regular and recognised trade was being done at fairs in these tuberculous cattle, or "spiners." Cattle in an advanced state were sold as "sausage meat." Miss Martha Lough, of Killeshandra, on the other hand, said she was a strong believer in separated milk, and thought it a most useful food for calves and people. Mr. J. H. M'Grane, dairy inspector, South Dublin district council, was not aware of a single case in his district of infectious disease being traced to a dairy, or having been disseminated by the milk of the district. Mr. J. D. Richardson, veterinary inspector, North and South Dublin rural district councils, said that the number of diseased animals in his district had considerably decreased during the past three years. In the city the owner of an animal that was destroyed was compensated, but in rural districts no compensation was given to the owner. He was in favour of the licensing of dairy proprietors. Dr. John Lumsden, physician to Mercer's Hospital and chief medical officer to Guinness's brewery, said that since 1908 he had had under observation 120 sick babies that were supplied with milk from the depôt of the Women's Health Association at Sitric-road, and among the 120 only 5 deaths had occurred, the ratio being 41 per 1000, as compared with 145 in the city. He had never seen any harm result from the use of pasteurised milk. As a clinical observer he had seen no harm result from the use of boiled milk.

Reception at the Royal College of Surgeons.

The President of the Royal College of Surgeons and Mrs. Robert Woods gave a reception to a large number of visitors

last Saturday evening at the College, to have the honour of meeting their Excellencies the Lord Lieutenant and the Countess of Aberdeen. Uniforms, decorations, and academic robes were worn. Objects of scientific interest were exhibited by Professor J. A. Scott and Professor Arthur H. White, and adulterants of food were shown by Sir Charles Cameron. The reception was attended by a large number of medical men, as well as by representatives of various other professions. The College has rarely, if ever before, been thrown open for an evening party.

Research Defence Society: Dublin Branch.

The annual meeting of this branch was held on Jan. 25th, Sir Charles Ball presiding. The annual report stated that the number of members was over 500. A ladies' committee had been formed, which had undertaken to arrange drawing-room meetings at which information should be given as to the objects of the society. A lecture was delivered by Dr. Leonard Hill, professor of physiology in the London Hospital Medical College, on "Submarine Diving Made Safe and Possible through Experiments on Animals." He dealt with what has so far been accomplished through the medium of scientific research, by means of experiments on animals, to make the operation of compressed air work safe for those engaged in it. He mentioned that formerly work, such as the building of harbours, piers, &c., was attended with great danger to life and health, but scientific investigation had done much to show that those evils could be avoided, new and improved methods having been discovered as a result of experiments which had been made upon such animals as frogs, rabbits, and cats, and the work could now be carried out with safety. One of the most important discoveries had been made by Dr. John S. Haldane, a distinguished member of the Research Society, who proved that in deep-sea diving illness among divers was caused, not by increased pressure, but by insufficient air. By using additional pumps increased pressure was forced down to the diver, who was enabled to overcome carbonic acid poisoning.

The Belfast Medical Students' Association.

At the annual public meeting of this association, held on Jan. 27th in the Students' Union of the Queen's University of Belfast, the inaugural address was delivered by Dr. W. W. D. Thomson, the new President, on the Struggle for Truth in Medical Science throughout the Ages. Sir Thomas Myles, of Dublin, followed with an address on the Medical Student as I Know Him.

The Belfast Hospital for Sick Children.

At the thirty-ninth annual meeting of this institution held on Jan. 25th the medical and surgical report, submitted by Dr. John McCaw, secretary of the medical staff, showed that during the past year 672 patients had been treated in the wards (361 medical and 311 surgical), while in the out-patient departments 3936 new cases were registered. Thirty-one senior students are attending the clinics, the local Queen's University having wisely made diseases of children a compulsory subject for those seeking its medical degrees, as well as requiring candidates to produce a certificate of having attended a special practical course in hospital on diseases of children. Fears were expressed both in the report and by subsequent speakers as to the serious effect of the Insurance Act on subscribers to the hospital, especially as children paid no insurance and received no benefits under that measure.

Londonderry Nursing Society.

At the annual meeting of this society held in Londonderry on Jan. 23rd, the Duchess of Abercorn presiding, a very satisfactory report was read. Dr. G. B. McCaul mentioned that during the year 1339 new cases had been attended to by the nurses. Lady Hermione Blackwood also gave an address at the meeting.

Appeal on Behalf of Miss Daly.

An appeal signed by Dr. M. Cagney, of South Mall, Cork, and Mr. Philip G. Lee, of St. Patrick's Hill, Cork (either of whom will receive subscriptions), has been issued to the Cork medical profession on behalf of Miss Daly, who through the death of her brother, the late Dr. Pierce J. Daly, of Cork, is now left absolutely devoid of means, and in shattered health in consequence of long years of devoted nursing. Subscriptions to the extent of £395 have so far been made, but a more liberal and substantial response will be required in order to enable her to avoid having to enter a public charitable institution.

Jan. 30th.

PARIS.

(FROM OUR OWN CORRESPONDENT.)

The Sale of Quinine in Annam.

THE Chief Resident in Annam has taken the following measures for the sale of quinine at a low price, its free distribution being for the time suspended. The sulphate in compressed tablets will be used. The price for each province will be settled by the Resident at a round sum without any profit for the administration. A central depôt will be established at the principal settlement, under the control of the chief surgeon, who will indicate the necessary depôts to be established by decree of the Resident, use being made of the wine-shops and the rural post-offices, preferably of those situated in the regions most affected by malaria. The local sanitary officers will give instruction as to the details of application, and will take advantage of their tours of duty to inform the natives of these plans, the dose, method of use, and price of the drug. Posters containing like information will also be affixed on the doors of the secondary depôts.

Special Rights of Way for Paris Medical Men.

M. Massard, a municipal councillor, has laid before the council a measure the adoption of which would render great service to Paris medical men. It calls on the Prefecture of Police to establish a special right of way for medical men, conferring on them the right of priority in public vehicles, to be obtained by extra payments, and of having first access to the Metropolitain. This measure is all the more justifiable inasmuch as medical men are not usually too well off, and in the matter of transport they make use for the most part of the public means of conveyance, while their engagements are always a matter of urgency. The badges issued to journalists are useful, but a special badge would be quite fitting and certainly as useful for medical men, who should not be hindered in the discharge of their duty.

Preserving the Transparency of the Human Cornea.

The transparency of the cornea of the eye is of great delicacy. Very quickly after the removal of the eye, or after death, the eye becomes glazed and its epithelium desquamates. M. Magitot recently reported to the Academy of Sciences his success in preserving for 15 days after removal the optical qualities of a human eye from which a graft was to be made. A glaucomatous eye had to be removed on account of intolerable pain. Sight in this eye had been definitely lost for months, and it was so tense that the cornea was insensitive and even opalescent. The entire eye, immediately on enucleation, was washed in Locke's solution, and immersed with all aseptic precautions in a flask containing blood serum from another person. It was then put in cold storage at 5 to 6° C. At the end of some hours, the internal pressure of the eye having fallen, the cornea had regained its transparency. This eye was kept for eight days. Then a rectangular piece, half the thickness of the cornea, was taken carefully and inserted into a cavity of the same dimensions made in the cornea of another patient, who some years before had had some quicklime in his right eye, in consequence of which the cornea had become opaque almost throughout. The graft from this tissue, preserved for eight days, was inserted without sutures to the right side of the pupil, thus forming a little window about 5 by 4 mm. At the end of 38 hours the transplanted tissue had perfectly adhered. For seven months the foreign tissue has now been tolerated, has retained its transparency, and affords the patient sufficient power of vision to get about with. To obtain this result the author recommends that an appropriate medium be chosen, consisting of the hæmolysed serum of an individual of the same species. The hæmolysis should be brought about by purely physical means—e.g., rapid fall of temperature by collecting the hot blood in a vessel chilled by ice. A low, but not too low, temperature is necessary, the most suitable being between 4° and 7° C., and it should be constant.

Radiography of the Viscera.

On Jan. 25th the Société de l'Internat des Hôpitaux held its first annual session under the presidency of Dr. Monprofit, the subject under consideration being radiography of the viscera. Radiography is now widely used in the diagnosis of visceral pathology, and even if it cannot furnish

a certain diagnosis, at least it helps in establishing one. All the mistakes made in radiography must be due to errors of interpretation. M. Aubourg showed on the screen M. Delherm's pictures of the lungs, demonstrating the radiographic signs by which the practitioner can diagnose tuberculosis, pulmonary congestions, abscess of the lung, cysts, with displacement of the vital organs, and diaphragmatic pleurisies. He subsequently demonstrated the stomach and intestine in like manner. M. Lebon showed pictures of the heart and the aorta, and M. Beaujard of the kidney and the bladder.

Death of Professor Albarran.

French science has been plunged into mourning by the death of Professor Albarran, who died after an illness lasting almost three years. Although born in Cuba, M. Albarran had lived nearly all his life in France. From the outset of his career he distinguished himself by his diligence, his intelligence, his accuracy, and the originality of his researches. In his promotion to the internship he came out first in the list, and received the gold medal. As a pupil of Professor Guyon he naturally followed in the same course, and succeeded him in his chair. He has done much work on the bacteriology of the urinary passages, on tumours of the bladder, prostatectomy, and catheterism of the ureter. He attained the goal of his ambition early, and has left behind him an honourable name.

Jan. 29th.

CANADA.

(FROM OUR OWN CORRESPONDENT.)

Ontario Vital Statistics, 1910.

THE Registrar-General's Department, Ontario, in the Blue-book shortly to be issued, will report for the year 1910 that there were 55,871 births, 24,036 marriages, and 33,539 deaths in the province during that year, or 24·9, 10·7, and 14 per 1000 of the estimated population. In the cities, for births, marriages, and deaths there is a ratio of 32·2, 20·2, and 21·1 per 1000, while in towns under 5000 population and the country districts the ratio is 21·6, 10·4, and 14·7 respectively. Of the total number of deaths—33,539—there were 706 from typhoid fever; 2287 from tuberculosis in all forms, which was 103 less than in 1909; cancer, 1077; diabetes, 222; anæmia, 327; meningitis, 355; apoplexy, 923; organic heart disease, 2240; broncho-pneumonia, 464; pneumonia, 1458. Diarrhœa was fatal to 1374 infants under 2 years of age, while 2455 died when under 4 months of age. In 284 cases women lost their lives in childbirth. Ninety-one persons took their lives by various methods, 26·3 per cent. by hanging; 266 were drowned; 209 killed by motor-cars; and 17 homicides. Old age was the cause of death in 3429 persons. There were 2207 stillbirths. In infants 6649 died under one year of age, 917 one year old, 424 two years old, 321 three years old, and 247 four years old. The male children born numbered 28,664 and female 27,207. There were 370 pairs of twins, 364 boys and 376 girls; and triplets in five cases, 9 boys and 6 girls. Of the men who married about one-third did so between the ages of 20 and 24, and nearly one-half the women between those ages. Out of a total of 7351 Roman Catholics married, 1509 married out of their denomination, and this in spite of the *ne temere* decree, over which there has been so much discussion in Canada the last two years. Of the grooms, 665 married non-Catholic brides, while 844 professed Catholic girls married non-Catholic grooms. The larger number of these mixed marriages was between Catholics and Anglicans.

The Division of Professional Fees in Toronto.

Early in the year 1908 some interesting letters appeared in THE LANCET on the question of the division of the operation fee between the operator and the general practitioner, and a leading article also dealt with the matter.[1] Recently a motion at a meeting of the Academy of Medicine, Toronto, set out that the *secret* division of a fee or fees with any person or persons who may be instrumental in influencing a patient or patients to apply for operative care or professional advice is unworthy of any member of the medical profession. The motion further asserted that it would be the duty of the council of the Academy to investigate charges under this heading against members, and on proof of guilt either to permit the resignation of the offender or to expel him from the Academy. The questionable practice known as dichotomy has infected the medical life of the United States. The Canadian profession, however, take their professional ethics more from Great Britain. After an extended discussion the Academy has referred the matter to a special committee, which is invited to submit an exhaustive report on a basis of future action.

[1] THE LANCET, vol. i., 1908, pp. 596, 676, 813, 889, 1032, 1108, 1353.

Reorganisation of Montreal Board of Health.

A deputation of Montreal physicians recently waited on the Board of Control of that city asking that the civic Health Department be reorganised. From the following list of requirements it will be seen that little short of a revolution was asked for. The deputation suggested that the Health Department should control all street cleaning and sewerage; that all employees connected with the city's health should be under the control of the health officer; that there be a medical library for the use of health inspectors, and that lectures be delivered to them; that all employees of the department of health be made to pass examinations and should receive certificates; that nurses be employed to instruct young mothers in the care of infants; that the medical inspectors be given good salaries and not permitted to engage in private practice; that all cases of contagious diseases in the city be promptly reported to the Health Department by practitioners and others; that the Health Department send to the local medical profession monthly reports of the health of the city; that chemical and other departments be created and attached to the Health Department; that fines and penalties on all who disobey the health laws be made more severe; that refrigerator cars be used by railways for the conveyance of milk; that new incinerators be constructed; that steps be taken to establish tuberculosis hospitals in different parts of the city; and that vaccination be made absolutely compulsory.

Public Health Organisation in Ontario.

Dr. J. W. S. McCullough, chief medical officer for the Ontario Government, who is now in the United States investigating the most recent advances in public health matters in that country, will, on his return to Toronto, and prior to the approaching session of the Ontario Legislature, recommend the abolition of the boards of health in the counties of the province, and the substitution therefor of health districts in charge of whole-time health officers. The province will be divided into seven or eight districts, each in charge of an experienced medical man, and instead of being appointed by local authorities these will be appointed by the Government and will be directly responsible to the chief medical health officer. There are at the present time about 800 boards of health in Ontario and as many local officers. The work in most cases is very perfunctorily performed as the remuneration is decidedly small, as a rule the amount paid being less than $50. It is not intended to interfere with the boards of health in the large cities, where competent health officers are engaged with suitable salaries.

Jan. 12th.

UNITED STATES OF AMERICA.

(FROM OUR OWN CORRESPONDENTS.)

The New Surgeon-General of the United States Public Health and Marine Hospital Service.

President Taft has appointed Dr. Rupert Blue, of South Carolina, surgeon-general of the United States Public Health and Marine Hospital Service, in succession to the late Dr. Walter Wyman. Dr. Blue graduated in medicine at the University of Maryland in 1892, and entered the Public Health and Marine Hospital Service in 1893. As already mentioned in this column, he did excellent work during the plague epidemic in San Francisco. When announcing the appointment President Taft gave notice that hereafter the term of service of the surgeon-general shall be limited to four years.

The Mott Library Transferred to New York Academy of Medicine.

Dr. Valentine Mott, a well-known New York surgeon who died in 1895, left instructions with his widow that his

valuable medical library and instruments should be housed and established at the Mott Memorial Library. In 1896 Mrs. Mott bought a house in Madison-avenue for the purpose. The library was dependent upon public contributions. The trustees, discovering that it was being conducted at a loss, in accordance with a provision in Mrs. Mott's will have decided that the house shall be sold and the proceeds divided among her heirs. The contents of the library and the instruments have been turned over to the New York Academy of Medicine.

The New York Post-Graduate Hospital.

A dinner to commemorate the opening of the new buildings and laboratories of the Post-Graduate Medical School and Hospital, New York, was held at Delmonico's on Jan. 10th. More than 200 members of the staff and their guests were present. Among the speakers were Dr. Samuel W. Lambert, Dean of the College of Physicians and Surgeons of Columbia University; Brigadier-General G. H. Torney, surgeon-general of the army; Dr. Abraham Jacobi, president of the American Medical Association; and Augustus E. Thomas, the playwright.

Fire at the Massachusetts State Leper Colony.

The administration building at the Massachusetts State Leper Colony on Penikese Island was burned down on Jan. 13th, causing a loss of £2000.

The New Buildings of Harvard Medical School.

The establishment of Harvard Medical School will consist of 16 institutions when the six buildings now under construction are completed—viz., the Harvard Memorial Cancer Hospital; the Infants' Hospital, known as the Thomas Morgan Rotch, jun., building; the Children's Hospital; the Peter Bent Brigham Hospital, which has a combined fund for building and endowment of £1,200,000; the State Psychopathic Hospital; and the Robert Brigham Hospital. A project is also afoot to erect a Harvard dormitory and medical union club-house, to be conducted on principles similar to those of the Harvard Union and Dormitories, but confined exclusively to medical and dental students.

A Medical School for the University of California.

At a recent meeting of the Board of Regents of the State of California plans were adopted for the amalgamation of the various departments of medical instruction under the supervision of the University of California. It was decided to secure the services of paid instructors for clinical instruction in place of the voluntary services of practising medical men. The principal chairs of medicine, surgery, and obstetrics will be held by professional instructors, who will devote their whole time to teaching or research work.

Jan. 20th.

Obituary.

SIR HENRY TRENTHAM BUTLIN, BART., F.R.C.S. ENG.,

LATE PRESIDENT OF THE ROYAL COLLEGE OF SURGEONS OF ENGLAND AND OF THE BRITISH MEDICAL ASSOCIATION; CONSULTING SURGEON TO ST. BARTHOLOMEW'S HOSPITAL.

ON Wednesday, Jan. 24th, Sir Henry Trentham Butlin died at his residence, 82, Harley-street, after an illness of some two months' duration.

Henry Trentham Butlin was the son of a Cornish clergyman, the Rev. W. W. Butlin, and was born in 1845 at Camborne in that county. He was privately educated until he went to St. Bartholomew's Hospital, where he entered as a student in 1864. Here he commenced his medical studies under favourable auspices, for St. Bartholomew's Hospital at that time had a strong honorary staff, while among the lecturers and teachers Sir James Paget was outstanding. To him Butlin particularly attached himself, and he always acknowledged his great indebtedness to him for the professional success that fell to his share. Butlin succeeded, if anyone ever did, entirely on his own merits; he owed nothing to outside influence, to court or social connexions, or indeed to anything but his own capacity and his high character. He was remarkable as a student by his industry and intelligence, and his career is an exemplification of what these qualities can accomplish when they pursue without faltering a clear and well-defined objective.

He qualified as M.R.C.S. Eng. in 1867 and as L.R.C.P. Lond. in 1868, and in the same year became house surgeon of his hospital. On the completion of this service he entered on country practice, but almost immediately found that his ambitions were centred upon a hospital career. He returned to London in 1870, and began at once to lay the foundations of the distinguished future that was to be his. In 1871 he took the Fellowship of the Royal College of Surgeons, and in the same year was appointed surgical registrar at the Great Ormond-street Hospital for Children, and assistant surgeon to the West London Hospital. He was also connected at one time with an orthopædic hospital as well as with the Metropolitan Free Hospital.

In 1872, the post of surgical registrar at St. Bartholomew's Hospital becoming open, he gladly seized the opportunity thus afforded him of fulfilling his devoted hope of a permanent association with his hospital. In 1873 he gained the coveted Jacksonian prize at the College of Surgeons for his essay on Ununited Fractures. In 1879 he was appointed Demonstrator of Surgery at St. Bartholomew's Hospital Medical School in succession to Professor Howard Marsh, now Master of Downing College, Cambridge, and in this post he soon made an indelible mark. Butlin showed himself at once to be an admirable clinical teacher, keen of observation and accurate in deduction. In 1881 he became assistant surgeon to the hospital and lecturer on surgery. He served as assistant surgeon until 1892, when he became full surgeon, which post he relinquished only in 1902, after 21 years' service on the staff, and was then appointed to the consulting staff. The columns of THE LANCET and *British Medical Journal* testify to the value of the work he did in the hospital during this lengthy period, and it is interesting to record that Butlin, whose clinical lectures were such fine and thoughtful deliveries, disapproved of formal lectures as a part of the compulsory medical curriculum and had designed himself to make proposals for abolishing them. In 1880 Butlin was appointed Erasmus Wilson Professor of Pathology at the Royal College of Surgeons of England, being the first to occupy that post after Sir Erasmus Wilson himself, and he gave the first indications of a direction which he was to follow throughout his career in the selection of a subject for his lectures—viz., the Relations of Sarcoma to Carcinoma. These lectures admirably reflected the practical lessons to be drawn from a clinical study of malignant disease, more especially with reference to the principles governing operative interference. They were republished in book form in 1882 with valuable additions to the tables of cases and additional matter on diagnosis and treatment. Their most striking feature was the care taken to have the data as satisfactory as possible, all the cases utilised being submitted to microscopical examination and the structure of the new growths in every instance being ascertained with precision. In 1887 he published "The Operative Surgery of Malignant Diseases," a book written not to establish any new position or to defend any novel procedure, but rather to formulate the results obtained up to date, showing the bad as well as the good side of operative interference, and containing a collection of statistics that should serve both to restrain and yet to encourage the operator. He laid great stress on the importance of removing widely all malignant tumours—a principle now generally admitted and acted on. Other papers bearing on this subject were articles on tumours in the *International Cyclopædia of Surgery*, on Malignant Diseases (Sarcoma and Carcinoma) of the Larynx, and on Tumours in the third edition of Holmes's "System of Surgery." In 1892 Butlin was appointed Hunterian professor of surgery and pathology at the Royal College of Surgeons, and in 1895 he became a member of council in the presidency of the late Mr. Christopher Heath, his official connexion with the College continuing unbroken from that time on. In 1909 he succeeded Sir Henry Morris in the presidential chair, an office that he relinquished only on Nov. 9th last on account of failing health. In 1893 the University of Durham conferred on him the honorary degree of D.C.L., an example followed by the University of Birmingham in 1910 with the honorary degree of LL.D.

In his Bradshaw Lecture in 1905 Butlin insisted, in the face of the almost unanimous opinion of pathologists, "that carcinoma is a parasitic disease, not in the limited sense in which the term appears to have been used of late as synonymous with infective, but in the larger and wider sense in which it used to be, and should always be, employed, to express the fact of one organism living at the

expense of another organism, each pursuing its otherwise separate and independent existence." Of his Hunterian Oration, delivered at the College of Surgeons on Feb. 14th, 1907, it would be hardly possible to speak in terms too high. It is questionable whether on any previous occasion so adequate a tribute to the memory of John Hunter has ever been paid from that chair. Butlin insisted on the fact that the true value and greatness of Hunter's work lay in his anticipating what still needs to be impressed on many, that the key to the prevention or treatment of disease must be sought and can be found only in the investigation of natural function. He powerfully assisted his audience to grasp the fact that this position entitled Hunter to take rank, not only with the most eminent members of his own calling, but with the small band of philosophers whose researches in various departments of learning have gained for the human race its power to guide and utilise the forces of nature. To add to the charm of this oration it was delivered perfectly clearly and without hesitation as a speech, the speaker being unaided even by notes. The delivery was a triumph of accurate thinking and good memory, and reminded those who heard the oration of some of the oratorical triumphs of Butlin's dead master, Sir James Paget.

During 1910–11 Sir Henry was President of the British Medical Association, and in this capacity he was entertained on June 17th, 1911, at what is believed to be the most largely and representatively attended dinner ever given by the profession to one particular medical man. Over 200 members of the profession were present, drawn, no doubt, by varying ties, which, however, in themselves bespoke the broad gauge character of the man and his activities. As the chairman, Dr. Lauriston Shaw, then pointed out, his affiliations, not only with the British Medical Association, but with the Royal College of Surgeons of England, with the University of London, St. Bartholomew's Hospital, the Pathological and the Laryngological Societies (both now merged in the Royal Society of Medicine, and of both of which he had occupied the presidential chairs), with the Society of Surgeons of Paris and that of Laryngologists of Berlin, all combined to bring together so large and so representative a body of men to do him honour, the relationship of a trusted consulting surgeon to a large number of general practitioners helping to swell the number of those present. His connexion with the British Medical Association was a very close one; he was a member of the Council of that body for many years, of its Journal and Finance Committee, its treasurer, and, finally, in 1910–11, in which year the Association held its annual meeting in London, its President. In all these varying capacities and activities Sir Henry was successful in the most practical way—that is, he left every institution that he served distinctly and appreciably the better for his service. He was unflagging in his zeal, tactful and adaptable, yet without sacrificing his own convictions, even in those matters on which opinions ran contrary, while his gifts as a speaker materially aided every cause he supported. In all things he was guided by ardour for the highest welfare of the profession. There can be little doubt that the arduous exactions of the manifold responsibilities he took upon himself helped to undermine a physique never too strong.

Among Butlin's literary works, other than those already referred to, may be mentioned a paper on the Nature of Fur on the Tongue, published in the Proceedings of the Royal Society for 1879; a Report on Certain Tumours removed in St. Bartholomew's Hospital, with Remarks on the Growth of Fatty Tumours (St. Bartholomew's Hospital Reports, 1873–74); on Minute Anatomy of Two Breasts, the Areolæ of which had had Long-standing Eczema (Medico-Chirurgical Society's Transactions, 1876); and Reports on Cancer for the Collective Investigations (*British Medical Journal*, 1887) His book on "Diseases of the Tongue," published in 1885, was a model of concise writing, logical reasoning, and lucid exposition, particularly in the part relating to cancer, the subject to which he devoted so much of his attention throughout his professional career.

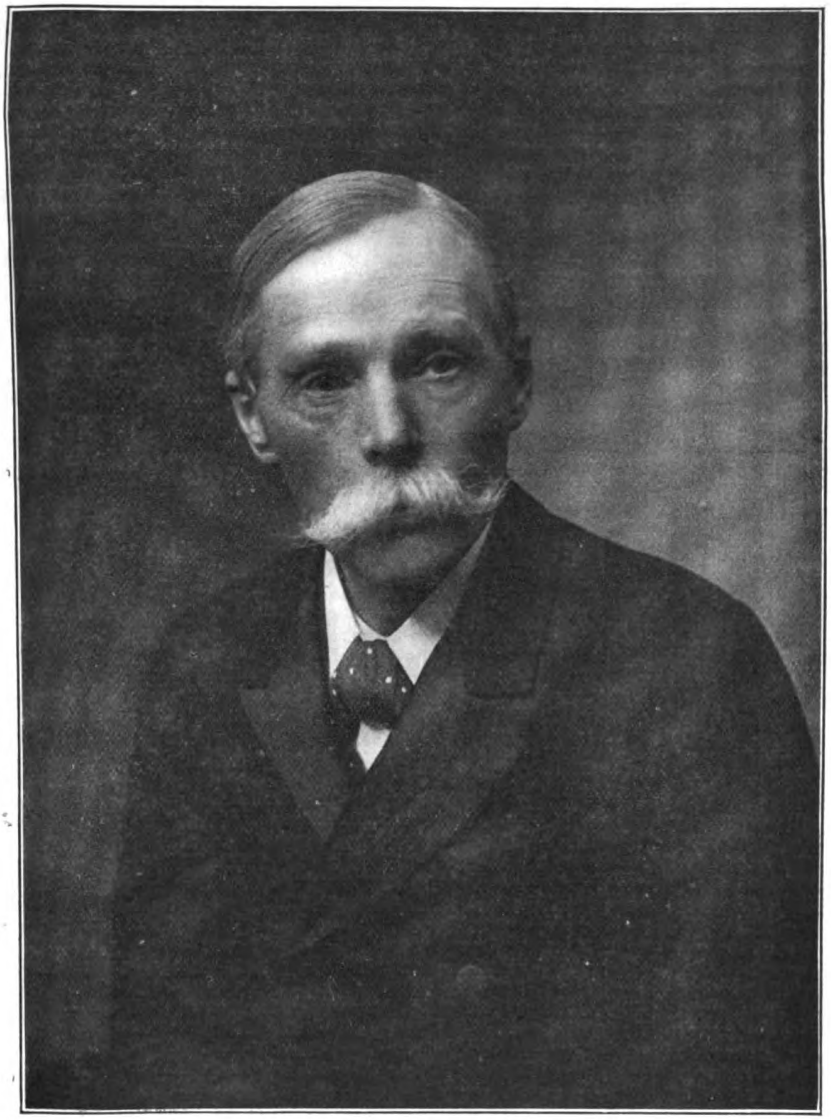
Finally must be mentioned the two lectures on Unicellula Cancri, the Parasite of Cancer, delivered by him before the Royal College of Surgeons last November, in which he expands the idea referred to in his Bradshaw lecture of 1905—viz, that the cancer cell is an independent organism, like many a protozoon; that it lives a life which is wholly independent and proper to itself; and that it lives in the body of the animal affected with the cancer, deriving its nourishment from its host and yet doing nothing to repay the host for the sustenance supplied to it. He concludes that the cancer cell is a veritable parasite formed from the very tissues of its host, remaining in appearance like the cells in which it first appears; he regards it as an independent parasitic animal which he names the unicellula cancri, and is inclined to place among the protozoa. Even if we are not able to agree with this view, the high gifts of its author and his lifetime of experience devoted to the study of the subject must surely make us suspend judgment until more conclusive findings shall either endorse or disprove it.

Sir Henry Butlin, who was made a baronet last year among the Coronation honours, married Miss Annie Balderson, daughter of Mr. Henry Balderson, of Hemel Hempstead, who survives him, and to whose devoted counsel and assistance he paid a touching tribute in his remarks at the dinner above referred to. He leaves also a son, now Sir Henry Guy Trentham Butlin, who was educated at Eton and is at present at Trinity College, Cambridge, and two daughters, one of whom is married to Mr. Percy Furnivall, F.R.C.S.

The following brief but intimate sketch of Sir Henry Butlin's work and character is from the pen of his pupil, friend, and colleague, Mr. C. B. Lockwood:—

How memories linger! Years have passed, but yet one remembers a slight, almost boyish form leaning over the cases in the dim light of the old museum, and quietly, patiently, conscientiously teaching a small attentive class, usually consisting of pupils who lived in his house, for then it was more the custom than it is now for the younger men to take resident pupils. The spacious, thoughtful brow, which looked so white in contrast with the dark and somewhat long hair; the steadfast, clear eye; the firm mouth; the well-poised head—all denoted the gifted being. Then, later, kindly advice, tendered in kindly way and with the pleasantest voice and tone, were added memories. Afterwards writing his registrar's notes in the same quiet, thorough way, and at surgical consultations giving his opinion simply and clearly in a few well-chosen words. Finally, a colleague and sincere friend. It is hard to think that ere those early days he had been in country practice. Those who are not affluent and who marry early must needs keep the wolf from the door. He seldom talked about those country days. To one such as him the daily round the trivial task of a country doctor's life must have left much to be desired. He used to tell how once an unfortunate farmer caught his arm in a machine, and amputation had to be done. Help was scarce, so one of the farmer's men held the limb. He proved efficient, and afterwards gave expression to the anxiety he had gone through, saying: "I thought it all up with master till I saw them little pinchers." Henceforth hæmostatic forceps were often called "them little pinchers." It is easy to guess that at this time he was conscious of possessing superior gifts, and felt impelled to seek a wider sphere for the display of his talents. No small courage was needed. But lack of courage was never one of his attributes. He had the bravest heart. Convinced that he was right he went dauntlessly on, although his keen, intuitive mind had told him all the dangers and difficulties to be faced. So it is not surprising that he put it to the touch and did not fear his fate; came to town and began a toilsome ascent to fame and honour.

His familiar friends know how hard it was at first for him and his true and wise helpmate. Sensitive in a high degree, all his courage was needed to carry him through the early trials of surgery. He said that at first when he had to perform operations at the West London Hospital the feeling of anxiety was almost overwhelming. And yet he became a calm and intrepid operator, one who patiently, quietly, and steadily set to work to do his utmost to extirpate the most widespread malignant growths. In spite of weariness and physical exhaustion he went steadily on. Never of robust physique, and not blessed with that abundance of health and energy which some enjoy, few knew what those efforts were, but to those who knew they were heroic, and gave rise to feelings of the deepest admiration and respect. Those long and exhausting afternoons of toil in hot operating theatres, and in such a fatiguing atmosphere, were bound to tell upon his frail physique. But of his troubles he used to joke and make light: "One day, my dear boy, you think there is a



SIR HENRY TRENTHAM BUTLIN, BART., D.C.L., LL.D., F.R.C.S.,
LATE PRESIDENT OF ROYAL COLLEGE OF SURGEONS OF ENGLAND; CONSULTING SURGEON TO ST. BARTHOLOMEW'S HOSPITAL.

malignant tumour in your inside. Next day you wake up and find it gone, and say to yourself it was that horrid gout again." So conscientious in the performance of duty, and so loyal to his hospital and school, he gave up the burdensome task none too soon. Without being humorous himself, yet he had the keenest appreciation and enjoyment of the quaint or humorous, and this trait added much to his happiness and to the happiness of others. But he had also other and soberer characteristics. Not a hero-worshipper, yet he had a hero, and he was Paget. Without a doubt Paget was his model orator—one whose style could hardly be excelled, especially that of his clinical lectures. But the oratory, the genius, the fame of Paget, were not the things of which he spoke so earnestly and feelingly. "Sir James Paget was one of the best men I ever knew; he was a truly good man"; and this was no chance utterance, but often repeated, and a clue to his own ideals of conduct.

It can be truly said of Butlin that he, too, was a good man, blameless in life and conduct. He did not hastily admit anyone into the circle of his intimate friends, but was never tired of entertaining those of whom he was fond. Indeed, he lavished kindness and hospitality, and those who met so often at his table usually found that juniors, whose opportunities of social enjoyment were few and far between, had not been forgotten. Indeed, he had very strong opinions on the duties of hospitality, and considered that we in London were wanting in this respect, and spoke warmly of the lavish hospitality of the provinces during the annual meetings of the British Medical Association. Always generous, during his recent presidency of the Association he expended a sum larger than most dreamt of in a banquet arranged purposely for the entertainment of the provincial visitors. It was characteristic of him to give a large contribution to the Faculty of Medicine of London University when he became its Dean, and he always evinced the keenest pleasure when his friends assisted in the good works in which he was interested. A delightful friend, he revealed his constant thoughts in moments of quiet companionship. It was then that one learned the affection he felt for his aged parents; his gratitude for all the help given by his wife; the pleasure that he took in regaining the broad acres which had long before belonged to his family; the pleasant days spent in looking after them; and the deep interest aroused in him by the education of his son. Begun with a memory, this note ends with a memory; the memory of a brave, indomitable man, a loyal colleague, a steadfast friend. Surely he will not "with sparkless ashes fill an unlamented urn."

Funeral services, which were largely attended by the medical profession, personal friends, and representatives of scientific societies and charitable institutions, were held at St. Bartholomew's the Less and St. Andrew's, Wells-street.

DEATHS OF EMINENT FOREIGN MEDICAL MEN.—The deaths of the following eminent foreign medical men are announced:—Dr. Franz von Winckel, formerly professor of midwifery and gynæcology in the University of Munich, at the age of 74. He was the son of Dr. Ludwig Winckel, who in his day was well known in connexion with the practice of Cæsarean section. After graduating in medicine in Berlin he was assistant to Professor Martin, senior, in the Charité midwifery wards, and when only 27 years old was appointed to the chair of obstetrics and forensic medicine in the University of Rostock. In 1872 he went to Dresden, where he was director of the famous midwives' school, and in 1883 was appointed to the chair of midwifery and gynæcology in Munich, from which he retired only four years ago. His works include "Manuals of Midwifery and Gynæcology" and articles in Billroth's "Handbuch der Frauenkrankheiten." He also published several works dealing with the duties of midwives. He was one of the founders of the German Gynæcological and Obstetrical Society, and edited the society's valuable clinical reports.—Dr. Edmund Biernacki, professor of pathology in the University of Lemberg.—Dr. P. Giura, *privat-docent* of stomatology in the Genoa Medical School.—Dr. A. Serafini, professor of experimental hygiene in the University of Padua.—Dr. O. F. Wadsworth, formerly professor of ophthalmology in Harvard University.—Dr. J. T. Davidson, professor of ophthalmology and otology in the Medical College of Virginia, Richmond.—Dr. S. B. Bond, formerly adjunct professor of genito-urinary diseases in the University of Maryland, Baltimore.—Dr. Rhett Goode, professor of anatomy and surgery in the Medical College of Alabama, Mobile.—Dr. P. D. Hughes, professor of clinical surgery in the College of Physicians and Surgeons, Kansas City.—Dr. Carl Horstmann, extraordinary professor of ophthalmology in Berlin, aged 64. He was formerly assistant to Professor Schweigger, and studied in many foreign hospitals in Holland, England, and France. He published numerous papers connected with ophthalmology.

THE NATIONAL INSURANCE ACT.

THE PROPOSED CONFERENCE WITH THE INSURANCE COMMISSIONERS.

ON Jan. 24th the National Insurance Commissioners for England announced, through the Assistant Secretary to the Joint Committee, their intention to take the earliest opportunity of personally conferring with representatives of the chief sections of the community specially concerned, in order to bring the Insurance Act into operation. With a view to obtaining in this manner suggestions from representatives of the medical profession on certain important questions of preliminary procedure, the Joint Committee of the Commissioners for England, Scotland, and Wales have made arrangements for a conference to-day (Friday, Feb. 2nd). The point specially indicated for discussion was the selection of medical members of the Advisory Committee to be consulted by the Commissioners in the framing of regulations. The letter of invitation also suggested that the Commissioners would welcome the views of the medical representatives at the conference upon other matters of procedure in bringing the Act into operation. We understand that invitations to the conference have been addressed to the following medical bodies: the General Medical Council, the Royal College of Physicians of London, the Royal College of Surgeons of England, the British Medical Association, the Scottish Central Council, the National Medical Union, the Reform Committee of the British Medical Association, and the Imperial Medical Reform Union. The Royal College of Physicians of London has decided not to accept the invitation, an example that has been followed by the Royal College of Surgeons of Edinburgh and the Council and the Reform Committee of the British Medical Association.

A WELSH MEDICAL COUNCIL.

We understand that it is intended to form a Welsh Medical Council, primarily through the machinery of the British Medical Association, so that the requirements of the profession in Wales may be formulated for the comprehension of the Welsh Insurance Commissioners. The leaders in the movement feel strongly that a united action with the Commissioners will be more effective than local representations to Local Insurance Committees. A meeting of Welsh medical men will be held at the Raven Hotel, Shrewsbury, at 2 P.M. on Friday, Feb. 9th, when resolutions will be proposed affirming the feeling of the meeting and ensuring that the medical profession in Wales will not work under the Act unless their rights are duly recognised. The Council will nominate an executive to carry on correspondence with the Welsh Commissioners, and to a great extent may be considered a parallel body to the Scottish Central Council, described in our columns last week.

RECOMMENDATIONS OF THE COUNCIL OF THE BRITISH MEDICAL ASSOCIATION.

At the quarterly meeting of the Council of the British Medical Association held on Wednesday, Jan. 31st, the Council's report to the Association on the National Insurance Act was considered and passed for circulation among the members. The report includes a record of the action taken by the Council to give effect to the instructions of the Representative Body; a summary of the position that now confronts the medical profession under the Act; and the conclusions and recommendations of the Council. The latter are as follows:—

I. That the Council be instructed to press on the Government and the Commissioners the further conditions necessary for securing the requirements of the profession.

II. That the Council be instructed to notify the Insurance Commissioners that no negotiations will be entered into with

any Insurance Committee until the Representative Body is satisfied that the requirements of the profession are conceded.

III. That the Council be instructed, as soon as possible after the issue of the regulations by the Insurance Commissioners, to submit a report thereon to the Divisions and the Representative Body.

IV. That the Council be instructed to make all necessary arrangements for the appointment of provisional Medical Committees in every insurance area to safeguard the interests of the profession, without prejudice to the question of whether these Committees shall later accept "recognition" as statutory Local Medical Committees.

V. That the Council be instructed to take steps to organise the profession so as to secure that, failing the provision of adequate remuneration of medical practitioners under the National Insurance Act, no contract practice appointment for attendance upon insured persons shall be held at a lower rate than that which may be agreed upon by the Representative Body as adequate.

VI. That a State Sickness Insurance Committee be appointed to consider and report to the Council on all matters connected with the National Insurance Act; that the committee consist of (*a*) 12 members elected by the Representative Body, (*b*) 12 members elected by the Council, (*c*) two members nominated by the Association of Registered Medical Women; (*d*) the *ex-officio* members; and that the committee be empowered to add to its numbers for special purposes not more than four additional members.

These recommendations are submitted by the Council for the consideration of the divisions of the Association prior to the next meeting of the Representative Body. The Council's report of the future action to be taken by the Association will be considered at a Special Representative Meeting which is announced to be held at the Guildhall, London, on Tuesday, Feb. 20th, at 10 A.M., and on Wednesday, Feb. 21st, in the Court of Common Council Chamber.

BRITISH MEDICAL ASSOCIATION REFORM COMMITTEE.

The provisional executive of the Reform Committee of the British Medical Association, whose manifesto we printed in our issue of Jan. 20th, has issued through its honorary secretary, Mr. P. C. Raiment, a letter to medical practitioners, dated Jan. 29th, which says:—

> You will probably agree that it is only by a properly organised effort, acting on a common basis, that there is any hope of securing the alterations in the National Insurance Act which are necessary if the profession is to obtain its minimum requirements with any security, and with this object I venture to ask if you will become a member of the Reform Committee. The committee believe that no effectual and permanent security can be obtained under Regulations, which can be rescinded as easily as they are made by the Insurance Commissioners; and, therefore, it is felt that only by an Act of Parliament embodying the six cardinal points can any satisfactory solution be reached.
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> In order that the necessity for this may be impressed upon the Council of the British Medical Association, it is proposed that definite resolutions should be moved in each division of the Association instructing the Representatives to support the following motion at the Representative meeting on Feb. 22nd, viz.: This Representative Meeting directs the Council to inform, in plain and unmistakable language, the Commissioners appointed under the Insurance Act, 1911, that unless the six cardinal points as originally formulated by the British Medical Association be embodied in a Bill amending the Insurance Act, 1911, which shall become law in the next session of Parliament; and unless, in the meantime, these six points be incorporated in the Regulations to be issued by the Commissioners in such a manner as shall be effectual and permanent until such amending Act is passed, it is the intention of the British Medical Association to call upon all its members and upon all other medical practitioners to decline to form panels or undertake any other medical duties which may be assigned to them under the Act, in conformity with the undertaking which has already been signed by over 25,000 medical practitioners.

A copy of the manifesto is enclosed with Mr. Raiment's letter, and medical men who are in agreement with the objects outlined in the two communications are asked to subscribe 5*s.* and to fill in a form of application for membership of the British Medical Association Reform Committee. The form of application is worded to include not only those practitioners who are members of the British Medical Association, but also those who intend to become members of the Association. The question thus arises as to whether the Reform Committee can quite substantiate its claim to the full title which it has assumed. The address of the Reform Committee of the British Medical Association is 29, Old Queen-street, Westminster, S.W., not 129, as was stated in our last issue.

THE BIRMINGHAM COMMITTEE.

We learn that the practitioners of Birmingham have formed an emergency committee outside the local divisions of the British Medical Association with the following objects:—

1. To adopt and to advocate the policy of discontinuing negotiations with the Government and Commissioners, and of refusing to take any part in administrative or medical work under the Act, as under it the demands of the profession were not, and could not be, conceded.
2. To take all possible steps to ensure that this policy be adopted by the British Medical Association both locally and centrally.
3. To formulate what they consider should be the *minimum* requirements of the profession, should the Government desire to amend the present Act.

The committee disclaims hostility to the Association, and numbers among its members the representative of the Birmingham Branch on the Council of the Association and the representative of the Birmingham Central Division on the Representative Body. The committee has decided not to amalgamate at present with the British Medical Association Reform Committee, with which it has been in correspondence.

The honorary secretary of the Wandsworth Division of the British Medical Association asks us to state that the meeting of Wandsworth medical men on Jan. 22nd, referred to in our last issue, was not technically a meeting of the Wandsworth Division.

Medical News.

FOREIGN UNIVERSITY INTELLIGENCE.—*Basle:* Dr. Paul Preiswerk has been recognised as *privat-docent* of Odontology.—*Berlin:* Professor Theobald Smith, of Harvard University, is giving a special course of lectures, open to students of all faculties, on Parasitism and Disease.—*Cracow:* Dr. Johann Piltz has been promoted to the chair of Psychiatry and Neurology.—*Christiania:* Madame Marie Kjölseth has received the gold medal of the University for her researches in Pathological Anatomy.—*Bonn:* Dr. O. von Franqué, professor in Giessen, has been appointed to the chair of Midwifery and Gynæcology in succession to Dr. Fritsch retired.—*Dresden:* Dr. Rietschel, Director of the Sucklings' Home, and Dr. Galewsky, an eminent dermatologist, have been granted the title of Professor.—*Erlangen:* Dr. Hermann Euler, *privat-docent* of Odontology, has been granted the title of Extraordinary Professor.—*Freiburg:* Dr. August Weismann is retiring at the close of the winter session from the chair of Zoology.—*Hanover:* Dr. Becker, Oberarzt of the Surgical Clinic in Rostock, has been appointed Director of the Children's Hospital.—*Lemberg:* Dr. Heinrich von Halban has been promoted to the chair of Psychiatry and Neurology.—*Lyons:* Dr. T. Lépine, *agrégé*, has been appointed Clinical Professor of Mental Diseases in succession to Dr. Pierret.—*Munich:* Dr. Rullmann, of Darmstadt, has been granted the title of Professor.—*Münster:* Dr. Rammstedt, a Military Surgical Specialist, has been granted the title of Professor.—*Strasburg:* Dr. Bartels, *privat-docent* of Ophthalmology, and Dr. Schickele, *privat-docent* of Gynæcology, have been granted the title of Professor.—*Würzburg:* The large Rinecker gold medal has been awarded to Dr. Rubner, Director of the Berlin Physiological Institute.

ROYAL FREE HOSPITAL.—The Earl of Sandwich presided at the recent meeting of the committee of management of the Royal Free Hospital, at which the following resolutions were passed:—

> That the committee of management desire to offer their cordial congratulations to Miss Eleanor Davies-Colley, M.D., B.S. Lond., upon her admission to the Fellowship of the Royal College of Surgeons of England. Miss Davies-Colley being the first lady to attain this position the committee appreciate the distinction gained by the Medical School of the Royal Free Hospital through her achievement.
>
> The committee also desire to endorse the congratulations which the Board rendered in 1909 to Mrs. Haslam (*née* Miss I. Woodward), M.D. Lond., who, after receiving a medical education at the London School of Medicine for Women and the Royal Free Hospital, was admitted to membership of the Royal College of Physicians of London, being the first lady to receive this diploma.

It was also reported that the Cordwainers' Company will present a gold medal to the nurse who shall obtain the highest number of marks at the annual examination.

BRITISH MEDICAL BENEVOLENT FUND GUILD.—A drawing-room meeting of this guild was held at 100, Harley-street, London, W., on Jan. 25th, to meet the Lady Mayoress and to consider the extension of the guild. Fifteen ladies

have offered to work in making the charity better known, taking the metropolitan boroughs (with sub-divisions) as the basis of the scheme. As a result of the meeting 11 boroughs will be systematically worked, and it is hoped that very shortly the whole 29 will be visited. The ladies will work with Mrs. H. H. Clutton, 3, Park-square, London, N.W., who has consented to be chief secretary and organiser, and a date is to be arranged when the workers and friends of the guild will meet by invitation of the Lady Mayoress at the Mansion House.

THE HUNTERIAN SOCIETY.—The annual oration of the Hunterian Society will be delivered at the London Institution, Finsbury-circus, E.C., by Dr. T. Glover Lyon, on the Cure of Consumptives, a Review and a Forecast, on Wednesday evening, Feb. 14th, at 9 P.M. It would much facilitate the arrangements for the anniversary dinner if those Fellows who intend to be present would signify the same to the honorary secretaries, Dr. A. P. Gibbons, 17, Finsbury-circus, E.C.; and Dr. A. C. Jordan, 11, Bentinck-street, W.

TWELFTH CONGRESS OF THE GERMAN SOCIETY FOR ORTHOPÆDIC SURGERY.—This Congress will take place in Berlin (Langenbeckhaus, Ziegelstrasse, 10 and 11) on April 9th, 1912, the day before the meeting of the German Surgical Society. It will be opened at 9 A.M. The principal subject for discussion will be the Treatment of Infantile Paralysis, by Professor Dr. Paul Krause, of Bonn, and Professor Dr. Fritz Lange, of Munich. Dr. H. Gocht, of Halle a.S., is the President for the year 1912. Preparations, apparatus, and instruments for demonstration are to be addressed to Herr Melzer, Langenbeckhaus, Ziegelstrasse, 10/11, Berlin, N., and applications in respect to membership to Professor Dr. Joachimsthal, Genthinerstrasse, 16, Berlin, W.

WEST LONDON MEDICO-CHIRURGICAL SOCIETY.—The annual dinner of the West London Medico-Chirurgical Society will be held in the Wharncliffe Rooms, Hotel Great Central, on Thursday, Feb. 8th, at 7.30 for 8 P.M.

A LECTURE on "Malady and Melody: or the Influence of Music in the Healing Art," will be delivered by Dr. G. Norman Meachen, in the Vestry Hall of St. Paul's Church, Canonbury, N., on Tuesday evening next, Feb. 6th, at 8 o'clock. Miss Florence Holdernesse, among others, has kindly consented to supply vocal illustrations.

CENTENARIANS.—Mrs. Annis Moore, of Plymouth, recently celebrated the anniversary of her 101st birthday, as also did Miss Ann Hutchings, an inmate of the Wellington Workhouse Infirmary, Somerset.

UNIVERSITY COLLEGE HOSPITAL.—Sir Ernest Hatch has accepted the office of treasurer of the corporation of University College Hospital and Medical School.

BOOKS, ETC., RECEIVED.

BAILLIÈRE, J. B., ET FILS, Paris.

Nouveau Traité de Chirurgie Clinique et Opératoire. Publié en Fascicules sous la Direction de A. Le Dentu et Pierre Delbet. XXX. Maladies de la Vessie et du Pénis. Par F. Legueu, Professeur Agrégé à la Faculté de Médecine et Chirurgien des Hôpitaux; et E. Michon, Chirurgien des Hôpitaux de Paris. Price not stated.

BAILLIÈRE, TINDALL, AND COX, London.

Orthopedic Surgery. By Edward H. Bradford, M.D., Surgeon to the Boston Children's Hospital; and Robert W. Lovett, M.D., Associate Surgeon to the Boston Children's Hospital. Price 14s. net.

Diseases of the Stomach. A Text-book for Practitioners and Students. By Max Einhorn, M.D., Professor of Clinical Medicine at the New York Post-Graduate Medical School and Hospital. Fifth revised edition. Price 14s. net.

A Text-book of Pathology. With a Final Section on Post-mortem Examinations and the Methods of Preserving and Examining Diseased Tissues. By Francis Delafield, M.D., LL.D., Emeritus Professor of the Practice of Medicine, College of Physicians and Surgeons, Columbia University, New York; and T. Mitchell Prudden, M.D., LL.D., Emeritus Professor of Pathology, College of Physicians and Surgeons, Columbia University, New York. Ninth edition. Price 25s. net.

Diseases of Infants and Children. By Henry Dwight Chapin, A.M., M.D., Professor of Diseases of Children, New York Post-Graduate Medical School and Hospital; and Godfrey Roger Pisek, M.D., Professor of Diseases of Children, University of Vermont. Second edition, revised. Price 18s. net.

Medical Laboratory Methods and Tests. By Herbert French, M.A., M.D. Oxon., F.R.C.P. Lond., Assistant Physician, Guy's Hospital, &c. Third edition. Price 5s. net.

BUTTERWORTH AND CO., 11 and 12, Bell-yard, Temple Bar, London.

The National Insurance Act, 1911. Being a Treatise on the Scheme of National Health Insurance and Insurance against Unemployment created by that Act, with the Incorporated Enactments, Full Explanatory Notes, Tables, and Examples. By Orme Clarke, of the Inner Temple and Western Circuit, Barrister-at-Law. With an Introduction by Sir John Simon, K.C.V.O., M.P., Solicitor-General. Price 12s. 6d.

CHURCHILL, J. AND A., London.

Who's Who in Science (International). 1912. Edited by H. H. Stephenson. Price 6s. net.

COLUMBIA UNIVERSITY PRESS, New York. OXFORD UNIVERSITY PRESS (Mr. HENRY FROWDE), London.

Columbia University Lectures. Scientific Features of Modern Medicine. By Frederic S. Lee, Ph.D., Dalton Professor of Physiology, Columbia University. Price $1.50 net, or 6s. 6d. net.

FABIAN SOCIETY, 3, Clement's Inn, Strand, London, W.C.

Fabian Tract No. 160. A National Medical Service. By F. Lawson Dodd, M.R.C.S., L.R.C.P. Lond., L.D.S., D.P.H. Eng. Published and sold by the Fabian Society. Price 2d.

FISCHER, GUSTAV, Jena.

Handbuch der Pathogenen Mikroorganismen. Herausgegeben von Dr. W. Kolle und Dr. A. von Wassermann. Zweite vermehrte Lieferung (Bd. I., Bogen 16-25). Price M.5. (Band IV., Bogen 1-8). Price M.5. (Das Handbuch erscheint in etwa 40 Lieferungen: Preis jeder Lieferung 5 mark.)

Handbuch der Vergleichenden Physiologie. Herausgegeben von Hans Winterstein in Rostock. Siebzehnte Lieferung. Band I. Physiologie der Körpersäfte. Physiologie der Atmung. Erste Hälfte. Bogen 11 bis 20. Price M.5.

Achtzehnte Lieferung. Band II. Physiologie des Stoffwechsels. Physiologie der Zeugung. Erste Hälfte. Bogen 72 bis 98, nebst Titel und Inhalt. Price M.5.

Neunzehnte Lieferung. Band III. Physiologie des Energiewechsels. Physiologie des Formwechsels. Erste Hälfte. Bogen 1 bis 10. Price M.5.

Handbuch der Gesamten Therapie. In sieben Bänden. Herausgegeben von Dr. F. Penzoldt und Dr. R. Stintzing. Vierte umgearbeitete Auflage. Zweiundzwangiste Lieferung. Price M.4.50. (Preis des vollständigen Werkes: 100 Mk., geb. 117 Mk. 50 Pf.)

Lehrbuch der Therapie innerer Krankheiten. Für Aerzte und Studierende. In zwei Bänden. Herausgegeben von Dr. Paul Krause und Dr. Carl Garrè. Zweiter Band. Spezielle Therapie innerer Krankheiten. Price, paper, M.10.50; bound, M.11.50.

Die Krankheiten des Mundes. Von weil J. Von Mikulicz und W. Kümmel. Dritte Auflage. Neu bearbeitet von Werner Kümmel, Direktor der Universitätsklinik für Ohren-, Nasen-, und Kehlkopfkranke in Heidelberg. Mit Beiträgen von Prof. A. Czerny, Direktor der Universitätskinderklinik in Strassburg i.E., und Prof. J. Schäffer in Breslau. Price, paper, M.9; bound, M.10.

Das Bakterien-Anaphylatoxin und seine Bedeutung für die Infektion. Von Dr. Hermann Dold, I. Assistent am Institut für Hygiene und Bakteriologie der Universität Strassburg. (Aus dem Institut für Hygiene und Bakteriologie der Universität Strassburg; Direktor: Geheimrat Professor Dr. Uhlenhuth.) Price M.2.80.

Sammlung Anatomischer und Physiologischer Vorträge und Aufsätze. Herausgegeben von Prof. Dr. E. Gaupp und Prof. Dr. W. Trendelenburg. Heft 17 (Zweiter Band, Heft 4). Physiognomie und Schädel. Von Dr. med. H. von Eggeling, a.o. Professor und Prosektor an der Anatomischen Anstalt der Universität Jena. Price M.1.50; subscription price, M.1.20.

LAURIE, T. WERNER, Clifford's Inn, Fleet-street, London, E.C.

New Zealand, the Country and the People. By Max Herz, M.D. Price 12s. 6d. net.

LONGMANS, GREEN, AND CO., London, New York, Bombay, and Calcutta.

A Dictionary of Applied Chemistry. By Sir Edward Thorpe, C.B., LL.D., F.R.S., Professor of General Chemistry and Director of the Chemical Laboratories of the Imperial College of Science and Technology, South Kensington, London. Assisted by Eminent Contributors. In five volumes. Vol. I. Revised and enlarged edition. Price 45s. net.

Heredity and Society. By William Cecil Dampier Whetham, M.A., F.R.S., Fellow and Tutor of Trinity College, Cambridge, and Catherine Durning Whetham, his Wife. Price 6s. net.

ROYAL INSTITUTE OF BRITISH ARCHITECTS, 9, Conduit-street, Regent-street, London, W.

Modern German Hospital Construction. By William Milburn, Jun., A.R.I.B.A., Henry Saxon Snell Prizeman, 1908, Godwin Bursar, 1910. Price 3s. 6d. net.

SAUNDERS (W. B.) COMPANY, Philadelphia and London.

Nervous and Mental Diseases. By Archibald Church, M.D., Professor of Nervous and Mental Diseases and Medical Jurisprudence in the Northwestern University Medical School (the Chicago Medical College), Chicago; and Frederick Peterson, M.D., Ex-President of the New York State Commission in Lunacy, Professor of Psychiatry, Columbia University. Seventh edition, thoroughly revised. Price 21s. net.

Operative Obstetrics, including the Surgery of the Newborn. By Edward P. Davis, A.M., M.D., Professor of Obstetrics, Jefferson Medical College. Price 24s. net.

A Text-book of Medical Chemistry and Toxicology. By James W. Holland, A.M., M.D., Professor of Medical Chemistry and Toxicology, and Dean, Jefferson Medical College, Philadelphia. Third edition, thoroughly revised. Price 15s. net.

A Text-book of the Practice of Medicine. By James M. Anders, M.D., Ph.D., LL.D., Professor of Medicine and Clinical Medicine at the Medico-Chirurgical College, Philadelphia. Tenth edition, thoroughly revised. Price 24s. net.

Appointments.

Successful applicants for Vacancies, Secretaries of Public Institutions, and others possessing information suitable for this column, are invited to forward to THE LANCET *Office, directed to the Sub-Editor, not later than 9 o'clock on the Thursday morning of each week, such information for gratuitous publication.*

BALL, W. GIRLING, F.R.C.S., L.R.C.P. Lond., has been appointed Surgeon to the Alexandra Hospital for Hip Disease.

CATHCART, J., M.B., Ch.B. Edin., has been appointed Assistant Medical Officer to the Barnes Convalescent Home, Cheadle.

COOMBE, RUSSELL, F.R.C.S. Eng., has been appointed Honorary Consulting Surgeon to the Budleigh Salterton (Devon) Cottage Hospital.

CORE, D. E., M.D. Vict., M.R.C.P. Lond., has been reappointed Resident Medical Officer at the Manchester Royal Infirmary.

EDDISON, F. R., L.R.C.P. Lond., M.R.C.S., has been appointed Certifying Surgeon under the Factory and Workshop Acts for the Bedale District of the county of Yorks, North Riding.

HUDSON, E. P., L.D.S. Eng., has been appointed Dental Surgeon to the Royal Free Hospital.

HUGHES, E. E., M.B., Ch.B. Vict., has been reappointed Resident Medical Officer at Barnes Convalescent Home, Cheadle.

JAMES, A. H., M.D. Edin., has been appointed Certifying Surgeon under the Factory and Workshop Acts for the Blaenavon District of the county of Monmouth.

JONES, E. H., M.B., B.S. Lond., M.R.C.S., L.R.C.P. Lond., has been appointed House Surgeon at the Northampton General Hospital.

LEGATE, R. L., L.R.C.P. & S. Edin., L.A.H. Dub., has been re-appointed Medical Officer of Health for the Christchurch Urban District of Bournemouth.

MARSDEN, J. A., M.R.C.S., L.S.A., has been appointed Certifying Surgeon under the Factory and Workshop Acts for the Hipperholme District of the county of Yorks, West Riding.

MATTHEWS, NEWTON, M.B., Ch.B. Vict., has been appointed House Physician at the Manchester Royal Infirmary.

NICHOLL, ERNEST EDWARD, L.R.C.P. Lond., M.R.C.S., has been appointed Medical Officer for the Fourth and Ninth Districts by the South Molton (Devon) Board of Guardians, and Medical Officer for the High Bray District by the Barnstaple (Devon) Board of Guardians.

ORRIN, HERBERT CHARLES, F.R.C.S., L.R.C.P. Edin., L.F.P.S. Glasg., has been appointed Surgeon to the Newton Abbot (Devon) Hospital.

PATEY, WALTER, M.D., B.S. Lond., L.R.C.P. Lond., M.R.C.S., has been appointed Surgeon to the Newton Abbot (Devon) Hospital.

ROBINS, J. N., M.R.C.S., L.R.C.P. Lond., has been appointed Certifying Surgeon under the Factory and Workshop Acts for the Chatham District of the county of Kent.

RUSSELL, JAMES WILLIAM, M.D., B.C. Cantab., F.R.C.P. Lond., has been appointed Honorary Physician to the Birmingham General Hospital.

SEAL, PHILIP HENRY, M.B., B.S. Lond., L.R.C.P. Lond., M.R.C.S., has been appointed Medical Officer to the South Molton (Devon) Union Workhouse.

TURNER, A., L.R.C.P. Edin., L.S.A., has been appointed Certifying Surgeon under the Factory and Workshop Acts for the Kelvedon District of the county of Essex.

TYLECOTE, F. E., M.D. Vict., M.R.C.P. Lond., has been reappointed Medical Registrar to the Manchester Royal Infirmary.

WEBB, WILLIAM TUDOR, L.R.C.P. Lond., M.R.C.S., has been appointed Medical Officer for the Third, Fifth, and Tenth Districts by the Kingsbridge (Devon) Board of Guardians, and Medical Officer of Health for the Kingsbridge Rural District Council.

WESTMACOTT, FREDERIC H., F.R.C.S. Eng., has been appointed Assistant Surgical Officer to the Aural Department of the Manchester Royal Infirmary.

Vacancies.

For further information regarding each vacancy reference should be made to the advertisement (see Index).

BIRMINGHAM AND MIDLAND EYE HOSPITAL.—Resident Surgical Officer. Salary £100 per annum, with apartments, board, and attendance.

BRIDGWATER HOSPITAL.—House Surgeon for six months, unmarried. Salary at rate of £100 per annum, with board, lodging, and washing.

BRISTOL ROYAL INFIRMARY.—Resident Casualty Officer for six months. Salary at rate of £50 per annum, with apartments, board, and laundry.

BRITISH LYING-IN HOSPITAL, Endell-street, W.C.—Resident Medical Officer. Salary at rate of £50 per annum, including board, lodging, and washing.

BUXTON, DERBYSHIRE, DEVONSHIRE HOSPITAL.—Assistant House Physician for six months. Salary £100 per annum, with apartments, board, and laundry.

CANCER HOSPITAL (FREE), Fulham-road, S.W.—Assistant Pathologist. Salary £350 per annum.

CHELSEA HOSPITAL FOR WOMEN, Fulham-road, S.W.—House Surgeon, unmarried. Salary £80 per annum.

CITY OF LONDON HOSPITAL FOR DISEASES OF THE CHEST, Victoria Park, E.—Resident Medical Officer. Salary £150 per annum, with board, &c.

COLCHESTER, ESSEX COUNTY HOSPITAL.—House Surgeon. Salary £80 per annum, with board, washing, and residence.

CROYDON GENERAL HOSPITAL.—Junior House Surgeon. Salary £75 per annum, with board, laundry, and residence.

EASTBOURNE, COUNTY BOROUGH OF.—Assistant School Medical Officer and Assistant Medical Officer of Health. Salary £250 per annum.

GLOUCESTER COUNTY ASYLUMS.—Assistant Medical Officer, unmarried. Salary £150 per annum, with rooms, rations, laundry, and attendance.

HOSPITAL FOR CONSUMPTION AND DISEASES OF THE CHEST, Brompton.—Physician.

HOSPITAL FOR SICK CHILDREN, Great Ormond-street, W.C.—Clinical Pathologist and Bacteriologist. Salary 100 guineas per annum.

LARBERT, STIRLING DISTRICT ASYLUM.—Junior Assistant Medical Officer. Salary £130 per annum, with board, &c.

LEICESTER, PARISH OF.—Resident Second Assistant Medical Officer. Salary £130 per annum, with rations, apartments, and washing.

LONDON COUNTY COUNCIL.—Deputy Medical Officer of Health and Deputy School Medical Officer of the County of London. Salary £1000 per annum.

MACCLESFIELD GENERAL INFIRMARY.—Junior House Surgeon. Salary £60 per annum, with board and residence.

MIDDLESEX HOSPITAL, W.—Assistant Medical Officer to the Electrical Department. Salary £50 per annum.

MILDMAY MISSION HOSPITAL, Bethnal Green, E.—House Surgeon, unmarried. Salary for first six months, as Junior, at rate of £70 per annum, and then, as Senior, £80 per annum, with board, residence, and laundry.

NEWCASTLE-ON-TYNE HOSPITAL FOR SICK CHILDREN.—Honorary Ophthalmic Surgeon, Honorary Assistant Surgeon, and Honorary Assistant Physician.

OXFORD COUNTY ASYLUM, Littlemore, near Oxford.—Junior Assistant Medical Officer, unmarried. Salary £150 per annum, with quarters, board, and laundry.

POPLAR AND STEPNEY SICK ASYLUM DISTRICT, Bromley, E.—Third Assistant Medical Officer. Salary £120 per annum, with rations, apartments, and washing.

PORTSMOUTH, ROYAL PORTSMOUTH HOSPITAL.—House Physician for six months. Salary £75 per annum, with board, &c.

QUEEN CHARLOTTE'S LYING-IN HOSPITAL, Marylebone-road, N.W.—Resident Medical Officer for four months. Salary at rate of £60 per annum, with board, residence, and washing.

QUEEN'S HOSPITAL FOR CHILDREN, Hackney-road, Bethnal Green, N.E.—House Surgeon, for six months. Salary at rate of £80 per annum, with board, residence, and washing.

ROYAL NATIONAL ORTHOPÆDIC HOSPITAL, 234, Great Portland-street, W.—Honorary Assistant Surgeon. Also Surgical Registrar. Salary £105 per annum.

ROYAL NAVAL MEDICAL SERVICE.—Fifteen Appointments.

ST. MARY'S HOSPITAL FOR WOMEN AND CHILDREN, Plaistow, E.—Senior Resident Medical Officer, unmarried. Salary at rate of £100 per annum, with board, residence, and laundry. Also Surgeon-in-Charge of X Ray Department. Salary £50 per annum.

ST. PANCRAS AND NORTHERN DISPENSARY, 126, Euston-road.—Resident Medical Officer, unmarried. Salary £105, with residence, attendance, and midwifery fees.

SALFORD COUNTY BOROUGH.—Assistant to Medical Officer of Health. Salary £250 per annum.

SALFORD ROYAL HOSPITAL.—Casualty House Surgeon. Salary at rate of £50 per annum, with board and residence.

SHEFFIELD, JESSOP HOSPITAL FOR WOMEN.—Assistant House Surgeon. Salary £40 per annum.

SHEFFIELD UNIVERSITY.—Demonstrator in Experimental Physiology and Pharmacology. Salary £200 per annum.

SHERWOOD FOREST, RANSOM SANATORIUM FOR CONSUMPTIVES, near Mansfield, Notts.—Resident Medical Officer (female). Salary £100 per annum, with board, residence, and washing.

STAFFORD, COTON HILL LUNATIC HOSPITAL.—Assistant Medical Officer. Salary £150 per annum, with residence, board, and laundry.

WALSALL AND DISTRICT HOSPITAL.—House Surgeon. Salary £100 per annum, with board, residence, and laundry. Also House Physician. Salary £90 per annum, with board, residence, and laundry.

WESTON-SUPER-MARE HOSPITAL.—House Surgeon, unmarried. Salary £100 per annum, with board and residence.

WINCHESTER, ROYAL HAMPSHIRE COUNTY HOSPITAL.—House Surgeon. Salary £80 per annum.

THE Chief Inspector of Factories, Home Office, London, S.W., gives notice of vacancies as Certifying Surgeons under the Factory and Workshop Act at Swineford, in the county of Mayo; at Luddenden, in the county of Yorks, West Riding; at Romford, in the county of Essex; at South Molton, in the county of Devon; and at Virginia, in the county of Cavan.

Births, Marriages, and Deaths.

BIRTHS.

DUDGEON.—On Jan. 28th, at Ashley-gardens, S.W., the wife of Leonard S. Dudgeon, F.R.C.P. Lond., of a daughter.

MOON.—On Jan. 25th, at Green-street, W., the wife of R. O. Moon, M.D., of a daughter.

NEWLAND.—On Jan. 22nd, at "Layston," Bromley, Kent, the wife of H. G. Newland, L.D.S., of a daughter.

MARRIAGES.

COWEN—WATTS.—On Jan. 27th, at St. Stephen's, Gloucester-road, S.W., Edward George Huxley Cowen, R.A.M.C., to May Eva, eldest daughter of Mr. and Mrs. A. C. Watts, of Sutton, Surrey.

MCCULLY—CLEATON.—On Jan. 24th, at St. Stephen's Church, Hampstead, Donald McCully, M.R.C.S., L.R.C.P., to Gwendolen, only daughter of E. R. Cleaton, "The Pryors," Hampstead.

DEATHS.

DUKE.—On Jan. 30th, at Southwick, Sussex, Allen A. Duke, M.D. Edin., suddenly, of cardiac failure, aged 75.

HOLMES.—On Jan. 28th, at Westgate-terrace, London, S.W., Robert Andrew King Holmes, Lieutenant-Colonel Indian Medical Service.

OSWALD.—On Jan. 24th, at Clapham-road, S.W., J. W. J. Oswald, M.D., F.R.C.S. Edin., in his 81st year.

N.B.—A fee of 5s. is charged for the insertion of Notices of Births, Marriages, and Deaths.

Notes, Short Comments, and Answers to Correspondents.

"WILL THE EDITOR KINDLY——?"

A WEEK never passes without some queer communication or illiterate request reaching the offices of THE LANCET. Such letters from non-medical readers naturally deal for the most part with the ailments of the writers or of their friends, and the majority of these seek our advice on the subject of a "Specialist" or a "Cure." A few weeks ago we were requested to name "a specialist in von Recklinghausen's disease," and this week we are asked if we "know of any cures for a serious complaint called sarcoma of the small 'spindle cell type." We are often tempted to print the more unusual of these questions, but in many cases it would be cruel to do so. Often the stranger the request the more pathetic is the ignorance displayed. But there are other communications equally ignorant and illiterate which are written in a different spirit and deserve to be held up to ridicule. Uneducated cranks of every kind write to us to ventilate their views, and their obvious simplicity and sincerity forbid us to pillory them by publication. It is only when they are abusive or mischievous that we do so. The following letter comes from one who calls himself a "Hydropathist":—

To the Editor of THE LANCET.

DEAR SIR,—Modern Science teaches there is no infectious disease none whatever. But you have not got it and we can never have it, for we have medical council which governs medical practice all the time. And in medical practice there is no cure for fever or any other infectious disease so the poor patient has to suffer like a dog. Fever must run its course is a fallacy of the most dangerous type. And is unscientific and unreliable as it generates matures and distributes millions of germs to make other cases of infectious diseases. Can you wonder that the germs get mixed and patients contract other diseases however careful the Physicians and Nurses might be.

In Hydropathy there is no infectious disease, we cure fever without poisonous drugs. We cure fever before it has a name, the Medical man must let fever run for at least two days, so as to know what fever it is, and fever can be cured in 48 hours without complications or anxiety. It is not Christian Science where they pray over the Sick and anoint the head with Oil. But Medical practice is worse then that as they can do nothing in Fever cases.

Yours Very Truly,

Toronto, January 1, 1912. JOSEPH BRADLY, Hydropathist.

Undoubtedly Mr. Bradly might give very evil counsel to people unable to detect his essential silliness.

AN APPEAL FOR INSTRUMENTS.

To the Editor of THE LANCET.

SIR,—I have been asked by Archdeacon Pugh, of Yale, B.C., to appeal to those members of the profession who have any surgical instruments for which they have no further use and are willing to give to a charitable object, that they would send any such instruments to him for use in the Indian hospital at Yale.

I am, Sir, yours faithfully,

Harley-street, Jan. 29th, 1912. RICHARD LAKE.

PS.—Instruments to be sent to Archdeacon Pugh, 4, Dean's Yard, Westminster.

"COMPENSITIS."

Mr. Alex. Mercer, M.R.C.S., L.R.C.P., writes under the above title:—"This term may be applied to a form of neurosis, with characteristics of its own, which has been manufactured by the machinery of the Workman's Compensation Act. Though distinct from malingering, there are border-line cases which are difficult to differentiate; and, indeed, the two conditions may occur together. It may also be divided from hysteria, which, generally speaking, presents an unstable mental condition previous to the accident, the latter merely being an episode in the course of the disease. In certain temperaments it is difficult to tell where the hysteria begins and the malingering ends, so closely are the two conditions often combined. Here, however, I am attempting to keep compensitis in a category of its own. It may be divided into three types. 1. The litigation type. In this exaggeration is the main characteristic. It follows an injury from which, if the Act were non-existent, an average person would be eager to recover. The usual history is that the patient's mind is first directed to the law by friends or relations. Unfortunately, there are certain of the legal profession who, to put it tersely, do the rest. The anticipation of the pending litigation exaggerates the injury in the patient's mind. Such cases speedily get well when the case is settled. 2. The neurotic type. Here the injured person is what is termed variously by the medical practitioner a 'general complainer' or a 'chronic.' An accident produces a state of mind akin to gratification. The individual may be out of ailments at the time, or existing ailments are promptly overweighted by the injury. These persons are never perfectly happy unless they appear miserable. This state of the nervous system is only acquired by considerable experience. They are apt to put little stress on the actual injury, but all their ailments have (in their minds) undoubtedly sprung from it. They often say, 'I never ailed in my life until this accident.' 3. The neurasthenic type. Patients of this type may never have been ill, or had an accident, or suffered pain before. They have heard of such things, but the reality comes as a shock to them. The injury upsets the normal equilibrium of the nervous system, and they work themselves up into a neurasthenic state. A common symptom is the complaint of various pains in different parts of the body, often springing from the seat of injury. The condition can be differentiated from neuritis in that there are no trophic or vaso-motor disturbances, and the pains follow no definite nerve course. There may be wasting of muscles from prolonged disuse. The two latter types represent a very large number of cases that daily come under the notice of medical referees and are a class in themselves. From a legal point of view they are usually placed amongst the 'unfit-for-work's,' and often the comfortable opinion is expressed that 'they will never be fit for work as long as they live.' This view in certain individuals seems to take such root that conviction becomes a certainty. As long as the condition is one of pure compensitis it is difficult, from a medical point of view, to say that the former work can be resumed, but in a good percentage of cases it is associated with malingering, or the latter takes its place. These are the cases that need all one's experience and knowledge."

WETTING THE FINGER.

To the Editor of THE LANCET.

SIR,—I see that you have been ventilating in your columns objections to the horrible practice of wetting the finger, which is also done in opening paper bags, &c., in shops. Far the most offensive instance is to be observed in tea-shops, where the girls behind the counter almost invariably wet the finger to detach the edges at the mouth of a bag and then *with the same finger* pick up a bun or cake to put in the bag! So offensive is it that I have altogether given up buying buns. Public opinion is the main thing, but until it is educated to repudiate altogether such practices the large employers of such labour—i.e., Messrs. Lyons and the A.B.C. directors—could do much by strictly enforcing prohibition. If they would at the same time provide small forks or tongs for touching cakes, and enforce the use of them on their employees, they would be doing great service to the more fastidious of their customers. Some of the girls seem to take a positive delight, not only in fingering, but in handling the cakes well over in the palm, and woe be to the customer who dares to protest! One of the worst instances of the previously mentioned nuisances I have ever known was when I bought some lozenges in a druggist's shop this morning, and the assistant actually licked up the envelope before handing it to me! These shops are usually above reproach in this respect.

I am, Sir, yours faithfully,

Hammersmith, W., Jan. 26th, 1912. G. E. MITTON.

*** In the annotation on Hygiene and the Tube Booking Clerk, referred to above by our correspondent, we suggested that if the unmoistened finger is placed at a mechanical disadvantage the difficulty might be met by a damping-pad beside each pigeon-hole. We now read in a daily paper that this is done on the Central London Railway. But the moistened finger has not been supplanted by the wet pad throughout the Tube booking-offices of London.—ED. L.

J. S.—We believe that most authorities would regard in-breeding to such an extent as inadvisable in the interests of the next generation.

COMMUNICATIONS not noticed in our present issue will receive attention in our next.

A DIARY OF CONGRESSES.

WE shall publish this diary from time to time that our readers may have under their hands the dates of the approaching scientific Congresses. It is unnecessary to issue the lists of all these functions week by week, and we propose to make only such gatherings as will occur in the immediate future the subject of regular announcement. The following Congresses, Conferences, and Exhibitions are announced for the next few months:—

Feb. 2nd-6th (London, Crystal Palace).—International Bird Show of the London and Provincial Ornithological Society.
" 13th-14th (London).—Central Poor-Law Conference.
March 7th-11th (Berlin).—Thirty-third Balneological Congress.
March 23rd-April 4th (London, Royal Agricultural Hall).—International Smoke Abatement Exhibition.
April 1st and 2nd (Milan).—Italian National Convention upon the Sexual Question.
" (London).—First Congress of Pure Food and Health Society of Great Britain.
" 1st-7th (Tunis).—Twenty-second Congress of French-speaking Alienists and Neurologists.
" 8th-13th (Rome).—Seventh International Congress of Dermatology and Syphilology.
" 8th-15th (Johannesburg).—Thirteenth South African Medical Congress.

Medical Diary for the ensuing Week.

SOCIETIES.

ROYAL SOCIETY OF MEDICINE, 15, Cavendish-square, W (temporary address during building of new house).

TUESDAY.

PATHOLOGICAL SECTION (Hon. Secretaries—J. C. G. Ledingham, A. E. Boycott): at 8.30 P.M.

Laboratory Meeting at the Pathological Department, St. Bartholomew's Hospital, E.C.

Dr. M. H. Gordon: Slides illustrating Histology of Cord in Acute Poliomyelitis.

Dr. J. F. Gaskell: The Development of a Longitudinal Muscular Coat in the Renal Artery.

Dr. A. E. Gow: The Occurrence of Albumin in the Cerebro-spinal Fluid.

Dr. J. E. H. Roberts: Tumours of Tendon Sheaths.

Dr. F. M. Andrewes: A Case of Syphilitic Disease of the Aortic Intima.

Dr. F. M. Andrewes and Dr. A. E. Gow: The Simulation of Spirochætes by Fibrin Filaments under Dark Background Illumination.

FRIDAY.

GENERAL MEETING OF FELLOWS at 4.45 P.M.

Election of Candidates for Fellowship.

CLINICAL SECTION (Hon. Secretaries: James Galloway, C. H. Fagge): at 8.30 P.M.

Cases:

Mr. F. J. Steward: Successful Excision of Epithelioma of Lower End of Pharynx.

Mr. W. H. Battle: Mikulicz' Disease.

Dr. F. Langmead: Anomalous Œdema.

Paper:

Dr. Wilfred Harris and Mr. W. H. Clayton Greene: A Case of Congenital Absence of the Left Half of the Diaphragm Simulating Pneumothorax.

MEDICAL SOCIETY OF LONDON, 11, Chandos-street, Cavendish-square, W.

MONDAY.—9 P.M., Dr. A. E. Garrod: Glycosuria. (Lettsomian Lecture I.)

RÖNTGEN SOCIETY, Institution of Electrical Engineers, Victoria Embankment, W.C.

TUESDAY.—8.15 P.M., Hon. R. J. Strutt: After-glow in Vacuum Discharge Tubes.

ROYAL SOCIETY OF ARTS, John-street, Adelphi, W.C.

WEDNESDAY.—8 P.M., Dr. L. Hill and Dr. M. Flack: The Influence of Ozone in Ventilation.

OPHTHALMOLOGICAL SOCIETY, 11, Chandos-street, Cavendish-square, W.

THURSDAY.—8 P.M., Cases will be shown by Mr. R. Doyne and Mr. C. Wray.

WIMBLEDON AND DISTRICT MEDICAL SOCIETY, Johnston's Rooms, 6, Broadway, Wimbledon.

FRIDAY.—9 P.M., Mr. J. S. Joly: Recent Advances in the Diagnosis and Treatment of Syphilis and Gonorrhœa.

LECTURES, ADDRESSES, DEMONSTRATIONS, &c.

MEDICAL GRADUATES' COLLEGE AND POLYCLINIC, 22, Chenies-street, W.C.

MONDAY.—4 P.M., Mr. Willmott Evans: Clinique (Skin). 5.15 P.M. Lecture:—Mr. A. Lawson: Glaucoma (illustrated by lantern slides).

TUESDAY.—4 P.M., Dr. C. O. Hawthorne: Clinique (Medical). 5.15 P.M., Lecture:—Mr. H. A. Whitelock (Oxford): The Injuries to the Extensor Apparatus of the Knee-joint.

WEDNESDAY.—4 P.M., Mr. E. R. Carling: Clinique (Surgical). 5.15 P.M., Lecture:—Mr. J. Morrison: Use of Forceps during the Second Stage of Labour.

THURSDAY.—4 P.M., Mr. R. Howard: Clinique (Surgical). 5.15 P.M., Lecture:—Dr. F. J. Smith: Diet in Enteric Fever.

FRIDAY.—4 P.M., Dr. Dan McKenzie Clinique (Ear, Nose, and Throat). 5.15 P.M., Lecture:—Dr. W. Wingrave: Pathology of Discharges.

POST-GRADUATE COLLEGE, West London Hospital, Hammersmith-road, W.

MONDAY.—10 A.M., Dr. Simson: Diseases of Women. 10.30 A.M. Surgical Registrar: Demonstration of Cases in Wards. 12 noon, Dr. Bernstein: Pathological Demonstration. 2 P.M., Medical and Surgical Clinics. X Rays. Operations. 2.30 P.M., Mr. Dunn: Diseases of the Eye. 5 P.M., Lecture:—Mr. Armour: Symptoms and Treatment of Gall Stones.

TUESDAY.—10 A.M., Dr. Robinson: Gynæcological Operations. 11.30 A.M., Mr. Etherington-Smith: Demonstration of Minor Operations. 2 P.M., Medical and Surgical Clinics. X Rays. Operations. Dr Davis: Diseases of the Throat, Nose, and Ear. 2.30 P.M., Dr. Abraham: Diseases of the Skin. 5 P.M., Lecture:—Mr. Pardoe: Clinical (Urinary Surgery).

WEDNESDAY.—10 A.M., Dr. Saunders: Diseases of Children. Dr. Davis: Operations of the Throat, Nose, and Ear. 10.30 A.M., Surgical Registrar: Demonstration of Cases in Wards. 2 P.M., Medical and Surgical Clinics. X Rays. Operations. Mr. B. Harman: Diseases of the Eye. 2.30 P.M. Dr. Simson: Diseases of Women. 5 P.M., Lecture:—Dr. Beddard: Practical Medicine. (Lecture III.)

THURSDAY.—10 A.M., Dr. Simson: Gynæcological Demonstration. 12.15 P.M., Lecture—Dr. G. Stewart: Practical Medicine. 2 P.M., Medical and Surgical Clinics. X Rays. Operations. 2.30 P.M., Mr. Dunn: Diseases of the Eye. 5 P.M., Lecture:—Mr. Baldwin: Practical Surgery. (Lecture III.)

FRIDAY.—10 A.M., Dr. Robinson: Gynæcological Operations. 12.15 P.M., Dr. Pritchard: Practical Medicine. 2 P.M., Medical and Surgical Clinics. X Rays. Operations. Dr. Davis: Diseases of the Throat, Nose, and Ear. 2.30 P.M., Dr. Abraham: Diseases of the Skin. 5 P.M., Lecture:—Dr. R. H. Cole: Manic Depressive Insanity.

SATURDAY.—10 A.M., Dr. Saunders: Diseases of Children. Dr. Davis: Operations of the Throat, Nose, and Ear. Mr. Bishop Harman: Diseases of the Eye. 10.30 A.M., Medical Registrar: Demonstration of Cases in Wards. 2 P.M., Medical and Surgical Clinics. X Rays. Operations.

NORTH-EAST LONDON POST-GRADUATE COLLEGE, Prince of Wales's General Hospital, Tottenham, N.

MONDAY.—Clinics:—10.30 A.M., Surgical Out-patient (Mr. R. Gillespie). 2.30 P.M., Medical Out-patient (Dr. T. R. Whipham); Nose, Throat, and Ear (Mr. H. D. Gillies). 3 P.M., Clinical Pathology and Pathological Demonstration (Dr. W. H. Duncan).

TUESDAY.—Clinic; 2.30 P.M., Operations. Clinics:—Medical Out-patient (Dr. A. G. Auld).; Surgical (Mr. Howell Evans); Gynæcological (Dr. A. E. Giles). 3.30 P.M., Medical In-patient (Dr. A. J. Whiting). 4.30 P.M., Lecture:—Mr. E. Gillespie: Diseases of the Rectum and Anal Canal.

WEDNESDAY.—Clinics:—2 P.M., Throat Operations (Mr. Gillies). 2.30 P.M., Children's Out-patient (Dr. T. R. Whipham); Skin (Dr. G. N. Meachen): Eye (Mr. R. P. Brooks). 3 P.M., X Rays (Mr. W. Steuart); Clinical Pathology and Pathological Demonstration (Dr. W. H. Duncan). 5.30 P.M., Eye Operations (Mr. Brooks).

THURSDAY.—2.30 P.M., Gynæcological Operations (Dr. A. E. Giles). Clinics:—Medical Out-patient (Dr. A. J. Whiting); Surgical (Mr. Carson). 3 P.M., Medical In-patient (Dr. G. P. Chappel). 4.30 P.M., Lecture:—Mr. E. Gillespie: Diseases of the Rectum and Anal Canal.

FRIDAY.—2.30 P.M., Operations. Clinics:—Medical Out-patient (Dr. A. G. Auld): Surgical (Mr. E. Gillespie); Eye (Mr. R. P. Brooks). 3 P.M., Medical In-patient (Dr. R. M. Leslie); Clinical Pathology and Pathological Demonstration (Dr. W. H. Duncan).

LONDON SCHOOL OF CLINICAL MEDICINE, Dreadnought Hospital, Greenwich.

MONDAY.—2 P.M., Operations. 2.15 P.M., Mr. Turner: Surgery. 3.15 P.M., Sir Dyce Duckworth: Medicine. 4.30 P.M., Mr. R. Lake: Ear and Throat. Out-patient Demonstrations:—10 A.M., Surgical and Medical. 12 noon, Ear and Throat.

TUESDAY.—2 P.M., Operations. 3.15 P.M., Dr. R. Wells: Medicine. 2.15 P.M., Mr. R. Carling: Surgery. 4.15 P.M., Sir M. Morris: Diseases of the Skin. Out-patient Demonstrations:—10 A.M., Surgical and Medical. 12 noon, Skin. 3.15 P.M., Special Lecture: Dr. R. Wells: Blood-pressure and the Method of Estimating it Clinically.

WEDNESDAY.—2 P.M., Operations. 2.15 P.M., Dr. F. Taylor: Medicine. 3.30 P.M., Mr. Cargill: Ophthalmology. Out-patient Demonstrations:—10 A.M., Surgical and Medical. 11 A.M., Eye. 2.15 P.M., Special Lecture:—Dr. F. Taylor: Enlargements of Liver. 5 P.M., Special Demonstration (or Lecture):—Mr. McGavin: Surgical.

THURSDAY.—2 P.M., Operations. 2.15 P.M., Dr. G. Rankin: Medicine. 3.15 P.M., Sir W. Bennett: Surgery. Out-patient Demonstrations:—10 A.M., Surgical and Medical. 12 noon, Ear and Throat. 4.30 P.M., Special Lecture:—Mr. Pendlebury: Hernia in Children.

FRIDAY.—2 P.M., Operations. 2.15 P.M., Sir J. Rose Bradford: Medicine. 3.15 P.M., Mr. McGavin: Surgery. Out-patient Demonstrations:—10 A.M., Surgical and Medical. 12 noon, Skin.

SATURDAY.—10 A.M., Radiography. 11 A.M., Dr. A. Davies: Pathological Demonstration. 2 P.M., Operations. Out-patient Demonstration:—10 A.M., Surgical and Medical. 11 A.M., Eye.

HOSPITAL FOR SICK CHILDREN, Great Ormond-street, W.C.

THURSDAY.—4 P.M., Lecture:—Dr. Thursfield: Pleurisy in Childhood.

NATIONAL HOSPITAL FOR THE PARALYSED AND EPILEPTIC, Queen-square, Bloomsbury, W.C.

TUESDAY.—3.30 P.M., Clinical Lecture:—Dr. F. Batten: Experimental Poliomyelitis.

FRIDAY.—3.30 P.M., Clinical Lecture:—Dr. Ormerod: Clinical Cases.

ST. JOHN'S HOSPITAL FOR DISEASES OF THE SKIN, 49, Leicester-square, W.C.

TUESDAY.—6 P.M., Dr. W. Griffith: Diagnosis and Treatment of Syphilis.

THURSDAY.—6 P.M., Chesterfield Lecture:—Dr. M. Dockrell: Fungous Diseases of the Skin—I., Tinea Circinata; II., Tinea Imbricata; III., Tinea Versicolor; IV., Erythrasma; V., Actinomycosis; VI., Madura Foot.

UNIVERSITY OF LONDON (UNIVERSITY COLLEGE), The Francis Galton Laboratory for National Eugenics.

TUESDAY.—8.30 P.M., Mr. K. Pearson: Sir Francis Galton—His Work and Teaching. (Lecture II.)

ROYAL INSTITUTION OF GREAT BRITAIN, Albemarle-street, Piccadilly, W.

MONDAY.—5 P.M., General Meeting.

TUESDAY.—3 P.M., Prof. W. Bateson: The Study of Genetics. (Lecture IV.)

FRIDAY.—9 P.M., Mr. J. A. Harker: Very High Temperatures (with Electric Furnace Experiments).

ROYAL SANITARY INSTITUTE, Board Room, Poor Law Offices, Shakespeare-street, Nottingham.

SATURDAY.—11 A.M., Discussion on Local Public Health Administration and the Insurance Act (opened by Alderman T. J. Dabell, M.R.C.S., J.P.).

ANCOATS HOSPITAL, Manchester.

THURSDAY.—4.15 P.M., A Demonstration of Medical and Surgical Cases will given by the Honorary Staff. (Post-Graduate Clinic.)

MANCHESTER ROYAL INFIRMARY.

TUESDAY.—4.30 P.M., Dr. Brockbank: Modern Methods of Cardiac Diagnosis.

FRIDAY.—4.30 P.M., Mr. J. H. Ray: Tumours and Enlargements of the Thyroid Gland.

OPERATIONS.

METROPOLITAN HOSPITALS.

MONDAY (5th).—London (2 P.M.), St. Bartholomew's (1.30 P.M.), St. Thomas's (3.30 P.M.), St. George's (2 P.M.), St. Mary's (2.30 P.M.), Middlesex (1.30 P.M.), Westminster (2 P.M.), Chelsea (2 P.M.), Samaritan (Gynæcological, by Physicians, 2 P.M.), Soho-square (2 P.M.), Gt. Northern Central (2.30 P.M.), West London (2.30 P.M.), London Throat (9.30 A.M.), Royal Free (2 P.M.), Guy's (1.30 P.M.), Children, Gt. Ormond-street (9 A.M.), St. Mark's (2.30 P.M.), Central London Throat and Ear (Minor 9 A.M., Major 2 P.M.).

TUESDAY (6th).—London (2 P.M.), St. Bartholomew's (1.30 P.M.), St. Thomas's (3.30 P.M.), Guy's (1.30 P.M.), Middlesex (1.30 P.M.), Westminster (2 P.M.), West London, (2.30 P.M.), University College (2 P.M.), St. George's (1 P.M.), St. Mary's (1 P.M.), St. Mark's (2.30 P.M.), Cancer (2 P.M.), Metropolitan (2.30 P.M.), London Throat (9.30 A.M.), Samaritan (9.30 A.M. and 2.30 P.M.), Throat, Golden-square (9.30 A.M.), Soho-square (2 P.M.), Chelsea (2 P.M.), Children, Gt. Ormond-street (9 A.M. and 2 P.M., Ophthalmic, 2 P.M.), Tottenham (2.30 P.M.). Central London Throat and Ear (Minor, 9 A.M., Major, 2 P.M.), Royal National Orthopædic (9.30 A.M. and 4 P.M.).

WEDNESDAY (7th).—St. Bartholomew's (1.30 P.M.), University College (2 P.M.), Royal Free (2 P.M.), Middlesex (1.30 P.M.), Charing Cross (3 P.M.), St. Thomas's 2 P.M.), London (2 P.M.), King's College (2 P.M.), St. George's (Ophthalmic, 1 P.M.), St. Mary's (2 P.M.), St. Peter's (2 P.M.), Samaritan (9.30 A.M. and 2.30 P.M.), Gt. Northern Central (2.30 P.M.), Westminster (2 P.M.), Metropolitan (2.30 P.M.), London Throat (9.30 A.M.), Cancer (2 P.M.), Throat, Golden-square (9.30 A.M.), Guy's (1.30 P.M.), Royal Ear (2 P.M.), Children, Gt. Ormond-street (9 A.M. and 9.30 A.M., Dental, 2 P.M.), Tottenham (Ophthalmic, 2.30 P.M.), West London (2.30 P.M.), Central London Throat and Ear (Minor, 9 A.M., Major, 2 P.M.).

THURSDAY (8th).—St. Bartholomew's (1.30 P.M.), St. Thomas's (3.30 P.M.), University College (2 P.M.), Charing Cross (3 P.M.), St. George's (1 P.M.), London (2 P.M.), King's College (2 P.M.), Middlesex (1.30 P.M.), St. Mary's (2.30 P.M.), Soho-square (2 P.M.), North-West London (2 P.M.), Gt. Northern Central (Gynæcological, 2.30 P.M.), Metropolitan (2.30 P.M.), London Throat (9.30 A.M.), Samaritan (9.30 A.M and 2.30 P.M.), Throat, Golden-square (9.30 A.M.), Guy's (1.30 P.M.), Royal National Orthopædic (9 A.M. and 3.30 P.M.), Royal Ear (2 P.M.), Children Gt. Ormond-street (9 A.M. and 2 P.M.), Tottenham (Gynæcological, 2.30 P.M.), West London (2.30 P.M), Central London Throat and Ear (Minor, 9 A.M., Major, 2 P.M.).

FRIDAY (9th).—London (2 P.M.), St. Bartholomew's (1.30 P.M.), St. Thomas's (3.30 P.M.), Guy's (1.30 P.M.), Middlesex (1.30 P.M.), Charing Cross (3 P.M.), St. George's (1 P.M.), King's College (2 P.M.), St. Mary's (2 P.M.), Ophthalmic (10 A.M.), Cancer (2 P.M.), Chelsea (2 P.M.), Gt. Northern Central (2.30 P.M.), West London (2.30 P.M.), London Throat (9.30 A.M.), Samaritan (9.30 A.M. and 2.30 P.M.), Throat, Golden-square (9.30 A.M.), Royal National Orthopædic (3.30 P.M.), Soho-square (2 P.M.), Children, Gt. Ormond-street (9 A.M., Aural, 2 P.M.), Tottenham (2.30 P.M.), St. Peter's (2 P.M.)., Central London Throat and Ear (Minor, 9 A.M., Major, 2 P.M.).

SATURDAY (10th).—Royal Free (9A.M.), London (2 P.M.), Middlesex (1.30 P.M.), St. Thomas's (2 P.M.), University College (9.15 A.M.), Charing Cross (2 P.M.), St. George's (1 P.M.), St. Mary's (10 A.M.), Throat, Golden-square (9.30 A.M.), Guy's (1.30 P.M.), Children, Gt. Ormond-street (9 A.M. and 9.30 A.M.), West London (2.30 P.M.).

At the Royal Eye Hospital (2 P.M.), the Royal London Ophthalmic (10 A.M.), the Royal Westminster Ophthalmic (1.30 P.M.), and the Central London Ophthalmic (2 P.M.), Hospital operations are performed daily.

EDITORIAL NOTICES.

IT is most important that communications relating to the Editorial business of THE LANCET should be addressed *exclusively* "TO THE EDITOR," and not in any case to any gentleman who may be supposed to be connected with the Editorial staff. It is urgently necessary that attention should be given to this notice.

It is especially requested that early intelligence of local events having a medical interest, or which it is desirable to bring under the notice of the profession, may be sent direct to this office.

Lectures, original articles, and reports should be written on one side of the paper only, AND WHEN ACCOMPANIED BY BLOCKS IT IS REQUESTED THAT THE NAME OF THE AUTHOR, AND IF POSSIBLE OF THE ARTICLE, SHOULD BE WRITTEN ON THE BLOCKS TO FACILITATE IDENTIFICATION.

Letters, whether intended for insertion or for private information, must be authenticated by the names and addresses of their writers—not necessarily for publication.

We cannot prescribe or recommend practitioners.

Local papers containing reports or news paragraphs should be marked and addressed "To the Sub-Editor."

Letters relating to the publication, sale and advertising departments of THE LANCET *should be addressed "To the Manager."*

We cannot undertake to return MSS. not used.

MANAGER'S NOTICES.

THE INDEX TO THE LANCET.

The Index and Title-page to Vol. II. of 1911 were given in THE LANCET of Dec. 30th, 1911.

VOLUMES AND CASES.

VOLUMES for the second half of the year 1911 are now ready. Bound in cloth, gilt lettered, price 16*s.*, carriage extra.

Cases for binding the half-year's numbers are also ready. Cloth, gilt lettered, price 2*s.*, by post 2*s.* 3*d.*

To be obtained on application to the Manager, accompanied by remittance.

TO SUBSCRIBERS.

WILL Subscribers please note that only those subscriptions which are sent direct to the Proprietors of THE LANCET at their Offices, 423, Strand, London, W.C., are dealt with by them? Subscriptions paid to London or to local newsagents (with none of whom have the Proprietors any connexion whatever) do not reach THE LANCET Offices, and consequently inquiries concerning missing copies, &c., should be sent to the Agent to whom the subscription is paid, and *not* to THE LANCET Offices.

Subscribers, by sending their subscriptions direct to THE LANCET Offices, will insure regularity in the despatch of their Journals and an earlier delivery than the majority of Agents are able to effect.

THE COLONIAL AND FOREIGN EDITION (printed on thin paper) is published in time to catch the weekly Friday mails to all parts of the world.

The rates of subscriptions, post free from THE LANCET Offices, have been reduced, and are now as follows:—

FOR THE UNITED KINGDOM.		TO THE COLONIES AND ABROAD.	
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(Taken daily at 8.30 a.m. by Steward's Instruments.)

THE LANCET Office, Jan. 31st, 1912.

Date.	Barometer reduced to Sea Level and 32° F.	Direction of Wind.	Rain fall.	Solar Radio in Vacuo.	Maximum Temp. Shade.	Min. Temp.	Wet Bulb.	Dry Bulb.	Remarks.
Jan. 25	29·62	W.	0·37	43	43	40	40	41	Overcast
,, 26	29·83	NNE	0·28	49	52	39	38	39	Overcast
,, 27	30·13	N.E.	...	50	39	34	33	36	Cloudy
,, 28	30·27	N.E.	...	53	38	29	—	30	Fine
,, 29	30·31	E.	...	50	38	27	—	28	Foggy
,, 30	30·28	N.	...	47	41	28	33	33	Overcast
,, 31	30·02	W.	...	49	41	33	34	36	Overcast

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A Lecture

ON

CERTAIN CHRONIC GLANDULAR ENLARGEMENTS.

Delivered before the Greenock Faculty of Medicine on Dec. 6th, 1911,

BY WALTER K. HUNTER, M.D., D.Sc. GLASG.,

MUIRHEAD PROFESSOR OF MEDICINE, GLASGOW UNIVERSITY; PHYSICIAN, GLASGOW ROYAL INFIRMARY.

MR. PRESIDENT AND GENTLEMEN,—I have chosen this subject for my lecture, not because I have anything fresh to say regarding the etiology and pathogenesis of the diseases of lymphatic glands, but because I have had under my care recently a number of cases of glandular enlargement in which the diagnosis was a matter of no little difficulty, and which may serve, therefore, to illustrate some of the problems which present themselves in dealing with other cases of a similar kind.

CLASSIFICATION.

In proceeding to investigate any case of glandular enlargement it is well to have in one's mind some sort of classification of the various diseases to which lymphatic glands are subject. Such a classification should, if possible, be based on the etiology of the various enlargements; but as the specific virus in so many of these diseases is still unknown it seems more convenient, in the meantime at least, to group the glandular enlargements according to their histological anatomy.

The lymphatic gland, you will recollect, consists of a framework of connective tissue in which masses of lymphoid cells are arranged in regular groups. Each gland has a capsule of firm connective tissue from the inner surface of which trabeculæ are given off, and which converge towards the hilus of the gland: the spaces between the trabeculæ are filled up by a very fine reticular tissue. The lymph follicles appear as rounded nodules at the periphery of the gland, and they send off cord-like aggregations of lymphocytes which anastomose freely and form its medullary portion. Between the collections of lymphoid cells (follicles and follicular cords) lie the lymph sinuses. These spaces are traversed by the cell reticulum, and they and the reticulum are lined with flat, polygonal, epithelioid cells.

The two chief cellular elements, therefore, in the lymphatic gland are: (1) the lymphoid cells; and (2) the cells of the reticulum, with which one includes the epithelioid cells; and most of the primary diseases of glands can be grouped into one of two classes according as it is the lymphoid or the connective tissue elements that are primarily affected.

GROUP I.—HYPERPLASIA OF LYMPHOID CELLS.

In the first group the outstanding morbid change consists of a marked hyperplasia of the lymphoid cells. The follicles are thus greatly increased in size, and overflow, as it were, into the sinuses, which come to be flooded with lymphocytes. The gland on section presents, therefore, the appearance of a homogeneous mass of lymphoid cells with no differentiation into sinus and follicle. Cases with glandular enlargement of this sort have been grouped under the term lymphocytoma; but whilst the glands from such cases have much the same structure histologically, one may find marked differences clinically between the individual cases. In some cases, for example, the glands involved are limited in number, whilst in others the glandular enlargement is widespread. In some the lymphocytes infiltrate the gland capsule, and even invade the surrounding tissues; and in some cases, again, there are lymphocytes to be seen infiltrating the liver, kidneys, and other organs. In almost all the cases the disease tends to be progressive, but in some the growth is so slow as to make such cases really benign. There are, however, all degrees of malignancy to be met with, and cases that have been benign for a long time may ultimately take on a much more active growth.

Some of these cases of lymphocytoma show no change in the characters of the blood. In others, on the other hand, there is a great increase in the number of white corpuscles, and usually the increase is in the lymphocytes. There may, however, be this relative and absolute increase of lymphocytes without the total number of white cells being increased.

Under the term lymphocytoma we include, then, cases of what is called pseudoleukæmia, the lymphatic leukæmias, and the lymphosarcomas, as well as any glandular enlargement due to an overgrowth of the lymphoid elements in the gland. Warthin[1] maintains that these different forms of lymphocytoma are genetically related, that they are, indeed, but different phases of the same disease. And from the histological point of view it is by no means easy to draw a dividing line between the different forms, to distinguish histologically the gland, for example, of a case of lymphatic leukæmia from that of a case of lymphosarcoma. The line to be drawn between these two conditions is not a very definite one, and to make the differentiation more difficult the characters of the blood in lymphosarcoma sometimes assume the appearances met with in lymphatic leukæmia.

GROUP II.—OVERGROWTH OF CONNECTIVE TISSUE ELEMENTS.

In the second group of cases the enlargement depends on an overgrowth in the connective tissue elements of the gland. This hyperplasia may be regarded as inflammatory in nature, the special characters of the reaction depending on the specific virus causing the disease. I must, however, make it clear that we are at present considering only the chronic enlargements of glands, such enlargements as show little tendency to suppuration. A micro-organism by growing in, or passing through, a gland seems to lose some of its virulence, and it may be that it is this attenuation of the virus that determines the chronicity of the growth as well as the limitation of the infection to the lymphatic system.

As in Class I., so here also we may have only one group of glands enlarged, or else the enlargement may involve almost all the glands in the body; all gradations are to be met with between these two extremes.

Perhaps the most striking glandular enlargement in this second group is that seen in Hodgkin's disease (endothelioid type). But there are also cases of tuberculous, or of syphilitic, adenitis which clinically are very difficult to differentiate from Hodgkin's disease, and the same even applies to certain chronic inflammations of glands, infective in origin, but not necessarily always due to any one specific bacterium. This last type of enlargement may be called chronic simple adenitis.

Chronic Simple Adenitis.

Chronic simple adenitis, then, can probably be produced by almost any of the pathogenic micro-organisms of low virulence. The histological process consists of a proliferation of the endothelial cells and cells of the reticulum, with subsequent diffuse and slow fibrosis. The capsule of the gland becomes greatly thickened and infiltrated with cells; the trabeculæ are also thickened and the sinuses disappear. Sometimes to begin with there is a definite hyperplasia in the follicles, but in the later stages the stroma increases to such an extent as entirely to smother the lymphoid elements.

This form of adenitis most commonly affects only one group of glands, but it has been shown that the glandular enlargement may be widespread and simulate very closely Hodgkin's disease.[2]

Tuberculous Adenitis.

In the cases of tuberculous adenitis that resemble Hodgkin's disease there is little tendency to caseation, and the glands ultimately become fibrosed. The tuberculous process usually begins in the lymph follicles where there are to be seen aggregations of epithelioid and giant cells derived from the cells of the reticulum. There is also a hyperplasia of the epithelioid cells of the sinuses in the neighbourhood of the tubercle, and this may give rise to a very diffuse epithelioid tuberculosis with few giant cells and little or no caseation. The lymphoid tissue may be replaced to a considerable extent by this epithelioid growth.

This tuberculous adenitis may affect one group of glands,

[1] Osler and Macrae's System of Medicine, vol. iv., p. 827.
[2] Maladies des Veins et des Lymphatiques, by Widal, Bezançon, and Labbé, p. 117.

or the glandular enlargement may be widespread; the spleen even may become affected.

Syphilitic Adenitis.

Syphilitic adenitis is frequently met with as an early manifestation of secondary syphilis, and the glandular enlargements may be widespread and may persist for years. It is, however, the glandular enlargements of the tertiary stage that are most likely to be mistaken for Hodgkin's disease. Such cases of syphilitic adenitis are rare. Clinically they are difficult to recognise as being syphilitic in origin, and even on histological examination the appearances may resemble very closely those of a chronic tuberculous adenitis.[3] Treatment by iodide of potassium may be used as an aid in clearing up the nature of the adenitis.

Hodgkin's Disease.

Hodgkin's disease has also many of the characters of a chronic inflammation, but it is seldom difficult to distinguish it histologically from a syphilitic or a tuberculous adenitis. In Hodgkin's disease there seems to be an initial hyperplasia of the lymphoid cells with active proliferation of their germinal centres. There is also a hyperæmia of the gland with proliferation of the reticular and endothelial cells. Giant cells are formed and there are many eosinophile cells. The reticulum is increased and forms a network of rather coarse connective tissue in the meshes of which are to be seen a considerable variety of cells—large and small lymphocytes, polynuclear cells, epithelioid cells, plasma cells, eosinophile cells, and mononuclear and multinuclear giant cells. There are frequently also small areas of necrosis sometimes containing fibrin and sometimes polynuclear cells. In the later stages of the disease the gland gets almost completely converted into fibrous tissue. Secondary deposits may be met with in the spleen, liver, kidneys, bone marrow, lungs, intestinal tract, or skin. The growths in Hodgkin's disease do not, however, often invade surrounding tissues, though in some cases they do, almost in the same way as does a malignant tumour.

Secondary Infections.

Now it is to be noted that all these glandular enlargements seem to be peculiarly liable to secondary infections, which may considerably alter the histological appearances. Thus a case of simple adenitis may assume the characters of a tuberculous adenitis or of Hodgkin's disease; and, again, the glands in Hodgkin's disease may show a secondary infection with the tubercle bacillus. Or, yet again, any of the glandular enlargements of Group II. may become replaced by a growth with the histological characters of Group I. Case 3 furnishes an example of this, where what I take to have been a syphilitic adenitis was ultimately replaced by a lymphosarcomatous growth.

Characters of Blood.

There is nothing characteristic in the appearances of the blood in any of the enlargements of Group II. It is true there is very often a secondary anæmia, and sometimes a leucocytosis; but the former may be met with in any debilitating condition, and the latter is probably most often due to secondary infections. Sometimes there is a relative increase of the mononuclear cells, but this is by no means constant.

A Third Group.

A third group of glandular enlargements might be added so as to include tumour growths, and this might be subdivided according as the growth was primary or secondary. Lymphosarcoma is the most common primary tumour growth in glands, but as it seems so closely allied to lymphatic leukæmia it seems more convenient to leave it in Group I. The endothelioma is possibly also a primary growth in glands, but if so it must be very rare. Of the secondary tumour growths cancer is much the most common, but sarcoma and endothelioma may also be found as secondary growths.

ALEUKÆMIC LEUKÆMIA.

The first case I have to describe to you is one of aleukæmic leukæmia, and falls, therefore, to be classed under Group I. The clinical features of the case, however, were those of almost any of the glandular enlargements, and as there was no increase in the number of the white corpuscles the diagnosis rests almost entirely on the differential leucocyte count, which showed the presence of a very large proportion of lymphocytes. I showed blood-films from this patient at a meeting of the Glasgow Medico-Chirurgical Society[4] last winter.[5]

CASE 1.—The patient was a boy aged 13 years. The glandular enlargement was first noticed in January, 1910. The glands all over the body were enlarged but those in the cervical regions most so. During the spring months of 1910 the glands lessened in size, but towards the end of June they seemed to enlarge again. The general health all this time remained unaffected.

I saw the boy for the first time at the beginning of September, 1910, and then he looked strong and robust without any appearance of anæmia. The glandular enlargement was not very considerable, though it was quite noticeable. There were enlarged glands along the line of the sterno-mastoid as well as at the anterior borders of the trapezius. The submaxillary glands were also enlarged, but no individual gland seemed much larger than a marble. Glands of the same size were found in the armpits and in the groins. The spleen was enlarged and extended as low as the level of the umbilicus. The liver was not palpable, and there was no evidence of enlargement of the mediastinal or abdominal glands.

The chief point of interest in the subsequent course of the illness was the alternate increase and diminution in the size of the glands. Thus, by Oct. 14th, 1910, the glandular enlargement in the neck had almost disappeared. Then about the beginning of December the swelling reappeared, and by January the glands were much the same size as on Sept. 1st. There were noted for the first time a large number of small subcutaneous nodules varying in size from a pea to a millet seed, all over both arms, less numerous on the thighs, and scanty on the back. There were also nodules of this sort at the outer end of each eyebrow, and the skin here had a purple, cyanosed tint. Similar nodules were noted in the ocular conjunctiva. Subsequent to this the glands became softer in consistence and again began to lessen in size, and by the middle of February the glandular enlargements as well as the subcutaneous nodules had almost entirely disappeared. Then, yet again, the glands enlarged and by the middle of April the condition was much the same as in January. During the summer the glands again lessened in size but never so much as formerly, and in the late autumn they again became enlarged; by Nov. 11th, 1911, they were nearly as large as ever they had been. The subcutaneous nodules, too, were now very prominent and much the same as formerly noted, though on the face more numerous and of larger size than at any time before. The size of the spleen remained fairly constant and was now very little larger than a year ago.

The patient's general condition during the past year showed considerable variation and the improvement seems to have been more often coincident with the enlargements of the glands than with their diminution in size. For example, at the middle of October, 1910, the patient was pale and disinclined for exertion. A few weeks later he seemed much better and able to run about. Then again in January he was ill, seemed fevered, and was confined to bed for some weeks. He improved during last summer, and was able to be up and go outside; but he was not nearly so robust as at the corresponding time a year before.

Treatment with arsenic was carried out for many months but in a somewhat intermittent manner, as it so often seemed to cause diarrhœa. It is very doubtful if this drug had much to do with the successive diminutions in the size of the glands that I have described.

The blood count was as follows:—

Blood Counts in Case 1.

	Red corpuscles.	White corpuscles.	Hæmoglobin.
Sept. 1st, 1910...	3,950,000 per c.mm....	7,916 per c.mm. ...	85 per cent.
Oct. 14th, ,, ...	3,160,000 ,, ,, ...	2,812 ,, ,, ...	55 ,,
Jan. 9th, 1911 ...	3,500,000 ,, ,, ...	9,000 ,, ,, ...	70 ,,
Feb. 18th, ,, ...	1,724,800 ,, ,, ...	3,000 ,, ,, ...	35 ,,
April 15th, ,, ...	1,932,900 ,, ,, ...	8,910 ,, ,, ...	36 ,,
Nov. 11th, ,, ...	3,200,000 ,, ,, ...	11,250 ,, ,, ...	65 ,,

Differential Counts of White Cells.

	Polynuclear cells.	Lymphocytes.	Eosinophiles.
Sept. 1st, 1910 ...	3 per cent. ...	95 per cent. ...	1·5 per cent.
Oct. 14th, ,, ...	10 ,, ...	87 ,, ...	2 ,,
Jan. 9th, 1911 ...	6 ,, ...	94 ,,	—
Feb. 18th, ,, ...	12 ,, ...	88 ,,	—
April 15th, ,, ...	18 ,, ...	81 ,, ...	1 ,,
Nov. 11th, ,, ...	24 ,, ...	69 ,, ...	6 ,,

[3] Loc. cit., p. 123.

[4] Glasgow Medical Journal, February, 1911, p. 134.

[5] N.B.—This patient died on Jan. 12th, 1912.

The individual lymphocytes varied a good deal in size, but the prevailing cell was at least a half larger than a red corpuscle.

A gland was not excised in this patient, and so the diagnosis was not confirmed by histological examination; but the persistent high percentage of lymphocytes seems to leave little doubt that the case is one of lymphatic leukæmia.

ACUTE LYMPHATIC LEUKÆMIA.

The second case[6] I wish to refer to was regarded, up to a few days before death, as suffering from Hodgkin's disease, on the grounds of the glandular enlargements and the absence of any considerable leucocytosis; blood films, however, had not been examined. A differential count when it was made revealed the fact that there were only 2·5 per cent. of polynuclear cells and 97·5 per cent. of mononuclears—mostly lymphocytes; and so the diagnosis had to be altered to that of lymphatic leukæmia.

CASE 2.—The patient was a lad, aged 19, and he had large glandular swellings in the neck, axillæ, and groins. There was also increase of the manubrial dulness, the measurement being 3 inches in transverse diameter. Both liver and spleen were considerably enlarged, the former extending 4 inches and the latter 3 inches below the costal margin. The disease ran a very rapid course, the patient dying within three months from the time the glandular enlargements were first observed.

This case, then, was one of acute lymphatic leukæmia; and in such cases it is not uncommon to find little or no increase in the total number of the white corpuscles, and if this increase does appear it is frequently as one of the terminal events of the disease. There was no gland excised in this patient and a post-mortem examination was not permitted.

ADENITIS OF DOUBTFUL NATURE, WITH MALIGNANT DEVELOPMENTS.

The third case is one of considerable interest, for, to begin with, it was regarded as having the characters of one of the granulomas. Subsequently, however, the glands became overrun with lymphocytes and had therefore the appearances of lymphosarcoma.

CASE 3.—The patient was a man, aged 59, and he was under observation more or less continuously from July 1st to the time of his death on Nov. 10th, 1911. The symptoms began two years previously with a "sore throat and enlarged tonsils." Soon afterwards the glands in the right side of the neck were seen to be enlarged. This swelling gradually increased in size, and about a year later there was enlargement of the glands on the left side of the neck. Later on there were swellings noted in both armpits and in the groins. There seem to have been no constitutional symptoms complained of up to this time, but the patient stated that he had lost 3 stones in weight in the previous three years. Two years before the appearance of the glandular enlargements he contracted syphilis, for which illness he took medicine for a period of two years. Previous to this he had always been a healthy man. His wife and children were alive and well.

On admission to hospital the patient was seen to be a well-built and muscular-looking man. There were no signs of emaciation. There were considerable masses of glands on both sides of the neck, situated chiefly round the angles of the jaw. The individual glands varied a good deal in size and some were larger than a pigeon's egg. There was no definite matting together of the glands, which felt rather elastic to the touch. The right tonsil was of about the size of a walnut, the left of the size of a marble. Both had a pale, gelatinous look, and were tense and elastic on palpation. There were glandular enlargements in both axillæ and in both groins. Neither liver nor spleen was enlarged. The teeth were carious and deficient. There was a faint haze of albumin in the urine. No subcutaneous nodules were to be made out.

A gland was excised from the neck and examined histologically by Professor J. H. Teacher, who reported that the sections had all the appearances of a chronic tuberculous adenitis, with a number of foci of septic softening. A pure culture of staphylococcus albus was obtained from the gland. But in view of the history of syphilis that the patient had given, a Wassermann reaction was sought for and found to be markedly positive. This fact was now laid before Professor Teacher, and he replied that as the appearances of tubercular adenitis are so similar to the chronic adenitis met with in tertiary syphilis, the sections he had examined might quite well come from a glandular enlargement of syphilitic origin.

The patient was therefore given an intravenous injection of salvarsan, and this was repeated a fortnight later. There seemed no doubt whatever that for some days after the first injection there was definite diminution in the size of the enlarged glands, but with the second dose little change was to be noted. Subsequent to this the glands seemed to enlarge again, so that after two months in hospital the glandular condition was practically the same as on admission; the patient had lost 4 lb. in weight, but otherwise his condition seemed little altered. At this time there was no appearance of enlargement of the spleen or liver.

Iodide of potassium was now administered in from 10–20 grains three times a day, and this was continued for the next six weeks. There was, however, no improvement, and by Oct. 11th the glands in the neck, axillæ, and groins were distinctly larger than a month previously. There was now a tumour mass of the size of the closed fist to be made out in the epigastrium and there were also signs of fluid in the left pleural cavity, possibly secondary to some tumour growth in the lung.

A gland was again excised, this time from the axilla, and on examination Professor Teacher reported that it had all the appearances of lymphosarcoma. The gland was overrun with lymphocytes which entirely obscured its fibrous stroma, and the periglandular connective tissue was also infiltrated with lymphoid cells. Cultures were taken from the gland and animals were injected, but with negative results in both cases.

By Oct. 28th the glands in the armpits and in the groins were still larger, as large as a hen's egg, and the tumour mass in the epigastrium could be palpated 2 inches below the umbilicus. The spleen was also greatly enlarged. The patient died about a fortnight later. The blood was examined on two occasions, but showed no very marked abnormality.

Blood Counts in Case 3.

	Red corpuscles.	White corpuscles.	Hæmoglobin.
July 1st, 1911	4,800,000 per c.mm.	9,800 per c.mm.	70 per cent.
Oct 28th, ,,	4,624,000 ,,	11,874 ,,	80 ,,

Differential Counts of White Cells.

	Polynuclears.	Lymphocytes and mononuclears.	Eosinophiles.	Mast cells.
July 17th, 1911	47 per cent.	48 per cent.	3 per cent.	2 per cent.
Oct. 20th, ,,	67 ,,	31 ,,	2 ,,	—

It is most unfortunate that a post-mortem examination was not obtained, as it would have shown what had been the relationship of the primary adenitis to the subsequent lymphosarcomatous growth. But judging from the facts that are before us I am disposed to regard the case as having been, to begin with, either one of tuberculous or of syphilitic adenitis, more probably the latter. Later on the glands apparently took on a lymphosarcomatous growth, but at what stage of the illness this more malignant development appeared it is impossible to be sure.

HODGKIN'S DISEASE.

The fourth case had something of the same clinical features as Case 1, but on histological examination the glands of Case 4 were found to be quite typical of Hodgkin's disease.

CASE 4.—The patient was a schoolboy, aged 11, and he was in my wards from August 4th, 1911, till the time of his death on Nov. 9th. The history of the illness is not very definite, but as far as could be made out there had been some enlarged glands in the neck when the boy was 6 years old. This swelling seems to have disappeared, but to have become noticeable again about a year ago. The boy was taken to the surgical wards in the middle of June (1911) on account of enlarged glands, but subsequent to this they lessened greatly in size, and by the beginning of August the chief complaint was of anæmia, breathlessness on exertion, and swelling of the face and legs.

On admission to the medical wards the skin and mucous membranes were seen to be exceedingly pale, and there was considerable œdema of the face, feet, and legs. No enlarged glands were noted at this time. There were some small

[6] A note of this case was published in THE LANCET of July 18th, 1903, p. 162.

moist râles at both bases and at the left apex, but no enlargement of the liver or spleen. There was a faint trace of albumin in the urine, and the red corpuscles were less than 1,000,000 per c.mm. During August and September there was fairly severe diarrhœa which was difficult to check, and this, along with the râles in the chest, was very suggestive of a widespread tuberculous disease.

During the latter part of September the patient began to improve very greatly and the œdema disappeared. The anæmia, too, became much less marked. Towards the end of September, however, the glands in the neck again began to enlarge, and so rapidly as to suggest a fairly acute inflammatory condition. There was fever, too, of a somewhat irregular type. It was chiefly the glands on the right side of the neck that were enlarged, and they were very soft and elastic to the touch, and freely moveable in their surrounding connective tissue. By the middle of October the œdema of the face and feet returned and the anæmia began to increase again. By this time the glands were lessening in size. One of them was excised, and on examination showed the histological characters of a typical Hodgkin's disease. The boy grew rapidly worse and died on Nov. 9th. The blood was examined on various dates with the following results:—

Blood Counts in Case 4.

	Red corpuscles.	White corpuscles.	Hæmoglobin.
Aug. 4th, 1911...	980,000 per c.mm.	5,600 per c.mm.	18 per cent.
,, 11th, ,, ...	1,140,000 ,,	5,000 ,,	18 ,,
,, 17th, ,, ...	1,100,000 ,,	5,200 ,,	18 ,,
,, 24th, ,, ...	1,080,000 ,,	4,800 ,,	18 ,,
,, 31st, ,, ...	1,130,000 ,,	5,100 ,,	20 ,,
Sept. 20th, ,, ...	2,900,000 ,,	5,800 ,,	40 ,,
Oct. 2nd, ,, ...	3,220,000 ,,	4,900 ,,	38 ,,
,, 19th, ,, ...	2,815,000 ,,	3,500 ,,	30 ,,
,, 30th, ,, ...	1,550,000 ,,	11,800 ,,	20 ,,
Nov. 8th, ,, ...	940,000 ,,	4,400 ,,	13 ,,

Differential Count of White Cells.

	Polynuclears.	Lymphocytes.	Large mononuclears.
Oct. 15th, 1911...	53 per cent.	39 per cent.	8 per cent.

Necropsy.—At the post-mortem examination large glandular masses were found in both sides of the neck, and smaller glands were seen running into the thorax and surrounding the superior vena cava: the œdema of the face was evidently due to pressure on this vessel. The prevertebral glands and the glands at the root of the mesentery were also considerably enlarged. Smaller masses of glands were found in both axillæ. The largest glands came from the neck and were of about the size of a walnut; in consistence they were slightly firmer than a normal gland. The spleen was considerably enlarged and rather fibrous in structure. The marrow in the shaft of the femur was vascular and red. The other organs were very anæmic but otherwise presented little abnormality.

Histological examination of a number of glands showed them all to have the structure of a typical case of Hodgkin's disease.

HODGKIN'S DISEASE: VACCINE TREATMENT.

Case 5 was also one of Hodgkin's disease, and is of interest in that a micro-organism was cultivated from the excised gland and the patient treated by a vaccine prepared from this bacterium.

CASE 5.—The patient was a man, aged 24, and he was admitted to my wards on Sept. 6th, 1909. He remained under treatment for a period of nine months. The beginning of the illness may be dated from April, 1908, when there was noticed for the first time a small lump immediately above the right clavicle. This swelling gradually increased until by the end of August, 1909, there was a considerable tumour mass occupying the right side of the neck. The patient insisted that his general health had all along been excellent; he was always able for any sort of exertion, and his appetite had always been good.

When admitted to hospital in September, 1909, he was seen to be a well-nourished man. There was a considerable swelling on the right side of the neck extending from the mastoid process down to the clavicle. The swelling was apparently made up of a number of enlarged glands, more or less matted together and of firm consistence. On the left side of the neck there was an enlarged gland underneath the upper end of the sterno-mastoid and two enlarged glands immediately above the clavicle. In the right axilla there was a mass of glands nearly as large as a hen's egg; one enlarged gland was to be felt in the left axilla.

There was apparently also some enlargement of the mediastinal glands, for there was an area of dull percussion at the upper end of the sternum, the transverse measurement of this area being 5 inches at the sterno-clavicular articulations and 3½ inches at the level of the fourth costal cartilages. The sternal dulness was continuous below with the upper border of cardiac dulness, and the right border of cardiac dulness extended 1½ inches to the right of the mid-line; the left border was well within the nipple line. There was diminished resonance at the right supraspinous region and in the right infraclavicular area. The breath sound was slightly deficient at the right apex. But there was no dyspnœa, no stridor, and no difficulty in swallowing. The voice, too, was quite clear, and the tonsils were not enlarged. The examination of the abdomen was negative, and in particular the spleen was noted to be of normal size. The inguinal glands were not enlarged.

Glands were excised for diagnostic purposes from the left side of the neck on three different occasions—namely, on Sept. 13th, Oct. 6th, and Feb. 28th—and a subcutaneous nodule from the front of the chest on April 10th.

The histological appearances in all of the glands were much the same. There was hyperplasia of the lymphoid areas and the sinuses were crowded with lymphocytes. Scattered through the sections were small areas of polynuclear leucocytes, and round these were aggregations of small giant cells of the type seen in Hodgkin's disease, many of the cells being very large mononuclear cells and others having several nuclei. Eosinophile cells were present, especially in the neighbourhood of the giant cells. Some of the areas with polynuclear cells were necrotic.

In the gland excised on Feb. 28th there was more connective tissue round the gland and the accumulations of polynuclear cells were larger and had more the appearance of abscess formation. The nodule from the skin showed the same collections of polynuclear leucocytes with the giant cells round about them.

No cultures or smears were made from the gland first excised. But in the smears from the second gland there were found numerous beaded, rod-shaped organisms, and the same bacterium was grown on one of the culture media. In another tube a staphylococcus was obtained, but as this organism was not prominent in the smears it was discarded. No micro-organism was found in smears or in cultures from the third gland or from the nodule excised.

The progress of the case while in hospital was very slow. To begin with, treatment was by liquor arsenicalis (♏ iii.–vii. ter in die), but with little apparent benefit, for by the middle of October the swelling in the neck seemed greater than on admission. Early in November X ray treatment was begun, but again with no very great improvement.

A vaccine was now made by Dr. J. A. Campbell from the diphtheroid-like organism he had grown from the gland excised, and injections were given every ten days during December and January. By Christmas time there was certainly some diminution in the size of the glands, and by the end of February the improvement was very decided. The mediastinal dulness was now little more than normal, though the right border of cardiac dulness extended for over an inch to the right of the mid-line. But in March and April there seemed some recrudescence of the disease in that the glands on the left side of the neck were increasing in size. There appeared about this time on the right front of the chest a number of little subcutaneous nodules which ranged in size from that of a pea to a millet seed. The skin over the nodules was slightly reddened. It was one of these nodules that was excised and examined histologically.

The vaccine treatment was started again on April 18th, and there was again a very great improvement in the patient's condition and a great diminution in the size of the swellings. All the time the patient was in hospital X ray treatment was being persisted with as the state of the skin would permit; but it was during the periods of vaccine treatment that improvement seemed greatest, and this improvement seemed to cease when the injections were intermitted, to begin again with the resumption of the treatment.

The patient's general health all the time he was under observation remained very good. The weight ranged from 9 st. 12 lb. to 10 st. 7½ lb. He sweated, however, profusely, especially at night, and this sweating continued from

September to the end of March. There was some slight fever almost from admission till early in March, the range of temperature being from 97° to 100° and occasionally 101°. Seldom did the temperature remain normal for more than a fortnight at a time; there was, however, no apparent periodicity in the course of the temperature.

There was never any considerable degree of anæmia, the range of the red corpuscles being from 5,470,000 to 4,120,000 per c.mm. and the hæmoglobin from 95 to 78 per cent. From the day of admission onwards till March 15th there was a definite leucocytosis, ranging from 38,200 to 16,000 per c.mm. On April 2nd the white cells fell to 8000 per c.mm., and from that date onwards the range was from 17,800 to 10,000 per c.mm. Some of the counts may be given:—

Differential Counts in Case 5.

	Poly-nuclears.	Lympho-cytes.	Large mono-nuclears.	Eosino-philes.
Sept. 8th, 1909...	84 per cent.	3 per cent.	7 per cent.	6 per cent.
Dec. 25th, ,, ...	78 ,,	...12 ,,	... 2 ,,	... 8 ,,
April 4th, 1910...	72 ,,	...16 ,,	... 1 ,,	...11 ,,
April 24th, ,, ...	76 ,,	...12 ,,	... 5 ,,	... 7 ,,
May 22nd, ,, ...	72 ,,	... 7 ,,	...16 ,,	... 5 ,,

The patient was dismissed from hospital at the end of May, 1910, very greatly improved, the glandular enlargements having almost entirely disappeared, and with instructions to report himself in a few weeks' time. This he unfortunately failed to do, and nothing more definite is known regarding the subsequent history of his illness than that he died in March, 1911.

It is not claimed that the micro-organism grown from the gland in this case is the specific cause of Hodgkin's disease, or even that the vaccine treatment produced the improvements above recorded. One knows how often the glands lessen in size in such cases quite apart from treatment of any sort. Still, the observations are of some interest, and it might be worth while to investigate other cases along similar lines.

ENLARGEMENT OF CERVICAL AND MEDIASTINAL GLANDS (? HODGKIN'S DISEASE).

The next two cases are more difficult to classify. Both may have been suffering from Hodgkin's disease, but of this one cannot be certain.

CASE 6.—The patient was a woman, aged 32, and she was admitted to my wards on Oct. 13th, 1908, remaining under treatment for a period of four months. Her complaint was of swelling of the glands on the right side of the neck and of great shortness of breath.

The illness seemed to date from December, 1907, when the patient first complained of pain in the right shoulder and extending down the arm to the finger-tips. About this time an enlarged gland was noted on the right side of the neck. The pain continued more or less severe for six months, and the swelling in the neck gradually increased in size, some months later the glands on the left side beginning also to enlarge. There seems to have been breathlessness from the beginning of the illness, but at first it was slight and present only on exertion. It gradually became more severe, and subsequent to June, 1908, the patient had not been able to sleep except in a sitting posture. There had been some cough for a week or two before admission to hospital but scarcely any spit. The general health seemed to have been good, and there does not seem to have been much loss of weight.

On admission the patient was seen to be a well-developed and well-nourished woman. Her breathing was noisy and stridulous, and there was a frequent rather brassy cough. She would not lie down in bed as the upright posture was the only one in which she could breathe with any comfort. There were enlarged glands just above the clavicles on both sides of the neck, but they were much larger on the right side than on the left. The mediastinal glands were apparently also enlarged. There was a very dense dull note all over the upper lobe of the right lung, and the same note was obtained over the manubrium sterni. At the left apex there was a comparatively dull note as far down as the second rib. Behind on the right side the dull area extended downwards to near the angle of the scapula. Over both upper lobes the respiratory murmur was distinctly diminished in volume, but over the right it was also high-pitched and had a tubular quality. The heart was normal in size and position. There was no enlargement of the axillary or inguinal glands, and liver and spleen seemed normal in size.

A gland was excised from the neck and examined microscopically. The sections showed the gland embedded in dense connective tissue. The lymphoid tissue in the gland was overrun with polynuclear cells which were rather patchy in their distribution. There was also considerable fibrosis, and many very large clear mononuclear cells. The appearances were suggestive of a later stage of Hodgkin's disease, but not sufficiently distinctive to make one certain of the diagnosis.

The treatment in this case was by means of liquor arsenicalis (♏ ii.–v. ter in die), and X rays applied five days a week to the glands in the neck and over the sternum. In a month's time there was a great improvement in the patient's condition. The breathing was much easier, and unless when the patient was lying down the stridor was quite gone. The glands in the neck were much smaller. There was still dulness, with greatly diminished breath sound, over the right upper lobe in front, but behind the dulness had almost entirely disappeared. The note over the left lung was now clear and the breath sound of good volume. The patient had gained 2 lb. in weight.

Improvement seemed to continue for another month; but then the breathing became more difficult again, though never so bad as on admission. The patient began to lose weight. There was a good deal of cough but very little spit, and no tubercle bacilli in the spit. There was little alteration in the physical signs in the chest.

The patient went home early in February as the skin of the neck and chest was too tender to allow of any more X ray treatment. She died a week or two later.

All the time she was in hospital the temperature was distinctly febrile, being frequently as high as 100° and 101° F. There was a constant leucocytosis, the range being from 17,200 to 30,000 per c.mm. The differential count was as follows:—

Differential Counts in Case 6.

	Poly-nuclears.	Lympho-cytes.	Large mono-nuclears.	Eosino-philes.
Oct. 14th, 1908...	82 per cent.	8 per cent.	7 per cent.	3 per cent.
Dec. 12th, ,, ...	86 ,,	... 5 ,,	... 7 ,,	... 2 ,,

There was no diminution in the number of the red corpuscles.

The condition in this case, then, was apparently one of enlargement of the cervical and mediastinal glands, but what the nature of the enlargement was one cannot be quite certain.

HODGKIN'S DISEASE OR LYMPHOSARCOMA?

CASE 7.—The patient was a young woman, aged 18, and she was under observation and treatment for three months—from Oct. 1st to Dec. 28th, 1907.

The history of the illness was to the effect that about a year before admission to hospital she noticed a swelling just above the right clavicle. Similar swellings appeared higher up in the neck and ultimately coalesced to form the considerable mass noted on admission. There was never any pain in the tumour, and the skin over it was at no time reddened. A fortnight before admission there was some breathlessness and a cough, but no spit. The voice, too, had become husky. There had been no loss of flesh, and the patient was feeling well and taking her food well.

On admission the patient was seen to be well nourished and without any appearance of emaciation. When sitting up, or when lying on the left side, there was little dyspnœa, but when lying on the back or on the right side there was stridulous breathing, suggesting pressure on the trachea. The cough had a brassy quality.

There was a large swelling on the right side of the neck extending from the clavicle up almost to the lobe of the ear, and the larynx and trachea were displaced considerably to the left of the middle line. The tumour mass was hard to the touch and fairly moveable. It seemed to consist of a mass of glands more or less matted together. The glandular enlargement apparently extended some distance into the mediastinum, for there was manubrial dulness with a transverse measurement of 4 inches. At the lower end of the sternum, too, there was a patch of dulness extending 1¼ inches to the right of the middle line, and the heart seemed slightly displaced to the left. The respiratory murmur was equal and vesicular on both sides. The tonsil

were not enlarged, and neither were the axillary, inguinal, or abdominal glands. The spleen extended 1 inch below the costal margin, but the liver was not enlarged.

The patient was treated to begin with with arsenic, and ten days later X ray treatment was commenced. At the end of six weeks a very considerable improvement had taken place in her condition. She had gained 3½ lb. in weight, and the swelling in the neck was considerably less, the circumference of the neck measuring an inch less than formerly. There was still manubrial dulness, but the dyspnœa and stridor had entirely disappeared, and the right border of cardiac dulness was now at the middle line. Six weeks later still the enlarged glands in the neck had almost disappeared, but the manubrial dulness still persisted. The temperature was subnormal throughout the illness. Examination of the blood gave the following results:—

Blood Counts in Case 7.

	Red corpuscles.	White corpuscles.	Hæmoglobin.
Oct. 1st, 1907...	4,800,000 per c.mm.	14,000 per c.mm.	60 per cent.
Nov. 16th, ,, ...	4,000,000 ,,	14,000 ,,	85 ,,
Dec. 28th, ,, ...	4,500,000 ,,	9,800 ,,	78 ,,

Differential Count of White Cells.

Polynuclear cells ...	80·0 per cent.	Large mononuclears	8·5 per cent.
Lymphocytes	10·5 ,,	Eosinophiles	1·0 ,,

The subsequent history, as obtained from an aunt of the patient, was to the effect that about four months after dismissal the glands again enlarged and there was a return of the dyspnœa. The patient went to Ireland and died two years later with a "decline"—that is, about three and a half years from the time the swelling in the neck was first noted.

No histological examination was made in this case, so it is impossible to be certain of the nature of the glandular enlargement: it might have been either Hodgkin's disease or a lymphosarcoma.

ENDOTHELIOMA (?)

The last two cases fall to be grouped with the malignant neoplasms, but the nature of the disease process in both cases was not determined till after death.

CASE 8.—The patient was a man, aged 43, and he was in my wards from July 28th till the time of his death on Nov. 18th, 1911.

The history of the illness is to the effect that three years ago the patient received a blow on the left side of the face and neck. He was not badly hurt, but three days later he noticed some swelling on this side of the neck, and for the next four weeks the swelling gradually increased in size. Plasters were applied and the swelling lessened very much, though it is not certain that it entirely disappeared. A year ago the swelling again became rather prominent, and since then it had gradually increased in size. Six months later the swelling appeared on the right side of the neck, and about this time the patient began to have some difficulty in speaking and swallowing, due, he said, to a lump at the back of his throat. There is no history of much constitutional disturbance or of any notable loss of weight.

On admission to hospital the patient was seen to be a well-developed man but rather emaciated. There was a considerable glandular enlargement on both sides of the neck involving chiefly the glands about the angles of the jaw. The mass on the right side seemed moderately moveable, but that on the left was rather firmly bound down to the underlying structures, and the individual glands seemed somewhat matted together. There was limitation in the movements of the head, not only of rotation, but also of flexion and extension. The jaws, too, could only be separated a short distance, about an inch at the most, and there was thus some difficulty in making a satisfactory examination of the fauces. It was sufficiently evident, however, that there was a large swelling in the posterior wall of the pharynx pushing the soft palate some distance forwards, and it seemed reasonable to suppose that this swelling was continuous with the swellings on both sides of the neck. There was difficulty in protruding the tongue and also in swallowing, but there was no dyspnœa, though the breathing was noisy and the speech indistinct, suggesting some obstruction about the posterior nares. The teeth were in a rather bad condition. There was no pulmonary or cardiac lesion, and no enlargement of the liver or spleen, or of the axillary or inguinal glands.

A gland was excised from the neck and examined by Professor Teacher, who reported that the sections showed a very chronic inflammatory condition, with here and there some aggregations of polynuclear cells. The culture media remained sterile.

In the next four weeks the patient was apparently getting worse. He was losing weight, and there was difficulty in swallowing solids, and considerable respiratory embarrassment. The case clinically had all the features of a malignant growth, and as this had not been confirmed by the histological examination a second gland was excised towards the end of September. Professor Teacher reported that "this gland shows practically the same condition as before—viz., chronic lymphadenitis, with granulation formation, fibrosis, and foci of polymorphonuclear leucocytes."

The administration of fibrolysin was started about the beginning of September and continued for several weeks with apparent relief as regard the symptoms, for by the beginning of October the glands seemed smaller and the dyspnœa was much less. Subsequent to this, however, the glands enlarged again and the patient began to emaciate rather rapidly and to lose strength; he died on Nov. 18th.

During the 16 weeks the patient was in hospital there was some slight fever, the temperature never remaining normal for longer than one week at a time, but it was rarely higher than 100° and only once as high as 101°. The blood count (July 31st, 1911) in this case was as follows: Red corpuscles, 4,410,000 per c.mm.; white corpuscles, 21,250 per c.mm.; hæmoglobin, 74 per cent.

The leucocytosis persisted all the time he was under observation, never being less than 14,200 per c.mm. The differential count on July 31st gave the following proportions:—

Polynuclear cells ...	81 per cent.	Large mononuclears...	10 per cent.
Lymphocytes	8 ,,	Eosinophiles	1 ,,

Necropsy.—At the post-mortem examination there was noted to be an enormous collar of glands in the neck extending from the ears to the clavicles. The glands were firmly matted together. The pharynx was pushed forwards, it and the œsophagus being compressed by the growth, though there was no infiltration of their walls. There was no extension of the growth into the nose or ethmoid cells, but there was some erosion of the bones forming the base of the skull. Neither the tonsils nor the bronchial glands were enlarged, and there were only a few slightly enlarged glands in the upper part of the thorax. There were no metastases to be found.

A somewhat detailed examination of the tumour was undertaken by Dr. J. H. McNicol, and his preparations have been submitted to Professor Teacher, who, after examining a considerable number of slides taken from different portions of the growth, is of opinion that the neoplasm is probably of the nature of an endothelioma. Whether this is a primary growth in the glands or secondary to growth elsewhere one cannot be certain, but careful search has failed to discover a primary seat of origin either in the carotid body or on any endothelial surface. If this growth is an endothelioma it differs in certain essentials from the cases of endothelioma of the neck described by Gilford,[7] in which the lymphatic glands do not seem to have been implicated in any way whatever.

SARCOMA.

CASE 9.[8]—The patient was a man, aged 38, and it was in August, 1905, that he first noted a swelling at the angle of the right jaw. This swelling gradually increased in size and other little tumours appeared in its neighbourhood. By the end of December (1905) enlarged glands were also noted on the left side of the neck. He was admitted to hospital in February, 1906, and then it was observed that on the right side there were enlarged glands extending from the mastoid process to the clavicle and varying in size from that of a pea to that of a walnut. On the left side there was one large gland, the others being small like peas. Some of the glands felt very hard and others rather elastic, but they were all freely moveable. Neither the axillary nor the inguinal glands were enlarged, and the liver and spleen were normal in size. Examination of the blood showed no abnormality.

The case was thought to be one of Hodgkin's disease and was treated with arsenic. There was at first great

[7] Practitioner, December, 1904, p. 729.

[8] This case was published in THE LANCET of July 11th, 1908.

diminution in the size of the glands, but subsequently they again enlarged, and by August, 1906, they were as large as ever they had been. There was now noted a swelling of the size of a marble in the roof of the mouth, and some weeks later subcutaneous nodules over the right pectoral region. Towards the end of September the breathing became noisy, with spasms of dyspnœa, and the patient died early in October. There was no anæmia in this case and no leucocytosis; the proportion of polynuclear cells was 81 per cent., of mononuclears 18 per cent.

Necropsy.—At the post-mortem examination a large tumour mass was found surrounding the larynx, trachea, and œsophagus, and extending upwards through the base of the skull and forwards into the roof of the mouth. This growth was found to be a round-cell sarcoma, and the nodules in the pectoral region had the same structure. It was impossible to determine the point of origin of the primary growth, or that the glandular enlargement was not from the first sarcomatous in origin, for microscopic examination failed to give evidence of there having been any previous lesion in the glands affected.

In concluding, I wish to express my great indebtedness to my colleagues at the Royal Infirmary for their able assistance in investigating the above cases—to Mr. Paterson, who excised the glands in the various cases; to Professor Teacher for the histological examination of the glands; to Dr. Campbell for the bacteriological examination; and to Dr. McNicol for his study of Cases 4 and 8. Without the aid of all these gentlemen the records of the cases would have been very incomplete.

A Lecture

ON

AMPUTATION FOR DIABETIC GANGRENE.

Delivered at St. Bartholomew's Hospital on Dec. 13th, 1911,

BY C. B. LOCKWOOD, F.R.C.S. ENG.,

SURGEON TO THE HOSPITAL.

GENTLEMEN,—I lecture to-day upon a most dangerous complication of a most dangerous disease—diabetic gangrene.

PRELIMINARY REMARKS.

The word diabetes does not in itself afford much information. It means "the passer through" or syphon, and one of the patients about whom I am going to speak certainly was "a passer through." In these vessels Mr. Grange has put the quantity of urine passed in 24 hours, and it amounts to one and a quarter gallons; sometimes it was at least one and a half gallons.

Glycosuria and its Results.

This urine was of high specific gravity, because it contained a huge quantity of grape-sugar or dextrose. In this large basin Mr. Grange has kindly put the quantity of dextrose which was contained each day in the urine. That basin full of sweet substance has in it 13½ ounces. I cannot help thinking that a human being who is passing out one and a half gallons of urine in a day, even if he drinks over a gallon, as this man did, must be draining his tissues of fluid, and no wonder he is thirsty. And if instead of using the sugar for the nutrition of the tissues it is passing out, those tissues will be starved and weight will be lost. Doubtless the blood and the tissues have in them quantities of sugar. Sugar passing through the vessels is likely to damage them; presently I will tell you about the condition of the arteries. But more than that, the sugar passing along the vessels and into the tissues makes them more susceptible to septic infection. A broth or gelatin culture with sugar in it is an extra good soil to grow bacteria upon.

Lack of Oxygen.

There is one other point which has struck me very much about the patients who have been operated upon for diabetic gangrene—that many of them were exceedingly blue. Here is an admirable book written by Dr. Langdon Brown, entitled "Physiological Principles in Treatment." I observe on almost every page written about diabetes some reference to the "lack of oxygen," to the "deficiency of oxygen," to the "want of oxygen.' This lack of oxygen plays a very profound part in the causation of diabetic gangrene. Presently you see that the want of oxygen is not only general, as may be betokened by the blue lips, the purple face, and the blue extremities, but is also local, for there is a local asphyxia of the tissues which may end in them dying. In diabetic gangrene the peripheral conditions favour the death of the tissues. They are blue, ill-supplied with oxygen, and saturated with sugar.

Calcareous Condition of Arteries.

But in addition the arteries are oftentimes inflamed or calcified and ill-suited for the circulation of the blood.

Here are some calcified arteries from the museum. It might be thought that they are exaggerated specimens of calcified arteries, but one of the patients for whom I performed amputation of the leg for diabetic gangrene had arteries which were so calcified that Mr. H. R. Wadd aptly compared them to a bird's trachea. Another patient with diabetic gangrene had arteries which were so brittle and calcified that they would not tie, and in the end the vessel was secured by passing a piece of silk underneath it and the surrounding tissues, and then tying it with extreme caution. And in these cases of gangrene the calcareous vessels can be seen in an X ray photograph, as in a patient who was in the casualty ward with gangrene of his leg.

Albuminuria.—Neuritis.

Many with diabetes who have reached the stage of gangrene have also albumin in the urine, and in the notes you will frequently find that the urine contained sugar in quantities and also albumin. Albumin may mean little or it may mean much, but it will tell you this: a patient with sugar and with albumin in his urine is of necessity in greater danger than is one with sugar alone. When the urine has renal casts in it the kidneys are gravely and permanently diseased and may not continue to function. Some who are supposed to die from diabetic coma may have died with uræmic poisoning. Lastly, in diabetic gangrene the peripheral nerves are in an unsatisfactory state, probably before the gangrene supervenes. But if the gangrene has supervened the neuritis is intense, and those with diabetic gangrene suffer the most horrible anguish; a very good reason why they should have prompt surgical help.

A Case of Diabetes following Cholangitis.

CASE 1.—As bearing on the causation of diabetes. A patient had an acute septic inflammation of the gall-bladder, which was drained. Then the liver became swollen and tender, and the gall-ducts were probably inflamed. During the course of the cholangitis the pancreas became inflamed. The stools were full of fat and starches, and at the same time there were obvious swelling and tenderness in the region of the pancreas. The patient must have had great tenacity of life, because she recovered from these conditions. There is one point which I will mention now, because it may be of service: it is that her recovery began after she was dosed with urotropine. I think that is a drug which is not only excreted by the kidneys, but also by other glands and by the pancreas. So urotropine was given, and whether by chance or not she certainly began to improve. But then it was discovered that the urine contained sugar in considerable quantities.

Site of Gangrene.

Towards the end of diabetes a time arrives when the tissues which are in the condition that I have described may die. The gangrene most often takes place in the lower extremities. But one of my patients with gangrene of the leg also had patches of gangrene on the back. Another had a patch of gangrene upon the thumb. It is possible that so-called spontaneous gangrene of the penis and scrotum is allied to diabetic gangrene. You may not have heard of spontaneous gangrene of the penis and scrotum, but every now and then a patient is brought into the surgery whose penis and scrotum have become black and gangrenous, without obvious cause.

AMPUTATIONS.

Amputations for diabetic gangrene are not very common. But out of 54 major amputations—interscapulo-thoracic,

shoulder, hip, thigh, leg—16 were operated upon for gangrene, and of those half were operated upon for diabetic gangrene. The mortality in these eight was very high indeed. Five had amputation performed at the junction of the upper and middle third of the leg for diabetic gangrene, and only one of them is known to have survived. It is possible that another survived, but it is not in my notes; and we are safe in assuming that four out of five succumbed. The patient who did not die had not got diseased arteries. The urine contained 4 per cent. of sugar at times and a moderate quantity of albumin.

Three patients had amputation performed through the thigh for diabetic gangrene. One of these died, but two recovered. The one who died had exceedingly calcareous arteries, a very unfavourable complication.

Causes of Death after Amputation.

Death after amputation is brought about either by septic infection or diabetic coma. The flaps have, not infrequently, sloughed, and the stump has become profoundly septic. Diabetic coma may follow the sepsis or come on by itself. The patient, after smelling of acetone, becomes apathetic, then drowsy, comatose, stertorous, and at last dies. You are familiar with the smell of acetone, for acetone collodion is frequently used. Once familiar with the smell it is easily detected, and is a profoundly unfavourable sign—the precursor of diabetic coma.

Shock.

A patient may have those curious black asphyxiated patches about the foot, and yet they may not become gangrenous. Inky black they may exist for weeks or months, but the onset of sepsis is most serious and dangerous. The sepsis may be brought about by some trivial cause.

CASE 2.—For instance, a lady who had 4 per cent. of sugar in the urine applied strong sulphuric acid to a corn upon the little toe, and that resulted in a small septic wound. From that the diabetic tissues became infected, the infection spread up the leg, and amputation was performed. She died from shock through loss of blood. The femoral artery was held by the fingers, the fingers did not control it properly, and there was considerable loss of blood, from the shock of which she never recovered. Shock is one of the dangers of operations for diabetic gangrene.

Septic Infection.

In another case the onset of diabetic gangrene was due to suppuration beneath a corn. I can recall another in which the diabetic gangrene was caused by a tack which ran into the foot whilst the patient was walking about without shoes or stockings on. When once septic infection has started it spreads with great rapidity. The foot becomes red and œdematous, and the sepsis spreads up the lymphatics and up the tendon sheaths. The last might not be noticed because the tendon sheaths are beneath the deep fascia, so that the inflammation may have spread high without being seen. This has a practical bearing when we have to decide where to amputate. If the seat of election be infected tissues the sepsis continues in the stump, and the patient is in horrible danger of gangrene of the flaps and of acetonæmia and diabetic coma. The infection occasionally spreads by way of the veins, for clots form in them, and these are, of course, infected.

Notes of Case of Amputation.

CASE 3.—Some time ago a patient, aged 65, after having had diabetes for several years, got gangrene of the toes. In addition to the gangrene there were inflammatory œdema of the dorsum of the foot and deep-seated tenderness in the leg. This was suspected to be due to sepsis passing up the deeper tissues, especially the sheaths of the tendons. He was profoundly ill. Owing to septic absorption the pulse was at least 125 and intermitted.

Intermittent pulses are to be studied. We often have patients in the wards whose pulses are beating quickly and intermit, and you will have to be able to form an estimate of what that intermittency means. If the patient has obvious mitral or aortic disease, an intermittent pulse is a serious matter. If a patient has an intermittent pulse which, when a strain is put upon the heart, intermits more, that is serious. But if a patient has a pulse which intermits, and becomes steady when a strain is put upon the heart, clearly that is not important. A patient in the ward the other day had a large cystic adenoma of the thyroid gland; the pulse was rapid and intermittent. It was of importance, in view of such a grave operation, to know what would happen to the heart during the performance of the operation. So she was made to get up and walk about the ward, and we found her heart became steadier. A little boy had acute appendicitis; he was a delicate little creature, and his pulse intermitted. He was sat up in bed, and walked about the room, and then the pulse became steady.

So the intermittent pulse of this old man had to be taken very much into account. He was taking alcohol and continued it. And in addition he was dosed with strophanthus. This is a drug which makes the ventricles of the heart beat more strongly, and, of course, strophanthus has an advantage over another drug which is used for the same purpose—digitalis—that it does not contract the peripheral vessels. It would not be rational medicine to give a person with gangrene of the leg a drug which contracted the peripheral vessels and impeded the peripheral circulation. There was one other point in the preliminary treatment. I have told you what a danger the formation of acetone is. The formation of acetone is preceded by the formation of diacetic acid, and therefore considerable doses of bicarbonate of soda were given, at least half an ounce in the 24 hours.

As soon as possible after this preliminary treatment the patient's thigh was amputated. Why should one who has a foot which is gangrenous and dead keep the limb? It is a source of great danger and the toxins absorbed from it add to the dangers of acetonæmia and diabetic coma. In this case no X ray photographs were taken, but the peripheral arteries were not calcareous. The femoral artery, although thickened and chronically inflamed, was not calcareous. But here comes the application of some of the things that I have told you about. We amputated in the way in which I am now accustomed to amputate. We did not apply a tourniquet, Esmarch's or otherwise, to the thigh. Think of applying a band of that sort to one of those calcareous arteries! No wonder after the use of Esmarch's bandages and bands gangrene recurs in the flaps. But tourniquets, besides crushing these arteries, are very apt to press and injure the vein which runs at the side of the artery. Again an elastic tourniquet, besides asphyxiating the whole limb, causes arterial paralysis. When Esmarch's bandage has been used blood goes on dripping from the muscles and flaps, and much valuable time has to be spent in putting on ligatures, when after all it was better that the patient should be back in bed.

Operation.—For this operation the patient was laid on his back on a table and an incision was made at the lower end of Hunter's canal. The superficial femoral artery and vein were then and there secured. When you think about it, the main arteries in an amputation have to be secured at some time or another, and why the surgeon should not begin by securing the great vessels and be finished with them I am at a loss to imagine. There was one little complication in the ligature of these vessels. The superficial femoral artery and vein were so fastened together by inflammation that I thought it better not to waste time in trying to separate them, but tied them together with ordinary chromicised gut ligature. The next step after securing the great vessels was to leave the patient in the same position, and with a scalpel to cut flaps quietly and slowly, and secure each vessel the moment it bled, as in other operations; then to saw through the bone and put the drainage-tube in, and finish the amputation in the usual manner.

Everyone is prejudiced about his own ideas, so I asked Mr. Richard Gill, who gave the anæsthetic, what he thought about the shock in this case, and Mr. Gill was very emphatically of opinion—perhaps he was kind in saying so—that there was none at all—but certainly there was singularly little shock.

This patient, after the operation, was put back in bed. And observe what a parlous condition he was in. He had a pulse which was very rapid for an old man or for anybody else; he had a very high temperature; he had 4 per cent. of sugar in his urine; so acetonæmia was impending. He had some patches which were very blue in colour on the other foot and on the thumb. Of course, the treatment which he had had before the operation was continued—the bicarbonate of soda, the alcohol, and the strophanthus. But now he had a treatment which

surely must be of great importance in these cases. The moment the operation was over we began the continuous administration of oxygen. He had oxygen to inhale for nearly a fortnight. He liked it very much indeed and was pleased to have it; asked for it, and it obviously did immense good.

Remarkable Effects of Oxygen Inhalation.

Do you remember what I said about Dr. Langdon Brown saying in his book on nearly every page relating to diabetes something about the want of oxygen in the tissues and the need for oxygen? And yet it seems strange to me that at the end of that chapter he does not say, "Therefore you must give these patients as much oxygen as you can get them to take."

The administration of oxygen has a most extraordinary effect. I was about to amputate the breast of a stout female whose face and lips were blue. Although most unfavourable, yet it was not right to leave her to die of carcinoma of the breast, which was on the point of ulceration. So before the operation oxygen was ordered to be ready. During the operation the blood which flowed from the wound was deep purple. Then the oxygen was turned on, and at that moment all the wound became vivid red. The blood became arterial instead of being of the colour of dark treacle. That experience has made a most profound impression on my mind. If the tissues are in a condition such as that in diabetic gangrene, perhaps livid, with those dark patches on the heels and back, surely the more oxygen given to those defective tissues the better. I cannot help associating the recovery of that old man with this supply of oxygen, and I should say that the stump did unusually well; it healed by first intention, and the patient lived for 16 months.

Another Illustrative Case.

I will briefly refer to another case which was treated in the same manner. Many of you might have seen the operation performed.

CASE 4.—The patient was in Paget ward. He was certainly in a parlous state. There was extensive gangrene of the left foot and leg. One gallon of urine was passing out of him every day, and it contained 13½ ounces of sugar. He was not very thirsty, although he sometimes drank a gallon of fluid a day. At the time of the operation the pulse was accelerated to 104, and the temperature had been nearly 102° F. The respirations, too, were accelerated, being 24 before the operation. His thigh was amputated in the same way as the last. The main vessels were tied and the bleeding stopped; he was never moved about on the table; and the moment he returned to the ward the continuous inhalation of oxygen was begun. He was very apathetic and sleepy, and was obviously on the verge of acetone poisoning. The urine contained diacetic acid, so that everything was in readiness for acetonæmia, but he survived and improved. For some inscrutable reason the house surgeon in charge of the case stopped the oxygen; perhaps he thought a hospital which was running into debt had no right to spend money on oxygen. But when the oxygen was stopped the patient became worse and I thought he would die. It was begun again and the patient improved, and slowly mended until we were able to send him out of the hospital. His wound, I thought, did remarkably well. Except for the places where the drainage-tube was put in, it healed by first intention, but the drainage opening shortly closed, and he did exceedingly well for such a class of case.

Site of Amputation.

But observe I amputated through the thigh. And I have told you of five cases in which I amputated through the leg, and three or four of them died. I have not time now to go into the reasons of their deaths. One died from shock and hæmorrhage due to the operation, one died from diabetic coma, and one died probably from sepsis.

The dangers of dying from sepsis seem to me far greater if you amputate through the leg, because you have still to deal there with calcareous vessels, and there may be still some infection of the lymphatics, veins, or tendon sheaths. I have clearly made up my mind now, from my limited experience of diabetic gangrene, that the amputation is better performed through the thigh and in the way I have described to you, and better performed at the earliest possible stage of the disease. Do not wait until the gangrene has spread, until the patient has become septic, and until the chances of prolonging life are vastly diminished.

THE TREATMENT OF PUERPERAL SEPTICÆMIA BY BACTERIAL VACCINES.[1]

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(*From the Inoculation Department, Bacteriological Laboratory, London Hospital—Dr. W. Bulloch.*)

IN the course of a discussion on "vaccine-therapy" held by the Hunterian Society in the spring of 1910 I made a preliminary report on a series of 20 cases of puerperal sepsis which had been investigated in the bacteriological laboratory of the London Hospital. Of these 20 cases 13 had been treated by inoculation. Since then we have continued working on the same lines, with the result that we have now a series of 100 cases which have been investigated, and 56 of these have been treated with vaccines.

The cases in the present series have, with few exceptions, been patients admitted to the puerperal septicæmia ward at the London Hospital. These patients are drawn from the neighbouring districts after confinements in their own homes, often under the most unfavourable sanitary conditions. In many cases they have been attended by a midwife and in others by a private doctor. It will be realised, therefore, that the present series includes only those cases which are looked upon prognostically as of such gravity as to necessitate removal to hospital. It should be added that these cases are all notified under the Act.

As I pointed out in my previous report, the very wide difference in mortality given by different authorities indicates that there is a considerable difference of opinion as to what should be included in the term "puerperal septicæmia." Clinically, a diagnosis of septicæmia rests largely on the temperature, the pulse, or a combination of temperature and pulse. Bacteriologically, a diagnosis of septicæmia may be made on a positive blood culture. If the result of blood culture is negative it does not follow that the case is not a septicæmia. It is well known that a blood culture may be done on one and the same case on several occasions, and be positive one time and negative another time. Further, if several tubes of media be inoculated at the same time some may show growth while others remain sterile. Again, special precautions with regard to media or quantity and dilution of blood may give a positive culture in a case which has been negatived by ordinary routine methods.

I would suggest that the explanation of these facts is that a septicæmia is not in most cases a condition in which multiplication of bacteria takes place to any great extent in the blood stream, but rather a condition in which there is a local bacterial infection around which the tissues have not reacted to form a localising barrier, and, consequently, bacteria are more or less continually being carried away into the general circulation. Here they probably do not survive very long unless they form an embolus or get caught in a thrombus, in which cases pyæmic abscesses may occur. If this is so we have included under the clinical term "puerperal fever" at least two different conditions: (1) a localised bacterial infection in the genital tract which is associated with more or less toxæmia; and (2) a local infection in the genital tract from which bacteria are being carried into the blood stream, continuously or discontinuously. These latter cases constitute the group of true septicæmias, but it must be realised that the two groups merge into one another and clinically cannot always be separated, and this doubtless explains the extraordinary variations of opinion as to the mortality. The determining factors would appear to be the relative balance between the virulence of the infecting agent on the one hand and the resistance of the tissues on the other.

In tabulating the cases which we have investigated and treated an attempt has been made to record those points which are of especial interest without making the tables too full of detail to be easily read. Further, the order in which the cases have been placed has been chosen as far as possible to simplify the deduction of conclusions. The cases are divided into two tables: (1) cases treated by vaccines; and (2) cases untreated by vaccines. In each table the patients

[1] A paper read before the Obstetrical and Gynæcological Section of the Royal Society of Medicine on Feb. 1st, 1912.

who lived are grouped together, as also are those who died. Further, in each of these groups the cases in which there was definite bacteriological evidence of a blood infection are placed first.

I propose now to discuss briefly the results detailed in these tables, and at the same time a few words of explanation will be necessary about some of the headings.

"*Nature of labour.*"—This information is, of course, obtained second-hand, and it will be seen that in many cases, although it is put down as "normal," reference to the column "Other treatment" will show that in reality it was abnormal in so far as there was incomplete delivery of the placenta or membranes.

Out of the 100 cases 25 followed on miscarriage. In only 2 of these was a history obtained of criminal interference. The number of primiparæ, 27—that is, 36 per cent. if we exclude the miscarriages, or 27 per cent. including them—does not appear to be excessive, but in all probability this note is omitted in several more cases.

I regret that I have been unable to obtain more precise details as to examination or interference during the various stages of labour. It would appear, however, from the number of cases in which the third stage was abnormal or incomplete, that the risk of infection in such cases is many times greater than in those where there is interference in the second stage, the reason obviously being that in the third stage there is a wound area exposed, while in the second stage manipulation takes place within the membranes.

"*Day of onset.*"—This is taken as the day on which marked pyrexia was first observed. This is noted in 81 cases. It will be seen that 62 per cent. of the cases occur on the second or third day after delivery. It is also interesting to note that if we take the fatal cases alone the incidence on the second day is as great as that on the third day (11 to 11), while if we take the cases which lived the incidence on the third day is nearly double that on the second day (18 to 10). This suggests that the more virulent the infection the more rapid will be the onset and the more fatal the result.

"*Rigors.*"—It does not appear that any absolute prognostic significance can be attached to the presence or absence of rigors alone. Some of the most virulent and rapidly fatal cases never have a rigor at all, while others may have rigors almost daily for many weeks and eventually recover completely. It has been suggested by Schottmüller that a rigor is indicative of bacteria being thrown into the blood stream, and, further, that the height of temperature is proportionate to the number of bacteria in the blood stream. This is supported by the fact that a single rigor frequently occurs shortly after the operation for clearing out an infected uterus, at which time it is easily conceivable that a few bacteria are shot into the circulation. This is also in accordance with the fact that a blood culture may sometimes show a growth if taken during or soon after a rigor, although previous cultures have remained sterile. It would seem probable, therefore, that the presence of repeated rigors denotes an improperly localised focus of infection, often septic thrombosed veins, which is the basis of a septicæmia.

"*Blood cultures.*"—This has been done in almost every case. 8–10 c.c. of blood is obtained by venipuncture and inoculated into tubes of ordinary glycerine and glucose broth. These are incubated at 37·6° C. for four days before being reported as negative. Some of the more recent cases have been incubated under anaerobic as well as aerobic conditions.

In 96 cases in which the blood has been examined a positive result has been obtained in 39—i.e., 40 per cent. This is clearly an under estimate of the number of true blood infections, as it will be seen that the blood examination has on several occasions been reported negative where pyæmic abscesses afford definite evidence of a blood infection. If it were possible always to take cultures during a rigor or when the temperature was at its highest point, the chances of getting a positive culture would probably be greatly increased. Of the 39 positive results 36 contained streptococci, and of these all but 2 were grown aerobically. Two cases grew staphylococcus aureus and one case grew a Gram-negative coccus which failed to grow in subculture. The two staphylococcus aureus cases were both following abortion, in one instance criminally induced.

"*Uterus cultures.*"—These have been taken by a method similar to one which has been used by Menge and Krönig. This is usually done in conjunction with the operation for removing retained secundines. After the vagina has been thoroughly douched the cervix is drawn down towards the vulva. This tends to straighten any flexion of the body on the cervix. A straight glass tube with a rubber diaphragm at the top is then passed up to the fundus. Having felt that its end is against the fundus it is withdrawn one inch. Knowing, then, that we have that much space to spare we can boldly pierce the rubber membrane with a Pasteur pipette without fear of wounding the wall of the uterus. Material is then sucked into the pipette by means of a rubber teat, and on withdrawing it the tip is sealed in a flame. The material obtained is then examined by films and cultures. On withdrawing the tube the uterus may be cleared out as usual.

As a further safeguard against contamination from the cervix a wider bore tube may first be passed up the cervix for two inches; the rubber capped tube is then passed without touching the cervix at all. It is important that the finger be not introduced before the cultures are taken, as by so doing contaminations may be introduced and also frequently such free hæmorrhage is set up that the specimen obtained contains little more than pure blood.

Cultures were taken from the uterus in 43 cases in this series. In 31 instances streptococci were grown in pure culture. Twice streptococci grew in large numbers, together with a few colonies of coliform bacilli, which were no doubt contaminations from the vagina or cervix. On one occasion staphylococcus albus alone grew, and on one occasion the cultures were noted contaminated. In only 7 cases were the results completely negative, and there is reason to believe that in some instances this was due to faulty technique. It will be seen, therefore, that streptococci occurred in 80 per cent. of the cases examined and in 76 per cent. in pure culture.

It should be remembered that these cases have been investigated entirely with a view to possible specific treatment and not as part of a research into the bacteriology of the genital canal in puerperal fever.

I find that two papers dealing at length with this subject have been read before this section during the last few years. It will therefore be of interest briefly to compare my results with those obtained by the authors of those papers. I refer to a paper by Mr. A. G. R. Foulerton and Dr. W. F. Victor Bonney[2] in 1905 on "The Causation of Puerperal Infections," and one by Dr. A. W. W. Lea and Dr. E. J. Sidebotham[3] in 1909 on "The Bacteria of the Puerperal Uterus." It will be remembered that these workers each employed a different technique and obtained widely divergent results. Foulerton and Bonney used a glass tube with a paraffined wool cap at one end. Within the tube was a copper wire bearing a sterile swab. The tube was passed through the cervical canal, and the paraffined cap pulled off by means of a string. The wire with the swab attached to it was then advanced to the fundus and withdrawn again into the tube. The apparatus was then removed, with the swab inside, and plugged at each end. Lea and Sidebotham used a glass tube which was passed up to the fundus, suction being then applied by means of a syringe. It appears to me that the former technique is good, while the latter could not be expected to give reliable results. Turning to their results, briefly, Foulerton and Bonney found that (1) in 12 cases of normal puerperium examined, 100 per cent. sterile; (2) in 40 cases of severe puerperal infection examined, 80 per cent. had bacteria present; and (3) in these 40 cases streptococci or Gram + diplococci were present in 77·5 per cent. On the other hand, Lea and Sidebotham examined the contents of the uterus in 58 cases of normal puerperium and found bacteria present in 80 per cent. In these 46 cases 120 bacteria were found, an average of 2·8 varieties per case. If we compare this with the 100 per cent. sterile results quoted above it appears to me that imperfect technique is the only possible explanation of the difference. The point is important for this reason. If the uterus normally contains numerous bacteria during the puerperium it is clearly futile to waste time isolating pathogenic from non-pathogenic bacteria for the purpose of making a vaccine to

[2] THE LANCET, Jan. 21st, 1905, p. 162. Trans. Obstet. Soc., Lond., vol. xlvii., p. 11.
[3] Proc. Roy. Soc. Med., Obstet. Section, 1909, vol. ii., p. 127.

treat a severe septicæmia. Our results which I have already quoted show that we can obtain a pure culture from the puerperal uterus in 76 per cent. of infected cases. This appears to me to be strong evidence against the correctness of Lea and Sidebotham's results.

It may sound paradoxical, but every bacteriologist will agree that while it is impossible to get a pure primary culture of one organism in 76 per cent. of cases if in reality a mixture is present in the material planted out, imperfect technique is all that is required to enable a mixture of bacteria to grow when in reality only one is present in the material we are intending to examine. I would submit, therefore, that if it is possible to grow a pure culture of one organism from the uterus (which is normally sterile) in 76 per cent. of morbid cases, we have strong evidence that this is really the infecting agent.

Before leaving this section of my paper it is interesting to note that Foulerton and Bonney's 77·5 per cent. of Gram + streptococci and diplococci very closely coincides with our 80 per cent., although they do not appear to have obtained pure cultures in so many cases.

"*Vaccines.*"—Under this heading is indicated whether the case was treated with an autogenous vaccine or whether a "stock" was used—i.e., a vaccine prepared from a culture obtained from another patient. I have wherever possible used an autogenous vaccine. Only where no culture has been obtainable, or where the preparation of an autogenous vaccine is not yet complete, have "stock" vaccines been used. Some cases which have been commenced on a "stock" vaccine, and shown no improvement after several injections, have then been given an autogenous vaccine and have at once responded by a marked fall in temperature and general improvement. I consider, therefore, that an endeavour should be made to obtain an autogenous vaccine from the first in all cases and no valuable time be lost in extensive trials of "stock" vaccines.

With regard to the source from which the vaccine should be made, theoretically an organism obtained from the blood stream is more certain to be the offender than one obtained from the uterus, which is, of course, open more to contaminations. Practically, however, there are some very real advantages in the latter source. Firstly, our figures show a negative result in 60 per cent. of blood culture taken, whereas cultures taken from the uterus are found to give negative results in only about 20 per cent. of cases, and even this could doubtless be reduced if these cultures were always taken by or under the direction of one accustomed to the technique. Secondly, a proportion of blood cultures shows no growth until after two or more days have elapsed. Cultures from the uterus, on the other hand, almost invariably show growth within 24 hours if they are going to grow at all. Further, as the tables show, we can get pure cultures fr om the uterus in 76 per cent. of cases examined, so that in this percentage a vaccine can be prepared within 24 hours of taking our cultures. This is seldom possible from blood cultures, as in them it is only very exceptionally possible to make up a vaccine from the primary culture. I would urge, therefore, that if a case is at all serious, and the uterus is being explored, the opportunity of taking cultures at the same time by some reliable method should never be missed as this may afterwards be an irretrievable loss.

"*Other treatment.*"—Under this heading falls operative interference for the removal of secundines, evacuating pus, &c.; also the administration of antistreptococcus serum. This latter has been given in 18 cases, sometimes in conjunction with and sometimes without vaccines. Of these 18 cases, 7 patients lived and 11 died. We have not noted any cases where antistreptococcus serum appeared by itself to have any marked effect in lowering the temperature or improving the general condition. On the other hand, in one case we have seen antistreptococcus serum given in 20 c.c. doses and repeated for eight doses, and after almost every dose the temperature rapidly ran up from two to three degrees Fahrenheit. This patient eventually recovered after the injections were discontinued. This case very strongly suggested that there was in the serum a distinct toxic element.

"*Results.*"—It is difficult or perhaps even impossible to estimate accurately the benefit derived from any special line of treatment without having for comparison a sufficient number of control cases. These are not at present available.

The present arrangement of the septicæmia ward in this hospital did not exist previously to the commencement of this series of cases, so that it is not possible to obtain a control series from that source.

The 44 cases in this series which have not been treated by vaccines cannot, without reserve, be taken as controls, as they include many mild cases which were not treated because it was considered that they would do well without. In cases where an autogenous vaccine had been prepared it was withheld if the temperature was already falling. Further, as was pointed out by the British Medical Association Committee appointed in 1905 to consider the question of puerperal morbidity, an efficient comparison of the statistics from various hospitals is impossible owing to diversity of standards of morbidity. The standard suggested by that committee includes all cases where the temperature reaches 100° F. on any two of the bi-daily readings from the first to the eighth day after delivery.

Whitridge Williams in a series of 92 cases of puerperal infection had a mortality of 15 per cent., but, as he adds, "our favourable results are probably attributed to the fact that many mild cases are included in our series which would have escaped detection except for the bacteriological examination of the lochia of all febrile cases"; and again, "In my practice such a procedure forms a part of the routine examination in every case presenting a rise of temperature above 101° F."

Perhaps some idea of the type of case we have been dealing with can be gathered from the temperatures. It is, of course, not practicable to show the charts of 100 cases. I have therefore grouped them according to their maximum temperatures, taking the maximum as the highest temperatures which have been reached apart from single rigors.

	Degrees Fahrenheit.	Per cent.
Maximum temperatures	107–108	2·6
" "	106–107	6·6
" "	105–106	32·0
" "	104–105	28·0
" "	103–104	22·6
" "	102–103	6·6

Of the cases with a maximum temperature of between 102° and 103° only one was considered sufficiently grave to require vaccine treatment.

By the courtesy of Dr. Arthur Newsholme I have obtained from the Local Government Board the returns of the last few years of the notified cases of puerperal fever for some 250 odd boroughs and urban districts having a total population of about 19½ millions of people. Calculating from these the mortality per million living, I have compared the figures so obtained with the death-rate from puerperal septic diseases per million living for the whole of England and Wales, obtained from the report of the Registrar-General. From this I find that the mortality of notified cases varies between 57 and 62 per cent. (see Table III.).

TABLE III.

Year.	Boroughs and urban districts.	Population (1901).	Cases of puerperal fever notified.	Cases notified per million living (1901).	Deaths from puerperal septic diseases per million living. England & Wales.	Per-centage mortality amongst notified cases.
1906	258	19,437,867	1467	75·0	47	62·6
1907	257	19,432,397	1394	71·7	41	57·0
1908	259	19,458,754	1323	67·9	39	57·4
1909	258	19,432,190	1357	69·0	40	57·9
1910	253	19,532,548	1340	68·0	—	—

These figures coincide very closely with those published by Dr. Amand Routh in his presidential address to this section last October.[4] Taking the notified cases of puerperal fever and the deaths from puerperal septic diseases in the Administrative County of London during the years 1906–1910 he arrives at the death-rate of 58·7 per cent. In the same

[4] THE LANCET, Oct. 14th, 1911, p. 1055.

TABLE I.—*Cases Treated by Vaccines.*

No.	Nature of labour.	Day of onset.	Rigors.	Cultures.		Vaccines.	Other treatment.	Result.	Complications and remarks.
				Blood.	Uterus.				
1	Primipara; normal.	4th	+	Strepto.	Strepto.	Auto. strepto.	Uterus explored; abscess opened.	Lived.	Pyæmic abscesses; osteomyelitis of femur.
2	Normal.	5th	—	,,	Not done.	,,	Uterus cleared out.	,,	—
3	Primipara; instruments.	2nd	+	,,	Strepto.	,,	Antistreptococcus serum.	,,	—
4	,,	—	+	,,	Not done.	,,	—	,,	—
5	Born before doctor's arrival.	3rd	+	,,	Strepto.	,,	Uterus cleared out; abscesses drained.	,,	Pyæmic abscesses contained pure streptococcus; infarcts in lungs and kidneys.
6	Primipara; normal.	2nd	+	,,	Not done.	Auto. strepto. and coli.	,, ,,	,,	Pyæmic abscesses; coli cystitis.
7	Primipara; post-partum hæm.; retained placenta.	8th	+	,,	Strepto.	Auto. strepto.	Uterus cleared out.	,,	—
8	6 weeks miscarriage.	22nd	+	Strepto. anaerob.	,,	,,	,, ,,	,,	—
9	Primipara; normal.	3rd	+	,,	Not done.	,,	—	,,	Thrombosed veins in legs.
10	Incomplete miscarriage.	—	—	Staph. aur.	,,	Staph. aureus.	Uterus cleared out.	,,	—
11	Retained secundines.	3rd	+	Negative.	,,	Auto. strepto.	Abscesses drained.	,,	Pyæmic abscesses in back, calf, and wrist-joint containing pure streptococcus.
12	Normal.	6th	+	,,	,,	,,	Abscesses drained; knee aspirated.	,,	Vaccine from knee-joint culture; pyæmic knee-joint; parametritic abscess; embolus of retinal artery.
13	Normal; 7½ months.	3rd	+	Not done.	,,	Stock strepto.	Abscesses drained.	,,	Pyæmic abscesses and pulmonary infarcts.
14	Normal.	7th	–	Negative.	Strepto.	Auto. strepto.	Uterus cleared out.	,,	Pleurisy and ? pericarditis.
15	Placenta prævia.	3rd	+	,,	Strepto. and coli.	,,	,, ,,	,,	—
16	2 months miscarriage.	—	+	,,	,,	,,	,, ,,	,,	—
17	Normal.	2nd	+	,,	Strepto.	,,	Uterus explored; laparotomy.	,,	Encysted pus in pelvis.
18	Primipara; normal.	3rd	+	,,	,,	,,	Uterus cleared out.	,,	—
19	Born before doctor's arrival.	3rd	+	,,	,,	,,	,, ,,	,,	—
20	Premature rupture of membranes.	3rd	+	,,	,,	,,	Antistreptococcus serum.	,,	—
21	Primipara; normal.	3rd	–	,,	,,	,,	Uterus cleared out.	,,	—
22	Normal.	—	–	,,	,,	,,	—	,,	Parametritis.
23	Primipara; instruments.	5th	–	Not done.	Not done.	,,	—	,,	Parametritic abscess discharging into bladder.
24	,,	—	+	Negative.	Strepto.	,,	Uterus explored.	,,	—
25	Instruments.	—	+	,,	Not done.	Stock strepto.	—	,,	—
26	3 months miscarriage.	5th	+	,,	,,	,,	—	,,	—
27	Normal.	2nd	+	,,	,,	,,	—	,,	—
28	Primipara; instruments.	3rd	–	,,	,,	,,	Antistreptococcus serum.	,,	—
29	Primipara; normal.	5th	+	,,	,,	,,	—	,,	—
30	6 weeks miscarriage.	—	+	,,	Negative.	,,	Uterus cleared out.	,,	—
31	Normal.	2nd	+	,,	Not done.	,,	,, ,,	,,	—
32	Incomplete miscarriage.	—	–	,,	,,	,,	Laparotomy.	,,	General peritonitis.
33	Normal.	2nd	–	,,	,,	,,	—	,,	—
34	Primipara; normal.	3rd	+	,,	Strepto.	,,	Uterus cleared out.	,,	—
35	Placenta prævia.	2nd	–	,,	Not done.	,,	—	,,	Venous thrombosis in leg.
36	Retained placenta.	3rd	+	,,	Strepto.	,,	Uterus cleared out; abscess opened.	,,	Abscess in abdominal wall; cultures streptococcus and staphylococcus.
37	V.-para; normal.	2nd	+	,,	Not done.		Uterus cleared out.	,,	Temperature fell 12 hours after vaccine; 3 days after uterus was cleared out.
38	IV.-para; retained placenta.	6th	+	,,	,,	,,	—	,,	—
39	Excessive bleeding.	4th	+	Strepto.	Strepto.	Auto. strepto.	Knee joint and abscesses drained.	Died.	P.M.—Pyæmia; endocarditis; venous thrombosis.
40	Normal; seventh month.	2nd	+	,,	,,	,,	Antistreptococcus serum.	,,	One dose stock vaccine; 15 doses antistreptococcus serum. P.M.—Ulcerative endocarditis.
41	3 months miscarriage.	3rd	+	,,	Not done.	,,	Uterus explored; joints drained.	,,	P.M.—Pyæmia.
42	Multip.; normal.	5th	+	,,	Negative.	Stock strepto.	Uterus cleared out.	,,	Died 36 hours after admission. One dose stock vaccine. P.M.—Pus in both knees and one elbow. Purulent endometritis.
43	Ante-partum prolapse.	3rd	—	,,	Not done.	Auto. strepto.	Peritoneal cavity drained.	,,	General peritonitis; empyema.
44	Dead hydrocephalus; 3 days labour.	4th	+	,,	,,	,,	—	,,	Died 48 hours after vaccines commenced. P.M.—Septic thrombosis of uterine vein; pyosalpinx; peritonitis.
45	Primipara; normal.	3rd	+	,,	Negative.	,,	Uterus explored. *Nil* found.	,,	Purulent thrombosis of iliac veins, uterine veins, and vena cava up to level of renal veins.
46	,, ,,	3rd	+	,,	Strepto.	Stock strepto.	Antistreptococcus serum.	,,	Died 24 hours after admission. One dose stock vaccine.
47	Primipara; instruments.	3rd	+	,,	Not done.	,,	,,	,,	Died 24 hours after admission. One dose stock vaccine. Septic thrombosed varicose veins.
48	Incomplete miscarriage.	—	–	,,	,,	,,	Uterus cleared out; laparotomy; antistreptococcus serum.	,,	Pelvic peritonitis; cultures streptococcus.
49	,,	—	–	,,	Strepto.	Auto. strepto.	Uterus cleared out.	,,	P.M.—Cerebral abscess.
50	Primipara; post-partum hæmorrhage.	3rd	–	,,	,,	Stock strepto.	,, ,,	,,	Died 24 hours after admission. One dose stock vaccine.
51	III.-para; adherent placenta.	2nd	–	,,	,,	Auto. strepto.	Placenta removed.	,,	No post mortem. Blood culture 7 days after onset.
52	V.-para; 18 hours labour.	3rd	+	,,	,,	,,	Uterus cleared out.	,,	Temperature normal for 1 week. Patient up 2 days. Death from (?) heart failure or detached thrombus. No post mortem.
53	2 months abortion.	7th	+	Negative	Not done.	Stock strepto.	,, ,,	,,	One dose stock vaccine. P.M.—Ulcerative endocarditis. Infarcts in spleen and kidneys. Hypopyon.
54	Primipara; instruments.	4th	–	,,	,,	,,	Peritoneum drained by vagina.	,,	Died 48 hours after admission. One dose stock vaccine. No post mortem.
55	Primipara; instruments.	9th	+	,,	Strepto.	Auto. strepto.	Uterus cleared out.	,,	P.M.—Purulent endometritis.
56	Normal.	3rd	+	,,	Not done.	Stock strepto.	,, ,,	,,	P.M.—Empyema.

TABLE II.—*Cases Untreated by Vaccines.*

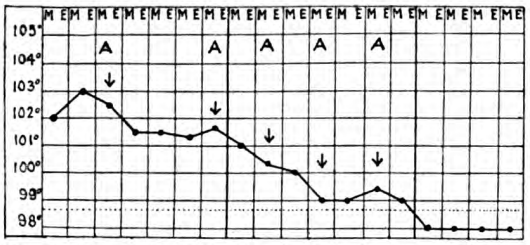
No.	Nature of labour.	Day of onset.	Rigors.	Cultures.		Vaccines.	Other treatment.	Result.	Complications and remarks.
				Blood.	Uterus.				
57	Normal.	4th	+	Strepto.	Not done	*Nil.*	Uterus explored; antistrept. serum.	Lived.	—
58	Primipara; instruments.	3rd	+	? Gonococcus.	,,	,,	Uterus explored.	,,	Pneumonia; blood-culture, Gram-diplococcus, failed to grow in subculture.
59	Primipara; ruptured perineum.	3rd	–	Negative.	Strepto.	,,	Uterus cleared out.	,,	Temperature fell rapidly after clearing out uterus.
60	Three months miscarriage.	—	–	Not done.	,,	,,	,, ,,	,,	,, ,, ,,
61	Two months miscarriage.	3rd	–	Negative.	Negative.	,,	,, ,,	,,	,, ,, ,,
62	Normal.	7th	–	Not done.	Strepto.	,,	,, ,,	,,	,, ,, ,,
63	Post-partum hæmorrhage.	2nd	–	Negative.	Not done.	,,	,, ,,	,,	Mild case; retained placenta.
64	Normal.	7th	–	,,	,,	,,	,, ,,	,,	Abscess in thigh at site of ergot injection.
65	Four months miscarriage.	4th	+	,,	,,	,,	Abscess drained.	,,	Abscess at side of sacrum.
66	Three months miscarriage.	18th	+	,,	Negative.	,,	Uterus cleared out.	,,	Temperature fell rapidly.
67	Normal.	2nd	+	,,	Strepto.	,,	,, ,,	,,	,, ,, ,,
68	,,	3rd	–	,,	Contaminated.	,,	—	,,	—
69	Two months miscarriage.	4th	+	,,	Not done.	,,	—	,,	Thrombosed veins in leg.
70	Normal.	3rd	–	,,	,,	,,	Credé ointment.	,,	—
71	Incomplete miscarriage.	—	–	,,	Staph. alb.	,,	Uterus cleared out.	,,	Temperature fell rapidly.
72	Instruments.	2nd	–	,,	Not done.	,,	—	,,	—
73	Primipara; normal.	7th	–	,,	,,	,,	Antistreptococcus serum.	,,	Laceration of cervix; mild case.
74	Normal.	3rd	+	,,	,,	,,	Uterus cleared out; antistrept. serum.	,,	Mild case.
75	,,	8th	+	,,	,,	,,	Antistreptococcus serum.	,,	Laceration of cervix; mild case.
76	Criminal abortion.	—	+	,,	,,	,,	—	,,	Mild case.
77	Normal.	1st	+	Strepto.	,,	,,	Uterus cleared out.	Died.	P.M.—Abscess in broad ligament; peritonitis.
78	,,	4th	–	,,	,,	,,	—	,,	P.M.—Thrombosis left internal and common iliac veins.
79	Primipara; normal.	2nd	–	,,	,,	,,	—	,,	Septic broncho-pneumonia.
80	Incomplete miscarriage.	2nd	+	,,	,,	,,	Uterus cleared out.	,,	P.M.—Endocarditis; peritonitis; septic embolus in lung.
81	Three months miscarriage.	2nd	+	,,	,,	,,	—	,,	P.M.—Pelvic cellulitis; thrombosis of ovarian veins; pyæmic abscesses in lungs.
82	Instruments.	2nd	–	,,	,,	,,	—	,,	P.M.—Peritonitis.
83	Born before doctor's arrival.	—	–	,,	,,	,,	—	,,	P.M.—Osteomyelitis of pubic bones.
84	Incomplete miscarriage.	2nd	–	,,	,,	,,	Antistreptococcus serum.	,,	P.M.—Sloughing endometritis; peritonitis.
85	Primipara; instruments.	4th	+	,,	Strepto.	,,	Uterus cleared out.	,,	No post-mortem examination.
86	Multipara.	2nd	–	,,	Not done.	,,	Peritoneal cavity drained.	,,	Pure streptococci in peritoneal pus. Died 20 hours after admission; second day after onset.
87	Incomplete miscarriage.	3rd	+	,,	,,	,,	Uterus cleared out.	,,	P.M.—Recent endocarditis.
88	Primipara; normal.	6th	+	,,	,,	,,	—	,,	No post-mortem examination.
89	Criminal abortion.	5th	+	Staph. aur.	,,	,,	—	,,	P.M.—Pyæmic abscesses in lungs and myocardium.
90	Retained secundines.	17th	+	Negative.	,,	,,	Uterus cleared out.	,,	P.M.—Purulent parametritis; thrombosis of internal iliac veins.
91	Normal.	2nd	+	,,	Negative.	,,	Uterus cleared out; antistrept. serum.	,,	P.M.—Purulent endometritis; salpingitis; abscess in left ovary.
92	Instruments.	2nd	+	,,	Strepto.	,,	Uterus cleared out.	,,	Died 24 hours after admission.
93	Retained secundines.	—	+	,,	,,	,,	,, ,,	,,	Pericarditis.
94	Primipara; instruments.	2nd	+	,,	Not done.	,,	—	,,	Almost moribund on admission. P.M.—Thrombosis of uterine and ovarian veins.
95	Post-partum hæmorrhage; retained placenta.	2nd	–	,,	,,	,,	Uterus explored; nothing found.	,,	P.M.—Septicæmia; pyæmic abscesses in kidneys.
96	Four months miscarriage.	3rd	+	,,	Cocci seen, *nil* grew.	,,	Uterus cleared out.	,,	Numerous rigors for nine days before death.
97	Primipara; normal.	3rd	–	,,	Strepto.	,,	Antistreptococcus serum.	,,	General peritonitis and empyema.
98	Six weeks miscarriage.	20th	+	,,	Not done.	,,	Uterus explored; antistrepto. serum.	,,	Numerous rigors.
99	Four months miscarriage.	—	+	,,	Negative.	,,	Uterus cleared out; abscesses drained.	,,	Parametritic abscess.
100	Eight months stillborn.	8th	+	,,	Not done.	,,	Uterus cleared out.	,,	Cystitis; numerous rigors.

paper Dr. Routh gives another table showing that for the first six months of 1911 there were 145 cases notified in the Administrative County of London, having a death-rate of 46·9 per cent. It is interesting to note that in the same period there were in the London Hospital 28 cases notified (and therefore included in Dr. Routh's figures), having a death-rate of 25 per cent.

The mortality shown in Table III. appears to coincide fairly accurately with the mortality amongst the untreated cases in the series we are considering, namely, 55 per cent., if we remember that amongst these are included an excess of the milder cases which reduce the mortality. I desire, however, without placing too much importance on these figures, to put our results on record and to indicate briefly what appear to me to be justifiable conclusions.

Of the 56 cases treated 38 lived while 18 died, giving a mortality of 32 per cent. Of the 44 cases untreated 20 lived while 24 died, giving a mortality of 55 per cent. As I have already stated, these are not strictly comparable cases, as those untreated include on the one hand a few of the severest cases where death occurred before any specific treatment could be commenced, and on the other hand many comparatively mild cases. The bias, however, is rather towards lowering the mortality amongst the uninoculated owing to the excess of the mild cases. More valuable evidence can, however, be obtained if we consider those cases only in which there was definite bacteriological evidence of a blood infection. By this I mean either a positive blood culture or pyæmic abscesses from which a streptococcus was obtained in pure culture. Amongst those treated there were 28 such cases, Nos. 1–13 and 39–53. No. 52 did well for a time and had a normal temperature for a week. She was then allowed up. On the second day of getting up she was suddenly taken ill and she died in half an hour from heart failure. I omit this case therefore from my figures. Of the other 27 cases 13 lived (1–13) and 14 died (39–51 and 53), giving a mortality of 52 per cent. It should be noted that amongst these 27 cases counted as treated are included 6 which only received a single dose of a vaccine within 24 hours of death.

Turning now to the similar series of untreated cases, we have 16 examples—Nos. 57, 58, 77–89, 95. Of these, 2 lived (57, 58) and 14 died (77–89, 95), giving a mortality of 87·5 per cent. Further, if we confine ourselves to streptococcal cases we have 12 out of 13 cases untreated dying—mortality, 92 per cent. It would appear, therefore, that treatment by inoculation with vaccines in this series of cases has reduced the mortality by 30–40 per cent. How far this will be borne out in larger series of cases will be seen in the future, but



Temperature chart of Case 15, showing the mean of six 4-hourly temperatures and spacing of injections of vaccine. (A A mark injections of vaccine.)

these figures suggest that the benefit is sufficient to justify a continued and more extended trial of the treatment.

The length of time occupied in the treatment of these cases is a question which doubtless will be inquired about.

Roughly speaking, it appears from our series that the cases may be divided into three groups:—

1. Those which respond at once to an inoculation of a vaccine, the temperature falling to normal within 48 hours. Case 3 is a good example of this. Previously to inoculation there were streptococci in the blood stream and the temperature had varied between 101° and 104° F. for four days. Following on the first inoculation the temperature fell; within 24 hours the maximum was 102°, and in 48 hours it was normal. Recovery was uninterrupted.

2. They may respond to each of a series of injections, the average of the six 4-hourly temperatures falling a degree or so. Case 15, a chart of which is given, shows this well.

3. The temperature may steady until the daily maximum is not above 102°. Further injections fail to reduce this. In these cases there is probably a local collection of pus which must be found and drained; the temperature will then quickly fall to normal. No. 12 illustrates this well. Previously to inoculation the patient had 17 rigors in 16 days; the daily temperatures varied between 100°–106°. After the first injection the rigors ceased entirely, and the temperature subsided until the daily maximum was 102°. It remained thus for some three weeks, further injections having no influence. An abscess then pointed in the buttock. Immediately on opening and draining it the temperature fell to normal and did not rise again.

Conclusions.

1. The mortality amongst those cases of puerperal septicæmia in which there is definite bacteriological evidence of bacteria in the blood stream is from 85 to 95 per cent.

2. This mortality may by inoculation with autogenous vaccines be reduced to about 55 per cent.

3. The mortality amongst notified cases of puerperal fever is about 60 per cent.

4. This mortality may by inoculation with appropriate vaccines be reduced to about 30 per cent.

5. In cases of puerperal sepsis, if it is decided to explore the uterine cavity the opportunity should not be lost of obtaining a culture at the same time.

6. In the treatment of puerperal sepsis "stock" vaccines give inferior results, and should only be used when an autogenous vaccine cannot be obtained.

I desire, in conclusion, to express my thanks to Dr. Russell Andrews, under whose care the majority of the cases have been; also to some other members of the staff of the London Hospital for permission to make use of cases under their care. Further, my thanks are due to Dr. W. Bulloch, in whose laboratory I have carried out this work.

York-street, W.

THE FINSBURY MEDICAL SOCIETY AND THE SHOREDITCH AND FINSBURY TUBERCULOSIS DISPENSARY.—The members of the Finsbury Medical Society have entered a protest against the formation of this dispensary on personal and general grounds. They consider that as soon as a decision was made to establish a dispensary in the neighbourhood a meeting of the whole of the medical profession of the district should have been called, so that the methods upon which the institution was to be worked could be explained to them and discussed. But they feel that, apart from personal feeling, there are reasons why they should object to give their coöperation to the Shoreditch and Finsbury Dispensary at the present time. When the National Society for the Prevention of Consumption first began to ask for public assistance in promoting tuberculosis dispensaries there was no National Insurance Act and no compulsory notification of phthisis. It is clearly stated in the Insurance Act that some such scheme as a tuberculosis dispensary should be established, and they point out that directly an insured person or any of his dependants is certified to be tuberculous, he can no longer claim "medical benefit," and is at once transferred to "sanatorium benefit," when the Government in return for contributions which have been paid has undertaken to provide treatment. If the Commissioners decide to recognise the existing tuberculosis dispensaries and finance them it is probable that the medical officers will be called upon to give expert opinion as to whether a compulsorily certified case is a suitable one for treatment in a sanatorium. The medical officer of the dispensary may feel it his duty to examine all contacts, and so draw numerous young people not yet insurable into the meshes of the dispensary for treatment. The question to be answered is, Under whose control shall the management of these dispensaries be:—(1) outside voluntary agency; (2) municipal control; or (3) local medical practitioners? The members of the Finsbury Medical Society came to the conclusion that the local practitioners should staff the dispensaries themselves, with the assistance of a resident medical officer. "It is time," they add, "that the idea that a general practitioner has forgotten all the medicine he ever learned was exploded."

THE VACCINE TREATMENT OF SIMPLE GOITRE.*

BY ROBERT McCARRISON, M.D. R.U.I., M.R.C.P LOND.,
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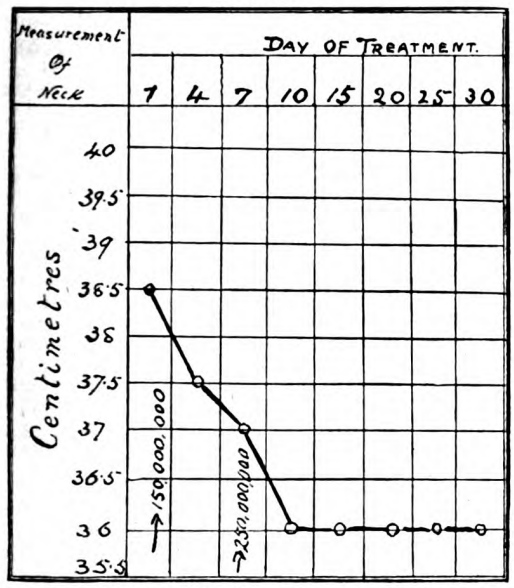
HAVING shown in the course of my researches on the etiology of endemic goitre that the infecting agent of this disease exists in the intestinal tract, and that a plentiful amœbic infection was present in this situation in the vast

CHART 1.



Showing measurements of neck at various stages of treatment, also doses and times of administration of vaccine.

majority of all cases of goitre in Gilgit,† [1 2 3] I have been engaged in endeavouring to cultivate amœbæ from the fæces of sufferers from this disease. During the course of this work I was struck with the constant character of the bacillary growths which appeared in the medium I employed. This medium was that recommended by Musgrave [4] for the cultivation of amœbæ and has the following composition: Beef extract 0·5 gramme, sodium chloride 0·5 gramme, agar

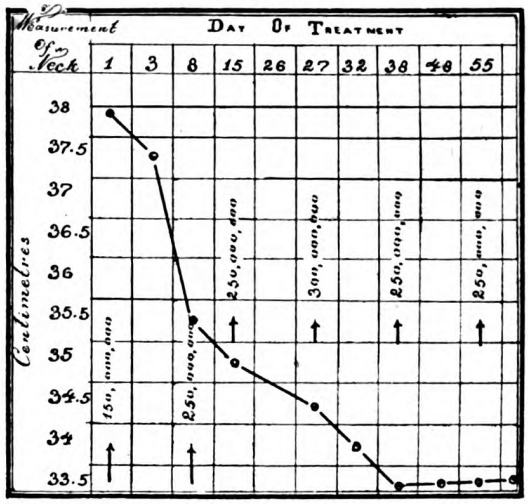
FIG. 1. FIG. 2.

Case 5. Diminution in circumference of neck = 2·5 centimetres.

20 grammes, tap water 1000 c.c., and is of an alkalinity of minus 1. It occurred to me to prepare a vaccine from such bacteria as grew on this medium and to employ it, as an experimental procedure, in the treatment of recent cases of goitre. At this stage of my investigations no attempt was made to isolate any particular organism. The vaccine employed was, therefore, a composite one and contained organisms capable of growth on an alkaline and feebly nitrogenous medium. This vaccine was administered in selected cases in doses of from 150,000,000 to 350,000,000; the inoculations were made at intervals of from seven to ten days. The results obtained were most striking. The following cases (Nos. 5 and 10) will serve as illustrations.

CASE 5.—Age of patient: 19 years. Occupation: water-carrier. Type of goitre: uniform parenchymatous. Circumferential measurement of neck over the goitre: 38·5 centimetres. Duration of disease: 6 weeks. Treatment: composite vaccine prepared from organisms grown on Musgrave's medium from his own fæces. Number of inoculations: 2. Duration of treatment: 10 days. Result: complete disappearance of the goitre. Final measurement of neck: 36 centimetres. Diminution

CHART 2.

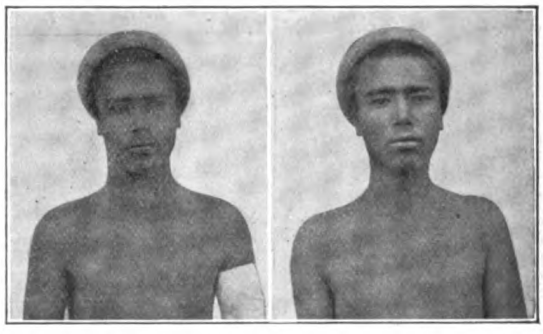


Showing measurements of neck at various stages of treatment, also doses and times of administration of vaccine.

in circumferential measurement of the neck: 2·5 centimetres. The patient carried on his work as regimental water-carrier during the whole course of treatment. (Chart 1, Figs. 1 and 2.)

CASE 10.—Age of patient: 19 years. Occupation: coolie. Type of goitre: parenchymatous, two small adenomata in right lobe and one in isthmus. Circumferential measurement of neck over the goitre: 38 centimetres. Duration of disease: 2 years approximately. Treatment: composite vaccine prepared from organisms grown on Musgrave's medium from his own fæces. Number of inoculations: 6. Duration of treatment: 60 days. Result: disappearance of goitre with the exception of the small adenomata in right lobe and isthmus. Final measurement of neck: 33·5 centimetres. Diminution in circumferential measurement of neck: 4·5 centimetres. The patient carried on his

FIG. 3. FIG. 4.



Case 10. Diminution = 4·5 centimetres.

work as a coolie during the whole course of treatment. (Chart 2, Figs. 3 and 4.)

It was then noted that the bacterial growth on the medium referred to was composed, as a rule, almost wholly of a bacillus which presented the characteristics of the coli group. This bacillus differed, however, from the typical "bacillus coli" in so far that it did not produce indol, and that it decolourised the litmus on a saccharose medium instead of reddening it. I am indebted to Major W. F. Harvey, I.M.S., of the Pasteur Institute of Kasauli, for working out the characteristics of this organism.

A vaccine was prepared from the bacillus, and I employed

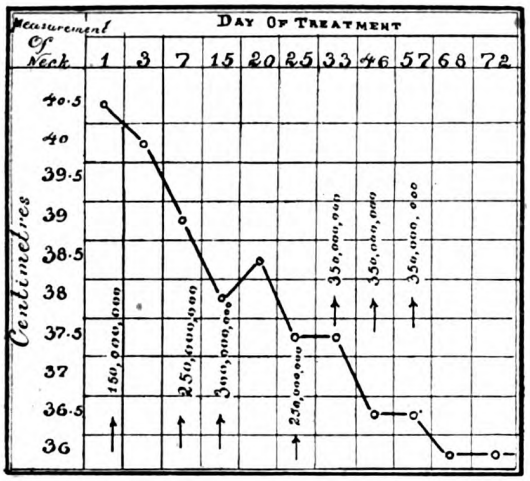
* A paper read before the Medical Section of the Royal Society of Medicine on Jan. 23rd, 1912.

† The superior figures throughout the article relate to the bibliography at the end.

it in 16 selected cases of goitre. The initial dose was in each case 150,000,000. The dose was gradually increased by 50,000,000 till in some cases a maximum dose of 350,000,000 was reached. The inoculations were made at intervals of from seven to ten days. Cases 11 and 12 are amongst the 16 cases treated in this way.

CASE 11.—Age of patient: 28 years. Occupation: priest. Type of goitre: parenchymatous, adenoma about size of a pigeon's egg in right lobe. Circumferential measurement of neck: 40·5 centimetres. Duration of disease: "many years." Treatment: autogenous vaccine made from the coliform organism referred to in text. Number of inoculations: 7. Duration of treatment: 72 days. Result: disappearance of goitre with the exception of the tumour in right lobe. Final measurement of neck: 36 centimetres. Diminution in circumferential measurement of neck: 4·5 centimetres. This man, prior to treatment, acted as a control to the previous case (Case 10); while so acting his goitre increased somewhat in size. (Chart 3, Figs. 5 and 6.)

CHART 3.



Showing measurements of neck at various stages of treatment, also doses and times of administration of vaccine.

CASE 12.—Age of patient: 23 years. Occupation: milkman. Type of goitre: uniform parenchymatous; small nodular mass in isthmus. Circumferential measurement of neck: 42 centimetres. Duration of disease: "about one year." Treatment: vaccine from Case 11. Number of inoculations: 7. Duration of treatment: 56 days. Result: complete disappearance of the goitre with the exception of the small nodular mass in isthmus. Final measurement of neck: 37·5 centimetres. Diminution in circumferential measurement of neck: 4·5 centimetres. The patient followed his usual avocations during the whole course of treatment. (Chart 4, Figs. 7 and 8.)

FIG. 5. FIG. 6.

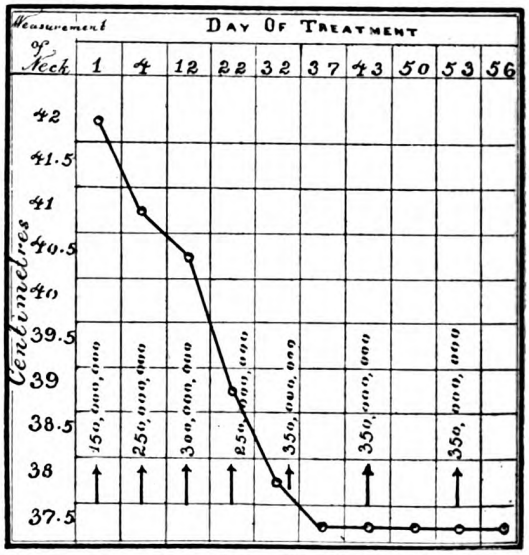
Case 11. Diminution = 4·5 centimetres.

At this stage of my observations I had in hospital four cases of caries of bone. I had obtained from each of these a staphylococcus, the vaccine prepared from which had proved highly efficacious in causing the bone to heal and the sinuses to close. It occurred to me to use this staphylococcic vaccine in the treatment of goitre. I consequently administered it in four cases. The initial dose was in each case 250,000,000; the inoculations were made at intervals of a week to ten days. In two cases the result was practically *nil*, but these were cases—one adenomatous, the other cystic—in which no form of medicinal treatment could have been of use. The other two cases, however, responded to the treatment in a highly satisfactory way. The following (Case 23) is one of these cases.

CASE 23.—Age of patient: 35 years (?). Occupation: policeman. Type of goitre: uniform parenchymatous. Circumferential measurement of neck: 39 centimetres. Duration of disease: "about two years." Treatment: staphylococcic vaccine; the staphylococcus was obtained from a case of caries of the femur. Number of inoculations: 5. Duration of treatment: 60 days. Result: complete disappearance of goitre. Final measurement of neck: 36 centimetres. Diminution in circumferential measurement of neck: 3 centimetres. The patient carried on his work as a policeman during the whole course of treatment. (Chart 5, Figs. 9 and 10).

About this time an Australian pony, recently imported into

CHART 4.



Showing measurements of neck at various stages of treatment, also doses and times of administration of vaccines.

Gilgit, was found to be suffering from goitre. The swelling was right-sided, about the size of a hen's egg, and was of not more than three weeks' standing. I isolated from the fæces of this animal a spore-bearing organism, the characters of which I have recorded in another place.[5] This organism was also commonly met with in cultures made from human fæces. Having satisfied myself, by the inoculation of small quantities of live cultures into animals, that its introduction under the skin gave rise to no ill effects, I employed a

FIG. 7. FIG. 8.

Case 12. Diminution = 4·5 centimetres.

vaccine made from this bacillus at the Pasteur Institute of Kasauli in the treatment of two selected cases of goitre. Here again the result was satisfactory. Case 33 is one of the cases treated in this way.

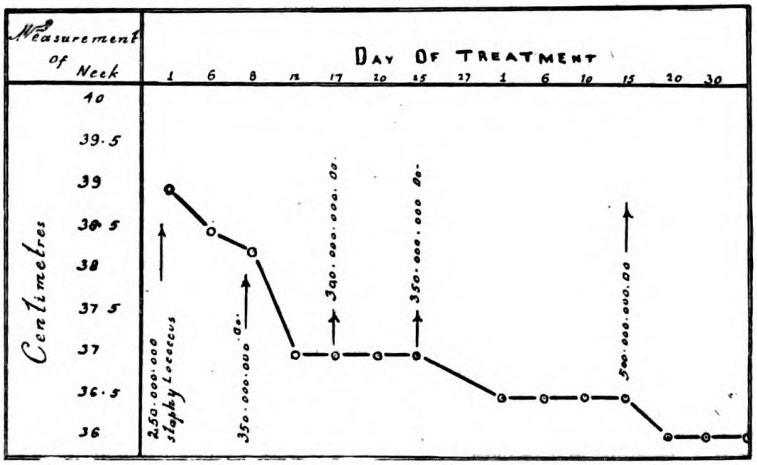
CASE 33.—Age of patient: 23 years. Occupation: cultivator. Type of goitre: parenchymatous; two small tumour masses in right lobe. Circumferential measurement of neck: 41 centimetres. Duration of disease: "over a year." Treatment: vaccine prepared from spore-bearing organism referred to in text. Number of inoculations: 4. Duration of treatment: 40 days. Result: disappearance of goitre with exception of two tumour masses in right lobe. Final measurement of neck: 37·5 centimetres. Diminution in circumference of neck: 3·5 centimetres. The patient carried on his work as a cultivator during the whole course of treatment. (Chart 6, Figs. 11 and 12.)

Forster's dysentery vaccine was then tried in two cases,

but without any beneficial result. One of these subsequently responded to vaccine with the composite vaccine referred to at the beginning of this paper.

I have treated 33 cases of simple goitre by means of vaccine. The cases were selected cases. The results observed may be summarised as follows. Of the four vaccines which were successfully employed the "composite" vaccine appears to be the best, though, as will be seen from the photographs and charts which illustrate this paper, the other three vaccines have given excellent results. I have found an initial dose of 150,000,000 to be most suitable in the case of the composite vaccine and in the case of that prepared from the coliform bacillus referred to. There is usually some rise of temperature a few hours after the inoculation, but this is rarely of any severity if the initial dose does not exceed 150,000,000. Subsequent dosage can be readily regulated by the effect of the treatment on the enlarged thyroid. When the gland begins to soften and the skin over it to become lax the dose which has brought about the result will not need to be increased at subsequent inoculations. I believe, also, that the volume of the vaccine inoculated should be small, and that it is better to introduce 150,000,000 of the bacteria in 5 minims of salt solution than in 1 cubic centimetre of the same. The local reaction does not then appear to be so marked, and when the upper arm is selected as the site of inoculation the patient is usually able to follow his ordinary avocation with no more loss of time than that necessary to attend at the laboratory for the treatment.

CHART 5.



Showing measurements of neck at various stages of treatment, also doses and times of administration of vaccines.

Cases vary considerably as to the number of inoculations which are necessary to effect a cure. As a general rule, it may be said that the older the goitre the larger the number of inoculations which will be needed. I have had several cases in which the thyroid swelling has entirely disappeared after two or three inoculations (Case 5, Figs. 1 and 2). As a rule, however, from four to seven inoculations were found to be necessary.

This treatment is suitable for cases of recent parenchymatous goitre, and its value is confined to such cases. It has little or no effect where the goitre is of long standing—that is to say, when the main part of the swelling is made up of adenomata or of cysts. In some cases a shrinking of the thyroid tissue around adenomatous or cystic masses is observed, but no diminution in the size of these masses has been noted to occur.

All my patients have commented on the feeling of *bien être* to which this treatment gives rise, and so popular had it become—by reason of its simplicity and its freedom of restrictions of diet, &c.—before I left Gilgit, that my last five or six cases asked for it in preference to any other. I have usually employed an autogenous vaccine, though I have obtained excellent results by using the vaccine of one patient for the treatment of another (Case 12, Chart 4, Figs. 7 and 8).

With this treatment—as with the treatment of goitre by thymol, iodine, or the bacillus bulgaricus—the patients, as a rule, lose flesh and the skin becomes of a healthier tint. I am of opinion that the loss of flesh is to be thus explained. The toxic agent of the disease is destroyed or inhibited in its action by the vaccine or by the internal medication; in consequence, the secretion of the hypertrophied organ is for a time in excess of the demand. The excess of secretion, therefore, which continues to be thrown into the blood stream, until such times as the gland regains its normal equilibrium, exerts its influence in increasing the metabolic processes of the body and a loss of subcutaneous fat is the result.

It will, perhaps, be remembered that I have produced goitre experimentally in man by the administration of matter separated from a goitre-producing water by means of a Berkefeld filter.[2,3] I repeated this experiment in five young men whose goitres had been cured by vaccination. In no case did the thyroid gland show the slightest increase in size, though the five individuals consumed the "suspended matter" for a period considerably longer than the subjects of my original experiments. It is possible, therefore, that these men may have been in some measure protected by this vaccination, since having once suffered from goitre they would have been more likely to acquire it than individuals who had not been previously so afflicted.

Now there arises out of this treatment of simple goitre the problem that vaccines prepared from no less than three bacteria—namely, a coliform bacillus, a spore-bearing bacillus, and a staphylococcus—have been employed with success in causing the hypertrophied thyroid to return to its normal size. The solution, I believe, is to be found in an application of Metchnikoff's discovery that certain microbes of our normal intestinal flora are harmful by reason of the poisonous substances which they produce in the intestines. These organisms are of the coli group, certain spore-bearing organisms, and the staphylococcus. By their action on proteid food-stuffs they produce poisons—indols and phenols—which are absorbed by way of the intestinal wall and give rise to fibrotic changes in the liver, kidneys, and arteries. It did not occur to Professor Metchnikoff to note the action of these poisons on the thyroid gland, though he concluded that they exercised a harmful influence on most of the organs of the body.[6]

FIG. 9. FIG. 10.

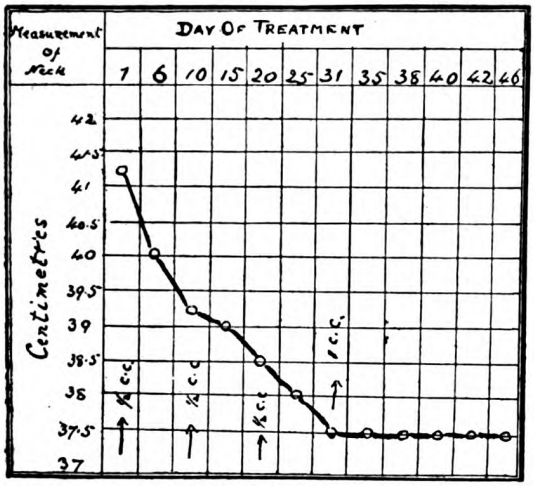
Case 23. Diminution = 3 centimetres.

The vaccines which I have employed were prepared from organisms similar to these normal and harmful inhabitants of the intestines. There is at present no evidence that any one of these possesses a specific influence in the production of goitre. The conclusion, therefore, is suggested that the thyroid gland is called upon to combat several poisons normally present in the human intestine. When to these is superadded the specific virus of goitre an abnormal element is introduced and an extra strain is thrown upon the gland. Unassisted, it undergoes hypertrophy in many cases, but if assisted in any one direction it is capable of performing the additional task which has been imposed upon it and of combating the abnormal virus. On the assumption

that no one of the different vaccines which I have employed contains the specific organism of goitre my explanation of their action in this disease would be that they cause the disappearance of the goitre by relieving the thyroid of part of its normal work, thus enabling it, without continuing in a state of hypertrophy, to destroy the specific toxin of goitre.

The vaccine treatment of goitre which I have described leads us to two important conclusions. In the first place, it confirms the view of the etiology of the disease which I enunciated several years ago—namely, that goitre is due to the presence of a living organism of disease in the intestinal

CHART 6.



Showing measurements of neck at various stages of treatment, also doses and times of administration of vaccines.

tract[1,2]; and secondly, it demonstrates that the thyroid gland is markedly influenced by the nature of the bacterial flora of the intestine, and that one of its chief functions is to protect the body from the many toxic substances which find their way into the blood stream from the alimentary tract. This latter conclusion is substantiated by some experimental work which I have lately published.[5] The experiments show that the thyroid glands of goats undergo marked changes as a result of the continued contamination of their food with cultures of micro-organisms grown from the fæces of goitrous individuals.

Now, apart from the significance which attaches to the action of vaccines on the hypertrophied thyroid when

FIG. 11. FIG. 12.

Case 33. Diminution = 3·5 centimetres.

considered in relation to the etiology of goitre, I desire to emphasise the importance of the antitoxic action of the thyroid mechanism. Assuming the accuracy of the second of my conclusions, we at once appreciate the *raison d'être* of this mechanism in the human economy. We realise that the gland undergoes hypertrophy as the result of a definite stimulus, which is commonly toxic material absorbed from the alimentary tract, and also that the enlargement is not an evidence of derangement of the organ's function, but of its effort to resist some toxic agency. For my own part, I believe that the nervous and other degenerative changes which follow as a result of thyroid incompetency are due to the action of poisonous substances absorbed chiefly from the alimentary canal. These poisons, by reason of the functional imperfection of the thyroid, are allowed free play on the unprotected tissues of the body, and such conditions as tetany, cretinism, and myxœdema are the result.

I claim that my researches on the etiology of goitre have established the importance of the antitoxic action of the thyroid mechanism and I would venture to suggest that future researches upon its diseases should take this action as their fundamental basis.

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THE FATE OF THE APPENDIX AFTER ABSCESS FORMATION.[1]

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WHEN some six years ago I had the honour of opening a discussion before this society on the treatment of appendicitis, and after stating that the aim of the surgeon should be to drain an abscess rather than to look for the appendix, Dr. W. Collier asked what was the condition of the appendix if a second operation was subsequently performed. To this query there were then no satisfactory replies. I said I would, however, try to investigate this as being very important—(1) in order to be able to give advice to patients who had recovered from an attack of appendicitis with abscess formation, where the abscess had been successfully drained, and the cavity healed; and (2) what the advice should be—that is, was one justified in allowing the patients to continue with the appendix still *in situ* without warning them of the possible dangers connected with this state of affairs?

At the time Dr. Collier raised this question I could but quote Sir Frederick Treves, who in the "Text-book of Surgery," vol. ii., p. 628 (1898), says: "As a matter of fact, after an abscess has once formed very little more is heard of the appendix." Since this date I have been able to collect 17 consecutive cases for analysis, which are tabulated in the accompanying table.

I must here apologise for not having all the appendices, too, for inspection, but owing to an accident the jar in which they were stored has been disturbed and most of the labels became displaced. The consequence is, we were unable to identify many of them when going over the appendices, and I think it is wiser to tell the truth than produce a number of these organs which one cannot vouch for. As you will realise, the investigation has taken a long time, lasting over six years, and although the result seems small it has necessitated much searching through notes in hospital.

I have altogether looked over 250 cases, and the first result one sees is the comparatively small number of cases which have had abscesses opened and drained, and gone on to a subsequent operation. This is to be accounted for by: (1) the great majority of the cases one now sees are either (*a*) acute and early or (*b*) quiescent, with operation of appendectomy performed, and, of course, these do not come under discussion in this paper; and (2) the difficulty of persuading hospital patients to return for a second operation after they leave the institution convalescent and feeling no symptoms of their former complaint. The number of private cases was large, and is to be accounted for in this manner. I find the private patient much more inclined to take one's advice than is the hospital patient, who so often thinks one wishes to "experiment" on him.

Before I take up in detail the table of cases I think it will be interesting to mention the literature on this subject. I will at once state that it is, as far as I can find out, scanty in the extreme.

At a discussion raised on the subject at the Royal Medical and Chirurgical Society[2] in 1905 Sir Frederick Treves is reported as saying: "I was at one time disposed to think

[1] A paper read before the Oxford Medical Society on Dec. 8th, 1911.
[2] Transactions of the Royal Medical and Chirurgical Society, vol. lxxxviii., p. 429.

the patient who had had a perityphlitic abscess was, *ipso facto*, cured of his malady, and that although he might have further trouble with the abscess he need fear no other attack of definite appendicitis. Longer experience has shown this assumption is not correct." (*Vide* Nos. 9, 8, and 6.) Sir Douglas Powell at the same discussion says: "If a diseased appendix is left behind there is a great risk of abscess formation and general peritonitis, with 25 per cent. mortality compared with 2 per cent. for simple operation."

Battle, in THE LANCET of July 4th, 1908, p. 79, states it is much more to the point to produce evidence which will carry weight with the unprejudiced observer of the present time, based on clinical and pathological grounds, and quotes seven cases in his paper (Jan. 18th, 1902).

In Kelly's book on appendicitis—a large and elaborate treatise—I can find no mention of the subject, nor in most of the journals or other books I have looked up. However, in the most recent "Operative Surgery" at the Radcliffe Infirmary I find an important paragraph written by G. H. Makins in Burghard's "System of Operative Surgery" (vol. ii., p. 492). He says: "The appendix can rarely be removed simultaneously with incision and drainage of an abscess. The significance of the appendical abscess as an indication for subsequent appendectomy has been much discussed. It has been asserted that the local abscess protects

Table of Analyses of 17 Consecutive Cases—1905 to 1910.

No.	Age.	History of attacks.	Nature of primary operations.	Nature of final operation.	Condition of appendix.	Result.	Remarks.
1	34	No history of previous attack before abscess formation. Operation for abscess 14 days after onset of symptoms.	Abscess formation. Drained. Pus about ℥ iv. evacuated.	Rectus route. Appendix found and removed. Adhesions.	Little destruction of appendix. End bulbous.	Recovery.	Went out 3 weeks after final operation.
2	27	Onset of symptoms 10 days before operation.	Abscess formation. Drained. Pus ℥ i evacuated.	Discharging sinus, rectus route. Appendix found and removed. Firm adhesions to iliac crest.	No destruction of appendix.	,,	Discharged 3 weeks after final operation.
3	21	Large pelvic abscess 14 days after first attack.	Abscess formation. Drained per rectum, Jan., 1906.	Rectus route. Appendix found and removed by abdominal route.	Little destruction of appendix. Strong adhesion to bladder.	,,	—
4	12	No previous attack. Pain for 14 days.	Abscess formation. Drained. Small quantity of pus evacuated.	Rectus route. Appendix found and removed. Some adhesions.	No destruction of appendix.	,,	Discharged 3 weeks after final operation.
5	14	Six days' pain before he was operated on for abscess.	Abscess formation. Drained. Right iliac fossa drained on April 30th. Left iliac fossa drained on May 2nd.	Rectus route. Appendix found and removed. Adherent at tip.	,,	,,	Discharged 4 weeks after final operation.
6	20	In 1902 had serious peritonitis at school. Second attack 5 years after in Switzerland.	Peritonitis and abscess formation. Drained.	Quiescent stage. Appendix found and removed. Adherent to scar of old wound. Ventral hernia operation.	Appendix not in any way destroyed.	,,	Ventral hernia cured by muscle sliding at same time.
7	21	Four days ill.	August 1st, abscess opened and drained. Not much pus.	Rectus route. Appendix found and removed 25 days after draining. Adherent.	No destruction of appendix.	,,	Discharged 24 days after final operation.
8	30	First attack August, 1905. Refused operation. Large pelvic abscess burst per rectum, 1907. Second attack no abscess.	No operation in first two attacks, but abscess burst per rectum in first attack.	1908, Acute attack. Appendix found and removed. Strong adhesions into pelvis.	,,	,,	—
9	14	Three days' history of pain before first operation.	Two attacks of abscess formation, both treated by drainage.	After subacute attack, in quiescent stage, appendix found and removed. A few adhesions.	No real destruction of appendix, which was lying behind cæcum and adherent in pelvis.	,,	Ventral hernia cured by muscle sliding. This case was operated upon twice.
10	14	Abscess one year previously, treated at W——.	? Drainage.	Ventral hernia. Appendix found and removed, pointing retrocæcally.	No destruction of appendix.	,,	Discharged 30 days after final operation. Ventral hernia cured at same time by muscle sliding.
11	9	Attack in 1909 with abscess formation.	Opened and drained.	Appendix found and removed. Adhesion at apex.	*Fæcal concretion* impacted at end.	,,	—
12	9	In 1908 had multiple abdominal abscesses which required two operations.	Opened and drained on two occasions. On third, abscess burst per rectum.	Appendix found and removed. Adherent by strong adhesion at tip only.	No destruction of appendix.	,,	Ventral herniæ cured at same time by muscle sliding.
13	—	Pain for 8 days before abscess operation.	Abscess formation. Opened and drained.	Rectus route. Appendix found and removed. Appendix lying far back in pelvis. Adherent.	No destruction of appendix, which was long and rather chronically inflamed.	,,	Discharged 35 days after final operation. Wound healed slowly.
14	24	Pain for 8 days, two previous attacks.	Abscess opened and drained. Large quantity of pus.	Appendix found and removed. Many adhesions.	No destruction of appendix. Chronic inflammation.	,,	Discharged 24 days after final operation.
15	4½	General peritonitis.	Multiple drainage tubes.	Appendix found and removed.	No destruction of appendix.	,,	Abdominal herniæ cured by muscle sliding.
16	27	—	May, 1910. Abscess formation. Opened and drained.	Nov., 1910. Appendix found and removed. Adherent behind cæcum. Acute kink.	No destruction of appendix. Acute kink with *fæcal concretion*.	,,	—
17	30	—	July. Pelvic abscess. Opened and drained.	Nov. 25th. Appendix found and removed. Adherent.	No destruction of appendix.	,,	—

from future attacks. However, future attacks are more probable than in cases where repeated attacks of a milder type have led to cicatrisation or atrophy of the organ?" Page 517: "Mortality after operation for local abscess, 13·4 per cent." Of cases which recovered and had been followed up there were recurrences in 39·9 per cent., and 70 per cent. of these recurrences were accompanied by fresh suppuration. In 18 cases a subsequent interval operation was performed, and in all the appendix was found capable of giving rise to fresh attacks. All the cases recovered.

Let me now say a few words about the cases I have tabulated, and in so doing I will take the headings.

1. *Age.*—You will note that all the cases are of young people. This is accounted for by the fact that this disease is commoner in the young, and that when an abscess has been opened and drained in an elderly person I have not advised a second interval operation, but have told the patient to await a second attack and then have an immediate operation. In young people, however, I have always advocated a subsequent interval operation, as they are more likely to be in inaccessible places when another attack occurs—Canada, Switzerland, &c.

2. *History of attacks.*—Here is one of the strong reasons in my opinion for an interval operation as soon as convenient. Out of 17 cases there were multiple attacks in Nos. 6, 8, 9, 16, and, if I may mention another case, A B (9), who had an abscess opened and drained in 1902; in 1904, peritonitis and two operations, appendix not removed. In 1911 I heard from the mother that he had had another severe attack in France, and asking if the appendix had been removed and whether I advised its being taken away if it had not. In these cases you will see that sometimes several years elapsed between abscess formation and a fresh attack. (Nos. 6 and 8, and A B.)

3. *Nature of primary operation.*—In all cases drainage only, as now advised by the majority of surgeons. Most of the cases did not come into the surgeon's hands till more than a week after onset of symptoms. Under these circumstances the abscess cavity is usually well defined and the appendix almost impossible to find and remove. When one is able to get at the cases before 48 hours there is rarely any difficulty in doing this, and in the great majority of cases now sent into hospital we see them before the third day of disease (often much earlier), and hence the difference in the nature of the operation.

4. *Final operation.*—Not difficult as a rule. Route: Rectus in all cases on account of the possible difficulties from adhesions; but in the majority of cases these were conspicuous by their smallness. They were marked in Nos. 6, 8, and 16, when I think any other incision would have made the removal extremely difficult, but I do not propose discussing these incisions here. One most remarkable thing to me is the absence of many adhesions in such cases as Nos. 3, 9, and 12. Difficult cases are usually those with numerous subacute attacks.

5. *Condition of appendix.*—(*a*) Found and removed in all cases. (*b*) No obliteration of lumen. (*c*) Fæcal concretions in two cases (Nos. 11 and 16 and ? No. 9). (*d*) No destruction of appendix as a whole. (*e*) Gross anatomical and pathological changes, such as kinks, scarring, and strictures.

6. *Results.*—Recovery in all cases. In fact, the present mortality of appendectomy in the "interval" stage is, if anything, below 2 per cent., as already stated.

7. *Ventral herniæ.*—These are in my experience frequent after the drainage of abscess through the abdominal wall—A B, Nos. 6, 9, 10, 12, and 15. So that one is able to remodel the abdominal wall as well as remove a diseased appendix.

Therefore the general conclusions I am able to state are:—1. The appendix was never destroyed but was damaged. 2. There was decided liability to fresh attacks with such diseased organs in the belly. 3. In the present keen struggle for existence it is wiser to remove such a menace to life. 4. The danger of a second operation is not great, and herniæ may at the same time be cured. So far mortality *nil*.

In conclusion, I would like to state that these 17 cases are in no way picked, but are taken over a number of years out of 250 cases, just as they came under my care, and I am deeply disappointed that I am unable to show you the whole series of the appendices, but that is not my fault but misfortune.

Oxford.

A CASE OF TUBERCULOSIS WITH SPECIAL INVOLVEMENT OF THE HEART.

BY PHILIP BAHR, M.A., M.B., B.C., D.T.M. & H. CAMB.;
AND
GEORGE C. LOW, M.A. ST. AND., M.D. EDIN., C.M.
(*From the London School of Tropical Medicine.*)

AFFECTIONS of the heart wall are comparatively rare in tuberculosis; therefore we offer no excuse for publishing the following interesting details of such a case.

The patient, a Fijian female, about 25 years of age, was admitted to the Colonial Hospital, Suva, Fiji, under the care of Dr. G. W. A. Lynch, chief medical officer, Fiji, on Nov. 28th, 1910, suffering from hæmoptysis. On admission the following notes were made. Temperature irregular, rising from normal to 99° or 100° F. at night, with a morning fall frequently as low as 96°. The patient was very weak, emaciated, and very anæmic, ascites also being present. An examination of the respiratory system gave well-marked signs of tuberculosis at both apices, similar physical signs being found lower in the lungs as well, while at the bases behind a considerable quantity of fluid was present. As regards the circulatory system, the heart was greatly enlarged, the apex beat lying in the fifth space almost at the anterior axillary line, while the borders in the other directions also lay much beyond their normal limits. On auscultation the cardiac sounds were very indistinct, but a systolic murmur could be detected at the base of the organ.

FIG. 1.

Heart showing the outside appearances specially. The nodular tubercular masses are well seen. N, Nodules or tubercular masses.

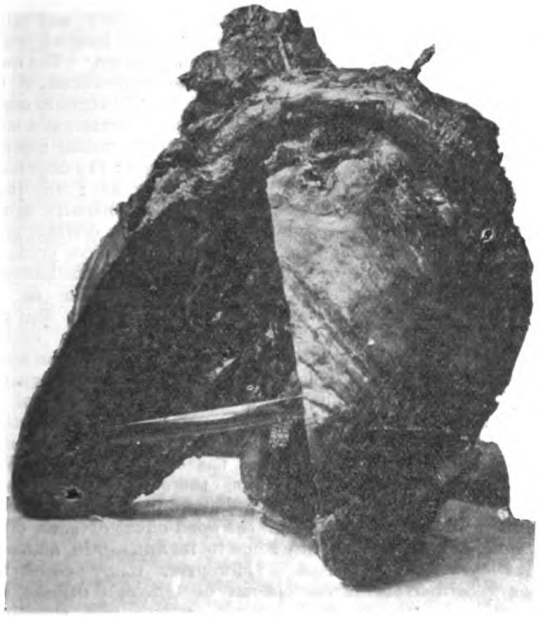
This murmur did not appear to be conducted. The abdomen was prominent, fluid evidently being present. Of the abdominal viscera the spleen appeared to be normal, but the liver was enlarged, feeling hard to the touch, though not nodular, while the lower edge was easily palpable. The urine was acid, of specific gravity 1020, albumin being present in considerable quantity, but no blood or sugar. The patient rapidly went downhill and died from heart failure on Dec. 12th.

At the necropsy performed by Dr. F. N. Smartt next day the following pathological lesions were found. The pericardial sac contained an excess of straw-coloured fluid. There was no pericarditis, the membrane not being thickened, but it was adherent to the surface of the heart at the base.

No tubercles were detected on it. The heart was very large, weighing 37 oz. on removal. It presented a most unusual appearance, the walls both of the auricles and ventricles being studded with nodular masses of the shape and size of small marbles. The organ was not opened at the time of the necropsy, but was preserved and brought to England entire. Both pleural sacs contained a great excess of clear straw-coloured fluid. On the right side many adhesions bound the lung to the chest wall, while numerous miliary tubercles could be seen dotted over the pleural membrane on both sides. On section fairly advanced tubercular lesions, from miliary tubercles up to caseating masses of the size of hazel nuts, were found scattered through both lungs. The apices were both involved. The bases of the organs behind showed considerable œdema.

Of the other viscera, the liver was hard, bile-stained, and typically nutmeg; it weighed 56 oz. The spleen was

FIG. 2.



The cavities of the heart have been more widely opened. The enormously thickened caseating wall of the left ventricle is well seen, and the very small ventricular cavity.

normal. Both kidneys contained a few miliary tubercles, while large caseating areas were found in the mesenteric glands and miliary tubercles were scattered over the peritoneum. Many typical tubercular ulcers were found scattered throughout the small intestine. The brain was not examined.

So far, then, the necropsy notes show that the case was one of tuberculosis of the lungs with a spreading general infection, the unique features being the extraordinary condition of the heart.

Description of the heart.—The heart was brought home from Fiji preserved in formalin and was opened and studied soon after its arrival at the London School of Tropical Medicine. The accompanying illustrations give some idea of the extraordinary lesions found in its walls after section and render a minute written description unnecessary. The left ventricle, perhaps more so than the other chambers of the heart, was greatly diminished in size owing to an enormous, more or less concentric, hypertrophy of the ventricular wall. The myocardium showed an extraordinary appearance, being infiltrated, or rather replaced, by caseous, cheesy masses of different sizes, these having produced the nodular or marble-like lumps seen on the outside of the heart during the necropsy. Fig. 1 shows these well. The wall at the base of the ventricle measured no less than 1¾ in. in thickness, this gradually tapering to ¾ in. at the apex. Practically no normal muscular tissue was left, the tubercular lesions having entirely replaced this. Fig. 2 illustrates these points.

The right ventricle and both auricles were also affected, the cavity of the left auricle especially being surrounded and infiltrated by tubercular masses and thereby greatly obliterated. Remains of pericardium adherent and firmly bound to the auricles and great vessels at the base were easily found, but, as already mentioned, the pericardial membrane was, on the whole, quite free from tubercular changes.

The case furnishes an excellent example of a tubercular myocarditis, and with such advanced caseous masses replacing almost entirely the whole muscular substance of the heart it is extraordinary how life could have been prolonged as long as it was. The caseation and cheese-like masses were quite typical of tubercle, but to make absolutely certain of this sections were cut both of these and the lesions in other parts of the body. Histologically these showed typical tubercular lesions, and by Ziehl Neelsen's method tubercle bacilli were detected in large numbers in the material taken from the heart.

In conclusion, we must state how greatly indebted we are to Dr. Smartt for his kindness in allowing us to publish this case.

Clinical Notes:

MEDICAL, SURGICAL, OBSTETRICAL, AND THERAPEUTICAL.

"PANNICULITIS."

BY WILLIAM BAIN, M.D. DURH., M.R.C.P. LOND.

FOR the past dozen years I have met patients who declined to continue massage on account of the pain it produced. This hyperæsthesia I thought then was purely neurotic. During the last few years I have had a number of these cases. On examination it was found that the hyperæsthesia was generally limited in extent and distributed in patches. The patches occur most frequently on the abdomen, next in order of frequency on the legs, arms, and back, and occasionally on the thorax. I will attempt to describe a patch. If you pick up the skin and subcutaneous tissue over it and roll them between the fingers they feel somewhat firmer and less elastic than the normal structures. The slight infiltration is either in the deepest layers of the corium, or in the subcutaneous tissue, or in both. Judging by tactile sensation my impression is that the inflammatory deposit is in the subcutaneous tissue. The sensitive areas are generally smooth, about 1 or 2 inches in diameter, and very tender on pressure. If the pressure is applied perpendicularly to the surface the tenderness is slight, but if applied from the circumference of the sensitive area it is very marked. A patch is evidently an aggregation of smaller ones. When the patch is disappearing under massage it splits up into several smaller ones, and the thickening therefore becomes uneven. The contour of the smaller patches can be made out, and before they finally disappear they feel like small pin-heads. These sensitive deposits occur chiefly in neurotic patients. Most of the patients are females about the middle period of life, and are inclined to be stout. I will briefly mention the last two cases I saw during the autumn.

Mrs. A, aged 46, gouty, had a hæmorrhage on the left side of the brain 12 years ago. The systolic blood pressure was 150, and the weight 12 st. She was somewhat neurotic. She had a single patch in each upper arm; both were very painful when massaged.

Mrs. B, aged 48, had appendicitis four years ago; no operation on account of the feeble condition of her heart. The heart was slightly dilated and the pulse was weak. The systolic blood pressure was 99, and the weight 14 st. 12 lb. The patient was not in the least neurotic. She had four patches on the abdomen which were very painful on pressure.

It is difficult to give an accurate description of the condition, as there is so little to feel. In the case of Mrs. B the exudations would probably have escaped observation were it not for the pain produced on examining the abdomen.

The pain is evidently produced by the pressure of the inflammatory deposits upon the nerve endings.

As I believe the infiltration occurs in the panniculus adiposus I should be inclined to coin a word and call it "panniculitis." The condition is apparently quite distinct from fibro-myositis, although the two are sometimes associated. In one of my cases the masseuse had to disperse the thickening in the panniculus adiposus before attempting to massage the indurated muscle immediately underneath on account of the tenderness caused by the manipulations.

Dr. W. H. Maxwell Telling,[1] in a most interesting paper entitled "Nodular Fibro-myositis," does not differentiate between panniculitis and induration of the muscles. One of the cases he describes (No. 4) was, I think, an example of panniculitis. Further, in my experience panniculitis occurs more frequently in gouty than in rheumatic subjects.

Regarding treatment, massage is the only effective remedy. I have tried thyroid extract, but I am not satisfied as to its therapeutic utility in this affection.

Harrogate.

A CASE OF COMPLETE LOSS OF MEMORY—? AFTER INFLUENZA.

BY H. S. GASKELL, M.B., CH.B. EDIN.,
HONORARY MEDICAL OFFICER TO THE COBHAM COTTAGE HOSPITAL.

THE following case may, I venture to think, be of interest to readers of THE LANCET.

On Jan. 16th I was called to see a young man, aged 22 years. I found him in bed complaining of feeling seedy and having a cough and sore-throat. He lay very still, muffled up in the clothes, and seemed rather depressed. The duration of the illness had been four days. Up to the 15th he had been attending to his duties as usual. He had never had any illness, and the only medical attention he had ever received had been for measles and chicken-pox in childhood. My examination proved negative. The temperature was normal and the pulse was of low tension and regular in force and frequency. The fauces and uvula were very slightly, if at all, reddened. The tongue was very slightly furred at the back. The action of the heart and lungs appeared to be normal. I prescribed calomel and a mixture containing sulphate of magnesia and nux vomica. On the 18th I saw the patient again, when he was up and dressed. He said he felt better, only a "bit slack." On the 22nd (Monday), although not yet feeling quite up to the mark, he started out to walk to his place of employment, a distance of half a mile. He walked about 200 yards, and remembers addressing some remark to a boy on the road, and after that his mind became an absolute blank. The next thing he remembered was sitting, in a state of complete exhaustion, on a seat at Hampton Court, nine miles away. He asked where he was, and then having just enough money in his pocket, he came back by train, went to bed, slept straight off for 13 hours, and woke up feeling much better. He was kept in bed for five days, although he felt well, and a full diet, with extra milk and eggs, was recommended. He has now resumed his duties and appears to be perfectly well.

The "trance" began approximately at 8.45 A.M. and ended at about 3.45 P.M. The patient stated that on awaking he had a violent headache, and felt very tired and cold. He was so cold that he thought he must have been sitting still for some time. The weather at the time was damp and rainy, but not very cold. He had never been near Hampton Court before. He must have walked along a main road (the Portsmouth road), along which flows a constant stream of motor traffic, and must have passed through the congested district of Kingston-on-Thames, with all its trams and crossings. It would be interesting to hear of any other experiences of the sort.

Cobham, Surrey.

[1] THE LANCET, Jan. 21st, 1911, p. 154.

MEDICAL SICKNESS AND ACCIDENT SOCIETY.—The twenty-ninth annual general meeting of the above society will be held at the meeting-place of the Medical Society of London, 11, Chandos-street, Cavendish-square, W., on May 9th, at 4.30 P.M.

Medical Societies.

ROYAL SOCIETY OF MEDICINE.

MEDICAL SECTION.

The Vaccine Treatment of Goitre.

A MEETING of this section was held on Jan. 23rd, Dr. FREDERICK TAYLOR, the President, being in the chair.

Captain R. MCCARRISON, I.M.S., read a paper entitled, "The Vaccine Treatment of Simple Goitre," which is published in full on p. 357 of this issue of THE LANCET.

Dr. F. PARKES WEBER asked whether thyroid feeding produced diminution of the goitre in the class of cases which Captain McCarrison had treated. One would expect it to do so if the explanation offered were correct.

Dr. FREDERICK LANGMEAD said that anyone who had followed Captain McCarrison's work on goitre and allied conditions could have counted beforehand on hearing something of importance and interest that afternoon. The question which the reader of the paper had introduced, of the relationship between the thyroid gland and toxæmic conditions, was a very broad and intricate one. Amongst a large number of examples of this relationship he would mention three groups of cases in which it occurred: (1) conditions connected with uterine and ovarian function; (2) rheumatoid arthritis; and (3) tetany. It was generally agreed that the thyroid gland enlarged at puberty, during pregnancy, and during the menstrual periods, which could be regarded as minor and abortive pregnancies, and that signs of thyroid incompetence were not uncommon at the menopause. Evidence was accumulating to show that this enlargement was not merely associated with ovarian activity, but was brought about by the presence of an active agent in the blood. This agent in the case of pregnancy was thought to be actually transferred to the blood of the newly-born child, in whom it caused mammary secretion, vaginal hæmorrhage, or prostatic activity. By Halban it was believed to be a product of the chorionic villi. With regard to rheumatoid arthritis, there was considerable evidence to show that it might be produced by absorption of toxins from the bowel, and the good effect of such drugs as guaiacol was ascribed by some to its antiseptic action on intestinal micro-organisms. Moreover, many cases had been recorded of the association of Graves's disease and rheumatoid arthritis, and thyroid extract was sometimes very efficacious in the treatment of the latter. Tetany had been mentioned by Captain McCarrison. Now tetany, as it occurred in young children, was almost invariably preceded by abnormal loose or offensive motions. In adults it complicated dilatation of the stomach and Bouveret and Dévic had isolated a toxin which could produce tetany from the stomach contents in such cases. The speaker himself had recorded other cases of tetany in children, associated with dilatation of the colon, which appeared to be analogous. That there was a relationship between tetany and the thyroid gland was well known. These remarks only conveyed a few ideas bearing on the connexion between thyroidal enlargement and toxæmia—a very big subject.

Mr. JAMES BERRY said that he thought the profession was rapidly coming to the conclusion that all cases of goitre were due to a toxic influence, and that chemical changes in the water were not the cause. Whatever the toxic agent was, it was suspended in the water used for drinking. The treatment of parenchymatous goitre was essentially medical, but there remained other forms to be dealt with by the surgeon. He hoped that vaccines might be another valuable means of medical treatment. He was convinced that no surgeon should operate upon simple parenchymatous goitres until they had been efficiently treated by medical means for a considerable time. It could not be expected that medical treatment would benefit patients suffering from adenomata. He did not agree that hypertrophic and parenchymatous goitre were synonymous terms. The latter was a condition of atrophy rather than of hypertrophy. The vesicles were filled with secretion, but it was stagnant and the cells were inactive. He asked whether any diarrhœa was produced by treatment.

The PRESIDENT said that, as various medical methods were

beneficial in parenchymatous goitre, it was to be expected that there was some underlying factor which was common to them all. Had Captain McCarrison thought whether there was anything in common in the methods of operation of arsenic, iodides, thyroid extract, and vaccines?

Dr. ROBERT HUTCHISON said that although no one could deny Captain McCarrison's therapeutic results he was not so sure about the validity of his explanation of them. He was always rather sceptical about intestinal intoxication and thought that it was too often advanced as an explanation of all sorts of obscure conditions. All they knew of the secretion of the thyroid tended to show that it was a great stimulant of oxidation in the body, and those conditions in which a physiological hypertrophy of the thyroid occurred, such as pregnancy, were perhaps conditions in which there was an increased metabolism and a demand for more thyroid secretion to meet it. This explanation was quite as likely as that there was an increased toxæmia. On the other hand, there was much more reason to regard the liver as the organ concerned with the destruction of poisons passing from the portal system. He would like to know how long the beneficial effects of vaccine lasted in these cases.

Dr. F. G. CROOKSHANK asked what kinds of goitre were prevalent in Gilgit, and whether they showed any tendency to spontaneous cure? Did endemic cretinism occur?

Captain MCCARRISON, in reply, said that no diarrhœa had occurred in his cases. No recurrence had taken place over a period of two years in some of them. He thought that the common factor in the various forms of treatment lay in the truth that they all assisted the thyroid in its antitoxic function. Goitre in the Gilgit Valley was like goitre elsewhere. Cretinism was very common there and goitre occurred in 40 per cent. of the cretins. He had never seen a goitre of any standing disappear spontaneously. 20 per cent. of recruits imported to that district became goitrous and a few got well without treatment when the enlargement was very slight.

SECTION FOR THE STUDY OF DISEASE IN CHILDREN.

Radical Cure of Inguinal Hernia in Children.—Exhibition of Cases and Specimens.

A MEETING of this section was held on Jan. 26th, Dr. G. A. SUTHERLAND, the President, being in the chair.

Mr. DOUGLAS DREW showed a case illustrating the Late Result of Muscle-transplantation for the Relief of Talipes Valgus. The peroneus brevis had been transplanted to the tibialis posticus by passing it across, beneath the tendo Achillis, and over the other tendons at the inner side of the ankle. The operation had been most successful in remedying the valgus, but a slight degree of varus had supervened. Reference was made to other cases in which a similar result had been obtained.

Dr. THEODORE THOMPSON showed two brothers with Hæmophilia. The first shown was a poorly nourished boy 10 years old. The symptoms had been present from infancy, and bruising had been usual on very slight trauma; if he scratched his hand he would bleed for an hour. Sometimes there was slight bleeding from the mouth. For several years he had had attacks of pain and swelling in the knees. Coagulation time five minutes. The second boy was aged 5 years, stout, and well nourished. Extensive bruising of the skin and deeper structures occurred on very slight injury. The only family history of bleeding was on the mother's side.

Dr. ERIC PRITCHARD and Mr. SYDNEY STEPHENSON exhibited a case of Cerebellar Tumour. Five years ago the patient had received a blow on the head. Three years ago he had vomited for no apparent cause, and since then he had been subject to intermittent attacks of headache, vertigo, and sickness, which were preceded by optic prodromata, which usually took the form of fortification spectra with a brilliant range of colours. There was slight incoördination in walking, and Romberg's sign was present. The pupils responded to light, both directly and indirectly. There was hippus, especially in the left eye. When the eyes looked straight at an object, as, for example, the ophthalmoscopic mirror, they jerked slightly up and down. There were also jerking movements on looking inwards, outwards, and upwards, and double papilloedema without inflammatory signs or retinitis.

Dr. R. C. JEWESBURY showed a case of Deformity of the Chest in a girl aged 12 years. The mother first noticed "something wrong" with the shoulder 10 months ago. The child had had a severe fall down 15 stairs when 3½ years old, and was considerably hurt at the time. The upper part of the right side of the chest was much flattened, the first and second ribs were sunken, and bony thickening was felt on these ribs below the clavicle. The pectoral muscles on the right side looked wasted, but there was no loss of power. The radiogram showed a bony outgrowth from the first rib projecting downwards and articulating with a similar growth from the second rib. Cervical ribs, well developed on the right side, were present.

Dr. JEWESBURY also showed three cases of Hemiplegia. The first patient was a boy, aged 4 years, a full-time child. Labour had been prolonged, but no instruments had been used. The child had been weak down the right side from birth, and subject to fits, chiefly affecting the right side, causing twitching, with loss of consciousness. There was marked atrophy of the right side of the face, with weakness of the right face, and right arm and leg, the hand and foot cold, and shortening of the right leg. The patient in the second case was a girl, aged 7 years, with weakness down the left side which had been noticed when she was 7 months old. Fits of epileptic type affecting the right side were first noticed five months ago. The left arm and leg were much wasted, and there was marked loss of power with shortening of both arm and leg. In the third case, that of a boy aged 4 years, loss of use in the right hand and arm had been noticed for about one month. Squint was first noticed six months ago. There was marked loss of power in the right hand and arm; the arm was usually held straight downwards and kept stiff. The patient walked with the feet wide apart and kept the right leg stiff. There was weakness in the right leg. Elbow-jerk and knee-jerk were increased if obtained when muscular spasm was relaxed. The boy was backward and his speech was difficult to understand.

Dr. F. PARKES WEBER showed a case of Congenital Pulmonary Stenosis without Cyanosis in a boy 6 years of age. The heart was somewhat in excess of the normal size, and over the præcordium was heard a harsh systolic murmur, with its maximum intensity over the pulmonary area, to the left of the sternum.

Dr. EDMUND CAUTLEY exhibited a case of Lymphatism in a boy aged 6½ years. The boy was tall for his age. There was an area of dulness over the manubrium sterni extending more to the left than the right, with some general enlargement of the lymphatic glands and spleen; and adenoids and hyperplasia of the circumvallate papillæ. The heart-beat was slow, the pupils were large, the complexion was pale, and the skin was thin, with an excess of subcutaneous fat.

Mr. J. P. LOCKHART MUMMERY showed a case of Shortening of the Left Femur in a boy aged 7½ years. The presentation had been a breech, and at two weeks of age "something wrong" was noticed with the left leg. For two years the boy had worn a high boot, and there did not appear to be any increase in the shortening in that time. The left leg was 1½ inches shorter than the right, and this was practically entirely in the femur. The angle of the femur was slightly reduced on the left side. It was considered that the shortening might be due to an injury to the upper femoral epiphysis at birth.

Dr. CAUTLEY exhibited a specimen of Tuberculous Tumour of the Dura Mater in a child aged 14 months.

Mr. PHILIP TURNER read a paper on the Radical Cure of Inguinal Hernia in Children. The object of the paper was to bring forward a modification of the usual operation for this condition, and by the method the least possible damage was inflicted upon the inguinal canal, and the sac was efficiently removed. The operation which Mr. Turner performed is as follows:—The external oblique aponeurosis is exposed by a short incision above Poupart's ligament, external to the external abdominal ring. A short ½ inch incision is made through the aponeurosis just above the middle of Poupart's ligament; the internal oblique is retracted, and the cord, covered by the cremaster, exposed just below the internal abdominal ring. By blunt dissection the cord and sac are drawn through the small incision in the external oblique; the sac is readily isolated and ligatured at the internal ring and removed, the small incision in the external oblique aponeurosis being closed with a few catgut sutures.

BALNEOLOGICAL AND CLIMATOLOGICAL SECTION.

Bubonic Plague.

A MEETING of this section was held on Jan. 25th at 15, Cavendish-square, W., Dr. G. H. THOMPSON (Buxton), the President, being in the chair. About 20 members and visitors were present.

Dr. F. M. SANDWITH read a paper entitled "Bubonic Plague" (illustrated by the epidiascope).

Dr. P. ABRAHAM remarked that the important rôle which the lower animals played in the spread of disease was one of the most notable advances in knowledge in recent times, and he believed that the number of diseases so spread would be recognised to be greater in the near future. He instanced leprosy, the bacillus of which would probably be found to be identical with the acid-fast bacillus discovered by Mr. Dean some few years ago in rats. Dr. Bayon was now writing upon this subject, and his observations so far tended to prove the truth of this view.

Dr. S. D. CLIPPINGDALE expressed his grateful appreciation of Dr. Sandwith's instructive and interesting paper. Referring to the matter mentioned by the President, the outbreak of plague at Eyam in 1665, he had visited the place, and was interested to learn that the vicar had not only placed a cordon round the affected area, but outside this cordon had placed a tank of water into which money was placed to pay the people who brought food for the cloistered plague-stricken inhabitants, thus showing on the part of the reverend gentleman a commendable knowledge of the requirements of sanitation.

Mr. W. J. MIDELTON (Bournemouth) said he thought he had heard Dr. Sandwith say that pus organisms killed off plague bacilli in the buboes. If so, did not this raise the question that pus organisms might be beneficial in certain circumstances?

Dr. LIEVEN (Aix-la-Chapelle) mentioned how important was the study of zoology for employment in practical bacteriology, as, for instance, the bacillus typhi murium (mouse typhoid) discovered by Löffler, which attacked only certain mice, and it was luckily that species most commonly found to which it has a predilection.

Dr. E. SOLLY (Harrogate) and the PRESIDENT also took part in the discussion.

ROYAL ACADEMY OF MEDICINE IN IRELAND.

SECTION OF PATHOLOGY.

Exhibition of Specimens.

A MEETING of this section was held on Jan. 12th, Dr. T. G. MOORHEAD being in the chair.

Dr. W. D. O'KELLY exhibited specimens from a case of General Tuberculosis with some unusual features. The patient, a female child, aged 11 years, died with every sign before death, confirmed post mortem, of generalised tuberculosis, but Dr. O'Kelly was unable to demonstrate tubercle bacilli in the affected tissues. Numbers of sections were stained by the Ziehl-Neelsen method, especially those from the lungs, spleen, and liver, with a negative result. Even the anti-formin method was unsuccessful. The dairy from which the girl perhaps became infected may be traced, and tubercle bacilli demonstrated in the milk supplied by it.

Dr. W. G. HARVEY gave a short clinical history, with an account of the morbid anatomy of a case of Addison's Disease, and showed specimens and sections. The patient was admitted to the Adelaide Hospital under Dr. H. T. Bewley on May 22nd, 1911, complaining of weakness and vomiting. She had never enjoyed very robust health. In 1897 her foot had been amputated for tuberculous trouble. Subsequently she began to suffer from pain along her spine, which continued with intermissions until February, 1911, when she became noticeably weak. The weakness increased for a couple of months, when the following symptoms supervened: Insomnia, loss of appetite, with palpitation and breathlessness on the slightest exertion. Constant pain in the stomach, uninfluenced by food. Frequent attacks of vomiting, usually in the morning, and often followed by fainting. General languor, mental and bodily, and failure of memory. On admission to hospital she appeared excessively weak. She was moderately well nourished, nor was there apparent anæmia. She lay sunken down in the bed, and answered questions drowsily without turning her face or eyes towards her interrogator. The skin of the face and hands, and more especially that of the axillæ and nipples, were darkly pigmented. Reflexes normal, slight nystagmus. Temperature irregular, generally subnormal, but rising to about 100° F. Pulse weak, tension low, rather rapid (100 per minute). A trace of albumin sometimes present. There was general tenderness over the abdomen. She gradually sank and died on June 16th, 1911. At the post-mortem examination very little abnormality could be made out by the naked eye, save completely caseous suprarenals, the darkly pigmented skin, and a markedly flabby heart. The microscopic examination showed the suprarenals to be entirely caseous, none of their normal structure being discernible. The skin showed dense masses of pigment, mostly situated in the deep layer of rete Malpighii. The heart muscle showed an extreme degree of "fragmentation." In addition to this a miliary tuberculosis was present in the lungs and liver, and tubercles were also present in the ovary. It would seem that this miliary tuberculosis, which had every appearance of being recent, must have come on shortly before the patient's death. The suprarenals, on the other hand, must have been tuberculous for some considerable time, and the history of the case would suggest their infection before the foot was amputated in 1897.

Dr. W. BOXWELL showed a specimen of Carcinoma of the Cardiac End of the Stomach.

Dr. K. E. L. G. GUNN showed two specimens from cases of Disease of the Bladder. He described the first as a typical warty carcinoma of the bladder occurring in a patient from whom a villous growth had been removed some years before, and at the time reported "innocent." Both ureters were widely dilated and thickened, and both kidneys pyonephrotic. The patient from whom the second specimen was taken had been thought to be suffering from enlarged prostate. He was moribund on admission, and the post-mortem examination proved death to be due to general septic peritonitis. In the bladder were found three calculi, one in each of two lateral pockets, giving the organ the shape, and to the touch the sensation, of a large prostate gland. The third calculus had caused a perforating ulcer of the fundus and consequent peritonitis. It was the first case of the kind Mr. Gunn had seen.

SECTION OF STATE MEDICINE.

Sterilisation of the Mentally Unfit.—Causation of Insanity in Ireland.

A MEETING of this section was held on Jan. 19th, Dr. T. P. C. KIRKPATRICK being in the chair.

Mr. M. J. NOLAN read a paper on the Proposed Sterilisation of the Mentally Unfit, in which he advanced the calculation that this line of treatment, when confined to reproductive cases of reproductive ages, only amounted to some 7 per cent. of the asylum population on any given date. He invited the attention of his hearers to the probable bad effects of these operations on the mental condition of these recoverable cases, and also the probable evil effect on the healthy husband or wife of such recovered cases. He dwelt on the fact that the lines of mental inheritance follow no very definite lines, and that the sterilisation of the unfit of one generation was no guarantee for the degree of fitness in the next. He pointed out that this aspect of the question became more involved when the observations made recently at the Epileptic Village Colony at Skelman, U.S.A., were taken into account. There it was noted that the mating of persons nervously unstable with those mentally deficient produced 50 per cent. of normal offspring, so that such paradoxical results would tend to reinforce the sound stocks, and that as the natural law was the survival of the fittest, nature always kept the degenerates in the minority. In conclusion, he held that sterilisation was a premature proposal, and that much could be done by legislation touching education, syphilis, drink, marriage of defective, and pathological research in mental disease, to accomplish the reduction in the number of the insane, so much to be desired by all.

Mr. R. R. LEEPER read a note on the Causation of Insanity in Ireland. He stated that in the course of his experience he found that in cases of insanity who did not recover, and in whom recovery was not complete, a hereditary taint was nearly always present. In Ireland the most potent cause in

the production of insanity was the unreformed Poor-law system. None of the recommendations by the Royal Commission upon the Feeble-minded could be carried out without Poor-law reform. The workhouses of Ireland continued to receive a number of defective and feeble-minded women, who gave birth there to numbers of illegitimate children who were defective, and thus a steady stream of degenerates was yearly poured into the general population. The married habitual pauper's children were reared in workhouse atmospheres, and developed into criminals or degenerates of one kind or another. Medical men did not preach eugenical ideas, and people entered into marriages without due consideration of the matter from a eugenical standpoint. People considered eugenics a very admirable science, but it had no bearing whatsoever upon their own individual lives.

LEEDS AND WEST RIDING MEDICO-CHIRURGICAL SOCIETY.—A special meeting of this society was held on Jan. 19th, Mr. H. Littlewood, the President, being in the chair.—Dr. E. F. Bashford, director of the Imperial Cancer Research, gave an address on "Some Aspects of the Cancer Problem."—There was a clinical demonstration of cases of malignant disease which had remained free from recurrence for seven years or longer after operation.—Dr. A. Hawkyard showed a patient in whom the right half of the tongue, with glands, had been removed by Mr. Lawford Knaggs over nine years ago.—Dr. H. H. Greenwood showed a case of Duct Cancer of the Breast successfully operated upon in 1897, and a second case of scirrhous cancer operated on in 1899. In both cases Halstead's operation was performed.—Dr. A. Christy Wilson showed: (1) A patient who was operated upon by Mr. Pridgin Teale in 1881 for carcinoma of the breast; and (2) a man from whom he had removed a sarcoma of the upper jaw in 1898, the growth being of the size of a Tangerine orange and small-celled. The whole of the left upper jaw, including the orbital plate, left tonsil, pillars of the fauces, &c., was removed.—The President gave a demonstration of patients whom he had operated on for malignant disease at the Leeds Infirmary during the period from 1896 to 1905. The number was 190. These were written to by Mr. E. T. Willans, Mr. Littlewood's house surgeon. Only 69 replies were received. Of these 23 patients are now alive and well. Six patients lived more than seven years and died without any recurrence, 23 died within two years from recurrence, and 17 died from recurrence at longer intervals. So that out of 190 cases, 29 are known to have lived for seven years after the operation without any recurrence—i.e., about 15 per cent. The cases shown were: Sarcoma of clavicle, 1; sarcoma of testis, 2; sarcoma of upper jaw, 3; sarcoma of breast, 1; carcinoma of breast, 5; carcinoma of colon, 5; and carcinoma in other parts, 6.

HARVEIAN SOCIETY OF LONDON.—A meeting of this society was held at Paddington Green Children's Hospital on Feb. 1st, Dr. H. J. Macevoy, the President, being in the chair.—The following cases were shown:—Dr. Leonard G. Guthrie: (1) Transposition of Viscera and Dextrocardia; (2) Right Cerebellar Tumour; and (3) Chronic Jaundice with Splenomegaly.—Dr. G. A. Sutherland: (1) Achondroplasia; (2) Congenital Heart Disease; (3) Acute Polioencephalitis; (4) Cardiac Disease with Rheumatic Nodules; and (5) Tuberculous Peritonitis.—Dr. R. Miller: (1) Infantilism with Renal Disease; and (2) Acute Poliomyelitis.—Mr. A. Edmunds: Congenital Absence of Femur.—Mr. M. S. Mayou: (1) Sympathetic Paralysis of Right Eye; and (2) Congenital Word Blindness.—The cases were discussed by various members.—Some interesting microscopical slides were also shown in the new pathological department by Dr. H. W. Perkins.

A CORRECTION.—Professor W. D. Halliburton writes to say that Dr. J. Burdon-Cooper's statement at the Ophthalmological Society meeting, reported in our last issue on p. 297, is not quite correct. Professor Halliburton did not confirm the presence of tyrosin in the aqueous. The crystals examined by Professor Halliburton in 1906 looked something like tyrosin, but the amount present was insufficient for analysis. The subsequent account of the investigation of the lens of a pig's eye was given, of course, by Dr. Burdon-Cooper, and referred to his own work.

Reviews and Notices of Books.

Pathologische Anatomie. Ein Lehrbuch für Studierende und Aerzte. Bearbeitet von L. ASCHOFF, Freiburg i. Br.; M. ASKANAZY, Genf; H. BEITZKE, Lausanne; C. BENDA, Berlin; M. BORST, München; A. DIETRICH, Charlottenburg; P. ERNST, Heidelberg; E. v. GIERKE, Karlsruhe; L. JORES, Köln; R. KRETZ, Würzburg; O. LUBARSCH, Düsseldorf; O. NAEGELI-NAEFF, Zürich; R. RÖSSLE, Jena; M. B. SCHMIDT, Marburg; H. SCHRIDDE, Freiburg i. Br.; E. SCHWALBE, Rostock i. M.; M. SIMMONDS, Hamburg; O. STERNBERG, Brunn. Herausgegeben von L. ASCHOFF, Freiburg i. Br. Zweite Auflage. Jena: Gustav Fischer. 1911. Erster Band: Allgemeine Aetiologie, Allgemeine Pathologische Anatomie. Pp. 778. Price, paper, M.14; bound, M.15.75. Zweiter Band: Spezielle Pathologische Anatomie. Pp. 997. Price, paper, M.16; bound, M.17.75.

To the editor it appeared impossible for one person to write a text-book on general *and* special pathology without devoting his whole time to it, and hence he summoned to his aid trusty and well-equipped collaborators.

Volume I. deals with general pathology, and it begins with an article by R. Rössle on General Ætiology and the Causes of Internal Diseases. M. Askanazy then deals with the Causes of External Diseases, and Rössle contributes a chapter on the General Pathology of the Cell. The rest of the volume is devoted to general pathological anatomy, and is divided into chapters in which are treated successively the following subjects: Malformations, by E. Schwalbe; Disturbances of Metabolism, by E. v. Gierke; Diseases of the Circulatory System, by A. Dietrich; Immunity and Allied Phenomena, by R. Kretz; Inflammation, by O. Lubarsch; and Pathological Growths and True Tumours, by M. Borst.

It is impossible to do more than single out a few of the salient features in a work which is so admirable throughout. The part devoted to heredity is particularly well done and well illustrated, and we commend its perusal to pathologists. The causes of external diseases, such as the effects of heat, cold, electricity, light, X rays, atmospheric pressure, traumatisms, infections, chemical toxins, poisons, and auto-intoxications, are all skilfully and compactly handled. Parasites—first the vegetable forms—as the cause of disease are next considered. The coloured illustrations are particularly fine, both as regards sharpness of definition and truthful reproduction of the staining—good examples are those of pneumococci, gonococci, sarcina; of the bacillus of anthrax, tetanus, influenza, typhoid, tubercle, and leprosy; of treponema pallidum of Schaudinn in syphilis blackened by silver nitrate by the Levaditi colouration. Animal parasites belonging to the protozoa, vermes, and arthropoda are next considered, and are equally lavishly and successfully illustrated. There are also life-like illustrations of trypanosomes and the malarial parasites. The general pathology of the cell is well illustrated in colour, including Negri's corpuscles in nerve cells, giant cells, and degenerations in general.

A section of their studies not much pursued by students is that of general teratology, which in this volume is treated in a most attractive manner by E. Schwalbe. It includes comparative teratology as well as human abnormalities. The figures are excellent—e.g., those of cephalothoracopagus of various kinds, of holoacardius as seen by the X rays, and such strange forms as diprosopus, craniopagus, abnormalities which find their explanation in the facts of embryology. The chapter on disturbances of metabolism is illustrated by 31 figures. Such outstanding subjects as death (general and local), necrosis, atrophy, degenerations are concisely set forth. The derangements of fatty and of

mineral metabolism are equally well discussed and illustrated —e.g., siderosis, argyrosis, anthrakosis, and rickets. There are excellent figures to illustrate the text on the circulatory organs. One is very striking—viz., that of an embolism of the pulmonary artery resulting from thrombosis of the femoral vein.

Under the head of "Protective Inoculation and Immunity" there is a full account of serum therapeutics, agglutinins, precipitins, anaphylaxis, cytotoxins, and allied subjects, and particularly well set forth and illustrated is the theory of immunity. The chapter on Inflammation and the illustrations are good, and the same may be said of the chapters devoted to Pathological Growths and True Tumours.

Volume II. concerns itself with special pathological anatomy. The editor, Professor Aschoff, deals with the heart, female reproductive organs, the digestive and urinary organs. C. Benda is responsible for the blood-vessels and the lymph-vessels. O. Naegeli treats of the blood and Schridde of the blood-preparing organs. H. Beitzke gives an account of the respiratory organs, and P. Ernst of the nervous system. The male reproductive organs are allotted to M. Simmonds; the liver and pancreas to C. Sternberg; glands with internal secretions to E. v. Gierke; the skin to L. Jores; and the motor apparatus M. B. Schmidt.

In dealing with the special organs, in every case there is a preliminary chapter on the development, and the anatomy of the normal organ under consideration is briefly and tersely described. As in Volume I., the illustrations are excellent. In the chapters on the heart we may refer to the *a.-v.* bundle, brown and fatty degeneration of the heart fibres, and those of stenosis of the aorta and myocarditis. The figure of fatty degeneration of the aorta is particularly life-like. The description of the blood-preparing organs is good, and the illustrations are equally so. There are a number of figures in the chapter dealing with bones which we think are not usually found in text-books. They should commend themselves particularly to the surgeons. Some of the illustrations of the nervous system appear to be rather small and crowded with detail, while there are relatively fewer coloured illustrations than in the other sections. The pathology of the urinary organ is very well set forth, and the same may be said of the treatment of the digestive tract—a rather lengthy series of chapters.

We have said enough to show how excellent, comprehensive, and well illustrated this text-book is. We feel sure that it will be welcomed by all pathologists, both in the land of its birth as well as in foreign parts. Text, type, paper, and illustrations are all alike beyond cavil, and we congratulate the editor and his co-workers on the successful result of their combined efforts.

The Life of John Ruskin. By E. T. COOK. In two volumes. London: George Allen and Co., Limited. 1911. Vol. I., pp. xxv. and 540; Vol. II., pp. 615. Price 21*s.* net.

TO few men has it been given to have their thoughts and writings so criticised as have been those of John Ruskin. Almost every man of letters in this country for fifty years has had his say about the master, and we wonder that there is anything fresh to tell. Mr. Cook, we remember to have heard, used to tear the wrappers from the early numbers of "Fors" on his way from chapel to breakfast when a boy at school, and ever since those early days he has been in constant contact with Ruskin's mind and works. But to those elders who have almost forgotten the enthusiasms universally displayed with regard to Ruskin's earlier work, these volumes will come with pleasing freshness, and more modern students will find both cause and effect of Ruskin's work displayed intelligibly.

Much of the fascination and influence of Ruskin lay outside of his didactic criticisms and his more formal oratorical essays. He would have rested immortal upon the formulations of "Modern Painters" and "The Seven Lamps of Architecture" alone, but he was much more than an art critic, and perhaps the subject in which he attained the greatest accuracy of thought was geology. His latest biographer is free to touch upon personal matters with less reserve than Mr. Collingwood was able to do in 1893, and we are afforded pathetic glimpses of the failures and misfortunes of Ruskin's life. Details interesting to the psychologist of his repeated mental attacks are given with discretion and taste, and reference is made to the explanation given by Ruskin himself to a writer who communicated this account to the columns of the *British Medical Journal* of Jan. 27th, 1900. One notable feature in the attacks of mental storms was the vivid character of the visions and the exacerbation of the beauties and hideousness of things beautiful and hideous respectively. The writer of the article asked Ruskin if he did not think that this might be due to his (Ruskin's) highly developed artistic sense, to which Ruskin replied in the negative, but he also referred to the extremely vivid manner in which children could see what grown-up persons could not—e.g., resemblances in natural objects to something else which had no connexion with them. And herein may lie the explanation of Ruskin's vivid vision in illness. He had the mind of a child, with all its powers of imagination and ability to make real that which an adult would call unreal. His mental quality was always of that kind described by Thomas Treherne in writing of his childhood:—

> Then did I dwell within a world of light
> Distinct and separate from all men's sight,
> Where I did feel strange thoughts and such things see
> That were, or seemed, only revealed to me.

And this internal vision was sharpened in illness. But how human Ruskin could be when the bow unbent; what a charmingly naïve picture he gives of himself in Venice (Vol. II., p. 301): "I strike work at two or a little after—go home, read letters, and dine at three; lie on sofa and read any vicious book I can find to amuse me—to prevent St. Ursula having it all her own way. Am greatly amused with the life of Casanova at present." There is nothing of the prig here.

Ruskin's great charm lay in the vast range and versatility of his knowledge. No one, for instance, has written on the Psalms for ordinary lay British readers with the illuminating insight, that page after page of "Modern Painters" demonstrate. And "what a mirror of the author's mind is 'Fors' in its discursiveness! It ranges from Monmouth to Macedon, from China to Peru, from Giotto to goose-pie" (Vol. II., p. 319).

Without undue insistence and without apparent effort Mr. Cook has given us a loving and lifelike portrait of a most learned man, who owed most of his mental training to his own steadfastness, and to whom, although his views were at times Quixotic, his country owes a debt for his burning words in defence of truth, beauty, and that righteousness which exalteth a nation.

The British Pharmaceutical Codex, 1911: an Imperial Dispensatory for the Use of Medical Practitioners and Pharmacists. By direction of the Council of the Pharmaceutical Society of Great Britain. London: The Pharmaceutical Press. 1911. Pp. xiii.–1568. Price 10*s.* 6*d.* net.

THE progress that has been made in pharmacy during the past four years is well reflected in the new issue of the "British Pharmaceutical Codex," but the difference between the new issue and that of 1907 is by no means wholly due to the improved pharmaceutical methods that have been devised during the period intervening between the publication of the two issues. There is abundant evidence that information furnished as a result of pharmaceutical research

has been utilised fully in the new book, and the faults of the first issue—faults which it is almost impossible to avoid in the first edition of a technical book of this magnitude—have been corrected.

The arrangement of the new issue has the advantage of convenience. The 1907 issue traversed the long journey from Abri Semina to Zizyphus without a break, but in the new work the matter is divided into two parts, one containing the materia medica and the other consisting of the formulary. To the former 1100 pages are devoted and to the latter 334, the book containing 150 pages more than the previous issue. In the materia medica section the useful plan has been adopted of indicating by means of heavy type the important properties of the drugs described, and the same type has been used in other ways to facilitate reference. A further improvement is the addition of brief descriptive notes on the preparations of each drug and chemical, at the end of the respective monographs. Where drugs, chemicals, and galenical preparations described in the Codex are official in the British Pharmacopœia or the Pharmacopœia of the United States of America the fact is indicated, an indication which was lacking in the first issue. Reference is also made to the source of non-official preparations mentioned, and of some which were formerly official. By adding to the book a pharmacological and therapeutic index, the Codex Committee have rendered the work the most useful of the kind published in this country; to medical practitioners it will be most valuable.

Collected Papers by the Staff of St. Mary's Hospital (Mayo Clinic), Rochester, Minnesota. London and Philadelphia: W. B. Saunders Company. 1911. Pp. 633. Price 24*s.* net.

WE had the pleasure of noticing in THE LANCET of August 19th, 1911, the first volume of reprinted papers by the members of the staff of the Mayo Clinic, and we are pleased to see that it has been thought well to issue in one volume all the papers which have been published during the year 1910 or thereabout. It is a good plan that might well be followed by other institutions, for a volume such as this gives a very good idea of the activity of the staff, and the reader is able to estimate the amount of work that has been done, and to compare it with the output of other similar bodies. It is not until all these papers have been collected that it is recognised how much has been done. In this volume the contents have been classified according to the organ concerned, and, as might have been expected, a large portion of the book, about half in fact, deals with the surgery of the abdomen. Our space will only permit a notice of the more striking papers.

Dr. H. S. Plummer contributes a paper on the Technic of the Examination of Œsophageal Lesions; it is illustrated by a large number of skiagrams showing the appearances presented by the different classes of lesions; the position, the shape, the size, and the relations of diverticula and dilatations when filled with bismuth mixture are shown clearly in skiagrams. Dr. Plummer speaks highly of Mixter's method of employing a silk thread as a guide: the patient swallows six yards of silk thread; this passes far enough down into the intestine to prevent its withdrawal when it is pulled taut, and if a hollow sound is slipped over its upper end it will be guided into the true channel of the œsophagus and will avoid pouches. Dr. Charles H. Mayo has also written a paper on the Diagnosis and Surgical Treatment of Œsophageal Diverticula, in which he discusses the technique of the recognition of these pouches, and he reports eight cases of this condition, six of which have been treated successfully at the Mayo Clinic; the two others have not had any operation performed on them. Dr. William J. Mayo has supplied a paper on the very important subject of Gastro-jejunal Ulcers, or, as they have been called, "pseudo-jejunal ulcers"—that is to say, ulcers forming at the gastro-jejunal opening. Three cases occurred, but not one case of true jejunal ulcer was met with after 1141 gastro-jejunostomies. Dr. Donald C. Balfour has reported 15 cases of Meckel's Diverticulum; these were found in 10,000 cases of abdominal section. In 5 of the 15 cases the diverticulum caused symptoms for which the patient sought relief, while in the 10 others the patients' symptoms were not due to the diverticulum, yet in a few of these active pathological changes were present in it.

Dr. William F. Braasch has written two papers on the Renal Pelvis in which he has discussed its deformities and the means of recognising them. A number of useful skiagrams accompany the articles. Dr. Louis B. Wilson has described 32 cases of Hypernephroma, and he has also contributed a paper, in the preparation of which he was assisted by Mr. Byrd C. Willis, on the histology of these tumours. He comes to the conclusion that hypernephromata do not arise from adrenal rests or from proliferations of the adult secreting epithelium of the convoluted tubes, as has been suggested, but are derived from "islands of nephrogenic tissues (primitive renal blastema)." The only other paper which we have space to mention is one on Pulmonary and Circulatory Complications following Surgical Operations, by Dr. E. H. Beckman. Four cases of pulmonary embolism are reported, and of these one recovered.

From the fact that many of these papers were written for reading before general medical audiences, it is not surprising that some of them are a little sketchy, but for the most part they are important contributions to surgery. There is certainly some overlapping when the same subject has been dealt with by two different writers, and even illustrations have been duplicated, but this is not of any great importance. We shall look forward with interest to future volumes of this series.

Ancient Types of Man. By ARTHUR KEITH, M.D., LL.D. Aberd., Conservator of Museum and Hunterian Professor, Royal College of Surgeons of England, &c. With frontispiece and 29 illustrations in the text. London and New York: Harper and Brothers. 1911. Pp. xix.–151. Price, cloth, 2*s.* 6*d.*; leather, 3*s.* 6*d.* net.

BY the publication of this little volume in "Harper's Library of Living Thought" Professor Keith has done a double service—a service to the science of anthropology and a service to the great collection of anthropological material which he has under his charge. Anthropology has benefited especially by the method which the author has chosen for presenting his subject, for he has given what is practically a catalogue of the remains of ancient man, so that material which is scattered through many museums and private collections is brought under the review of anyone who cares to spend 2*s.* 6*d.* on the volume. Yet the book is far from being a mere catalogue, for concerning each relic Professor Keith gives the circumstances of the discovery, the characters of the bones, and an able discussion of the probable type of individual represented by a few stray fragments of his skeleton. And withal the whole account is woven into one consecutive story, so that the reader may follow the succession of the early types of the human race from the late Neolithic Briton who ate blackberries in Essex back to that notorious individual who lived in Java in early Pleistocene days at latest.

The whole account is remarkably easy reading, and is given in plain language, which adds enormously to the utility of the book. This very simplicity is the key to the second service rendered by Professor Keith. In England

we have great storehouses of material wherein are kept—and all too often buried—treasures the value of which depends almost entirely upon a chain of apparently trivial details concerning their finding. These details are not infrequently within the knowledge of people ready and willing to furnish them, but unaware of their significance to the specialists who guard the treasures. The scientific gain that attends the awakening of interest in such subjects is not to be easily over-estimated, and Professor Keith has already amply demonstrated this fact in regard to the Gibraltar skull. Often some purely utilitarian work is done—a dock is dug out, a railway cutting cleared, or a gravel pit excavated; in some more fortunate places a scientist may be commissioned to watch the work. In England the observation of the chance finder of some human fragment often affords the only trustworthy data on which hinge questions of the utmost importance.

The man who places, in a form easy of mastery, the essential facts of our knowledge of the traces of early man within reach of the public has, therefore, done good service to his science, and in this case also to his office.

The Declining Birth-rate. By A. NEWSHOLME, M.D. Lond., M.R.C.S. London: Cassell and Co. 1911. Pp. 64. Price 6*d.* net.

OF the series of "New Tracts for the Times," promoted by the National Council of Public Morals, the present is the third in order of publication. Within the compass of its 64 pages the author has accumulated a surprising amount of information, apparently up to date, the like of which in a single volume it would be difficult to find elsewhere. Inasmuch as it is issued by Dr. A. Newsholme, author of "Elementary Vital Statistics," and principal medical officer to the Local Government Board, the accuracy of the statements may be taken for granted. In most civilised countries decline of the birth-rate is undoubtedly taking place, the relation of which to "natural increase of population" is discussed in the text. In the author's judgment this decline can hardly be attributed to postponement or avoidance of marriage. When women of equal age in a given country are compared with women of the same country 20 years later, a great decline of fertility is observed in many parts of the world. But volitional limitation of families appears to be the predominant cause of decline in the birth-rate, both here and abroad. The limitation of families is known to be operative in many countries; and this, rather than an increase of sterility, of which there is no evidence, may be regarded as the governing factor in the diminishing birth-rate. From all the facts available the conclusion seems inevitable that this calamity is chiefly due to causes within human control. The same conclusion is suggested by the fact that in countries like Ireland, where "preventive measures" are forbidden on religious grounds, the corrected birth-rate continues high.

To the general reader the chief value of this pamphlet will be for reference. In the brief notice for which alone we have space it is impossible even to touch upon many of the topics handled in the text, for a fuller discussion whereof the pamphlet itself must be consulted.

LIBRARY TABLE.

Fathers of Men. A Book for Boys. By E. W. HORNUNG. London: Smith, Elder, and Co. Price 6*s.*—A book for boys, about a school, makes its appeal for the most part to an uncritical audience, who may be ready enough to detect small slips in detail, but who will forgive such errors in return for something gallant in heroes, dexterous in athletes, or heinous in villains. Those of us who are no longer boys are inclined, if we take up such books, to be less easy in our judgment; we do not detect errors in slang or the improbabilities of feats on cricket ground or running path, but we are quick to compare our own recollections, possibly fading, with the printed record of young Jack Harkaway; and when we do so we generally find Jack Harkaway's experiences to be not our own, though we may not be prepared to assert that such things do not happen nowadays and in inferior places to the paramount school which had the privilege of educating ourselves.

This is, perhaps, only a long-winded way of saying that a book for boys, about a school, as a rule, is a poor book, succeeding mainly through the amiability of its readers. A poor book on these lines should be an easy one to write, and we think that this is the case, for it is written by the score. But a good and serious book upon school-life, by which we mean to imply one that is written with accurate knowledge, with the intention to create the due atmosphere, and with a sense of the part played in modern English history by the English public school, is a rare work; to write it is an exploit which so far has been accomplished only two or three times. The author has to be old as well as young, just and also enthusiastic, quite sensible but with a proper sympathy for silliness, a censor of manners and morals, and yet a hero-worshipper. Mr. Hornung has the necessary and rare qualifications thus set out, and he has written a book of this serious order about Uppingham School. It is his challenging title, "Fathers of Men," which induces us to notice it in the columns of a medical journal. That the boy is the father to the man is a thesis of medical interest wherever the perpetual question of the value of public schools is in debate, for if there is one thing we are asked more persistently to believe than another it is that the public school environment annuls individual character and turns out young persons all in one mould, knowing exactly with what conventional codes to conform and in what collars and neckties to appear by morning, noon, or night, but otherwise ill-prepared for the life that lies ahead of them. It is suggested by one of the most sympathetic creations in Mr. Hornung's book that this view is nonsensical. Mr. Hornung writes impersonally, but the teaching of his story as a whole leads us to think that he, like his excellent Heriot, believes essential character to be largely independent of surroundings. Such a belief, which we are ready to share, forms a fine testimonial to the much censored public school system, and many a medical man, asked by anxious parents to advise as to the training of their children, will be glad to find the arguments for a reassuring belief in the public school system between the covers of a thoroughly good book.

Mr. Hornung has written a minute account of Uppingham School during the "eighties" under its celebrated head, Edward Thring. Of Thring he gives a remarkable sketch, always sympathetic though now and again critical, while behind all his allusions to that forceful man we see an enthusiasm for his high ideals and aspirations. Certainly under Thring's *régime* boys did not tend to become all of one pattern, for while his ideas of discipline were strict his respect for individuality, even of the individuality of the fourth-form boy, was very real. The message of Mr. Hornung's book is that great good comes of such a reasonable attitude towards boys, whose "young barbarity" will be found to be much on the surface by anyone taking the trouble to scratch below it. A combination of perfectly simple writing with sound psychological thinking makes "Fathers of Men" a remarkable book, and one which the many grandfathers of men will enjoy. It goes without saying that the author of "Peccavi" has planned his story well, and that the creator of Raffles narrates its more salient episodes with spirit and humour.

Leitfaden der Röntgen-Verfahrens. By F. DESSAUER and Dr. B. WIESNER. Fourth edition. Leipzic: Otto Nemnich. 1911. Pp. 366. Price 12 marks.—This is a practical text-book of Roentgen technique written by the well-known physicist and engineer of the Veifa works, in collaboration with a number of specialists, among whom the best known in this country are Holzknecht, of Vienna, and Hoffa, of Berlin. It will be familiar to English students, for a translation of the first edition was published by Messrs. Funk and Wagnalls in 1904. The present edition is much enlarged. The early part, comprising more than half the book, is devoted to the physics and the technique of the Roentgen rays. These are both treated of in a satisfactory manner. The technical directions are particularly good—those, for instance, for the care of the focus tubes, which impress the necessity of keeping them clean and free from moisture, of keeping a selection of tubes of different degrees of hardness, and of softening them once for all and thoroughly when it is absolutely necessary. No better estimate of the comparative merits of the different machines—the Coil, the Grissonator, the Snook, and the Blitz apparatus—can be found anywhere than in the chapter on Roentgen technique by Dessauer himself. Indeed, one of the great merits of the book is the fair and liberal way in which apparatus by different makers is discussed. The chapter on surgical diagnosis is written by Professor Hoffa, and that on the Roentgen therapy by Holzknecht. The sixth chapter dealing with orthodiagraphy and ortho-photography (ortho-skiagraphy would be a better term) is from the pen of Professor Hoffmann, of Düsseldorf. Holzknecht is responsible for the section on Roentgen Diagnosis in Internal Medicine. He insists on the advantages of his hanging screen, supported from the ceiling by balance weights. It is to be regretted that this is not more often used in England, since it is the only method by which Roentgen palpation—i.e., palpation of the abdominal organs under the Roentgen light—can be satisfactorily carried out. This palpation may be effected with complete safety to the operator by the use of Holzknecht's "Distinctor," or, what is equally convenient, a long wooden spoon. In the Roentgen examination of the stomach and intestines half the benefit is lost if the abdomen is not palpated in this way, by the hand, a wooden instrument, or the pressure of the screen. One of the most instructive chapters is also by Holzknecht, and gives the tracings of the screen examination in medical cases. These contain 22 diagrams of the Roentgen diagnosis in diseases of the chest and abdomen, all of which are of the greatest interest. The book is what it professes to be—a guide to Roentgen technique, containing what a student really ought to know, and not too overburdened with detail. It would be of advantage if this fourth edition could find an English translator, or perhaps better still an imitator, who could write with the zeal and knowledge displayed in this work.

The Life of Dr. Arthur Jackson of Manchuria. By the Rev. ALFRED J. COSTAIN, M.A. London, New York, and Toronto: Hodder and Stoughton. 1911. Pp. 187. Price 2*s.* net.—This is a simply and sympathetically written record of the life and death of a medical man who laid down his life at the early age of 26 years in pursuance of his duty of ministering to the sick. The records of our profession contain, we say it with pride, many similar instances of devotion, but Jackson's death occurred in dramatic circumstances which are wanting in those instances of medical men who are fatally infected in the course of everyday practice. He died from plague far away from his home at the Chinese railway station at Mukden and he was ministering not to his own kith and kin, but to Chinese coolies. His duty, for which he had volunteered, was to examine Chinese coolies who were coming down to Mukden from Northern Manchuria, and to stop those who were plague-infected, as most of them were. The Manchurian outbreak of plague during the winter of 1910–11, though comparatively small in extent, was very virulent, and all the more so in that the cases were almost all of the pneumonic type.[1] Jackson had only been in Mukden for ten weeks. He had come out as a medical missionary of the Scottish Presbyterian Mission, and his nominal sphere of work was the mission hospital. But when plague, following the line of the railway, crept down to Mukden it was evident that something must be done to stay its spread to Peking. Hence the intercepting post at the Chinese railway station and Jackson's appointment as medical officer of the intercepting organisation. In spite of every precaution, for he was too sensible to throw his life away by carelessness, Jackson became infected. He had arrived at Mukden on Nov. 14th, 1910; on Jan. 25th, 1911, he was dead. In our obituary notice[2] are recorded some details of the valuable work done by him, even in that short period, as well as a notable and pathetic tribute which was paid to him at his funeral by the Viceroy of Manchuria. Mr. Costain's book—while giving this and other interesting information—will also serve as a memorial of a noble life, untimely cut off, and one of which his professional brethren, his school (Merchant Taylors, Crosby), his university (Cambridge), and his final medical school (Liverpool), may well be proud.

The Anopheline Mosquito. Some Facts and Information for Use in Schools. By R. C. DAUGLISH. With an Introduction by J. W. W. STEPHENS, M.D. Cantab., Liverpool School of Tropical Medicine. London: John Murray. 1911. Pp. 28. Illustrated. Price 6*d.* net.—This little book, which is dedicated to "the Children of the Empire," is instructive and interesting. Mrs. Dauglish wrote her story of the anopheline mosquito for a society formed in Barberton, in the Transvaal, to fight malarial fevers, the society being known as the Barberton Anti-malarial Association. The facts set forth are simple and clearly expressed, and the lay reader will find carefully explained to him how to keep himself free from "fever" or "ague." The story of Ismailia is an example of what modern research can attain to. The book should be of particular use in the schools in those countries where anopheline mosquitoes and malaria are found, and to adults visiting such places.

Tuberculosis: A Plain Statement of Facts regarding the Disease. Prepared especially for Farmers by the International Commission on the Control of Bovine Tuberculosis. Published by the Government Printing Bureau, Ottawa, Canada. 1911.—This excellent brochure of 30 pages combines in a short space a number of most telling facts clearly illustrating the untrustworthiness of an opinion upon the presence or absence of tuberculosis in cattle based on external appearances only. The author, Dr. J. G. Rutherford, C.M.G., F.R.C.V.S., the Veterinary Director-General for Canada, thus endeavours again to bring before farmers and others interested in cattle the dangers of tuberculosis, and the value of the application of the tuberculin test for stamping the disease out of a herd. He deals with the subject in simple language, and increases popular interest by a series of excellently reproduced photographs. The brochure can be obtained by medical men upon application to the Government Printing Office, Ottawa.

Essentials of Surface Anatomy. By CHARLES R. WHITTAKER, F.R.C.S. Edin., F.R.S.E., Senior Demonstrator of Anatomy, Surgeons' Hall, Edinburgh. Second edition, revised and enlarged. London: J. and A. Churchill. 1912. Pp. 59 and 12 plates, comprising 20 figures. Price 3*s.* 6*d.* net.—

[1] THE LANCET, April 29th, 1911, p. 1152.
[2] THE LANCET, March 11th, 1911, p. 707.

Mr. Whittaker is to be congratulated upon the appearance of the second edition of this little work, for the publication of a new issue has given him the opportunity for making several improvements, the most obvious of which is the inclusion of some outline drawings. These are for the most part not very ambitious pieces of work, but they have the merit of simplicity, and all answer their purpose well. The book gives in simple form the most important surface markings and landmarks of the human body, and as an epitome of these it may well fill the same sphere of utility that its former edition has so successfully occupied. Perhaps it would be well to consider if, with an increase of this sphere of utility, it would not be advisable to include, at any rate within brackets, the nomenclature laid down by the Basle agreement. For anything save a local reputation it seems likely that such a step would be essential.

A Naturalist on Desert Islands. By PERCY R. LOWE, B.A., M.B. Cantab. London: Witherby and Co. 1911. Pp. 300. Price 7*s.* 6*d.*—For the grown man who remembers his "Robinson Crusoe" and his "Coral Island," the subject of desert islands is one of perennial interest, and Dr. Lowe's description of islands which, if not exactly desert, are still in a very primitive condition, will take many readers back to the days of their youth. The islands in question are the two Swan islands, Blanquilla and the Hermanos. The first two are specks of coral situated in lat. 17° 25′ N., and long. 83° 56′ W., or, roughly speaking, 98 miles north of Cape Patook in Honduras. Blanquilla belongs to Venezuela and is close to the Hermanos, which belong to the same power. Their position is roughly lat. 12° N. and long. 64° 30′ W. Dr. Lowe visited them recently in company with Sir Frederick Johnstone and Lady Wilton his wife, and this book gives an account of the geological and zoological features of the islands, which are of quite disproportionate interest as compared with the size and commercial or political importance of these atoms of land. Swan Island (there are two, but they are only 400 yards apart, and the second one is only about one mile long by half a mile wide, so that we may speak of them as one) is practically a "buoy" marking the southern edge of Bartlett's Deep, a depression in the sea bottom of some 18,000 to 20,000 feet in depth. The only inhabitants are a "Mr. A.," his father, mother, brother, and a few negro servants. The island is apparently quite oceanic—i.e., it has never had any dry land communication with the mainland, and therefore its flora and fauna offer many problems as to how they arrived at their present habitation, and Dr. Lowe's speculations on these problems are by no means the least interesting portion of his book. Blanquilla and the Hermanos come in a different category and form part of the long chain of islets running along the north coast of Venezuela. Blanquilla is inhabited by one family, one member of which lives apart by himself; the Hermanos islands are given up to birds, whose tameness was in no way shocking to Dr. Lowe as that of the birds of a similar island was to Alexander Selkirk, but, on the contrary, of extreme interest. He expresses a hope that among the solitudes of these islands there may still be found examples of the apparently extinct race of petrels, oestrelata, which used to inhabit Jamaica. Anyone who cares for strange forms of animal life cannot do better than consult Dr. Lowe's charmingly written book.

MISCELLANEOUS VOLUMES.

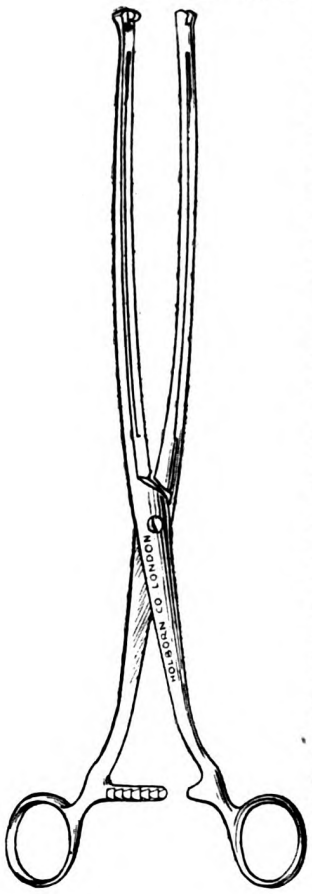
THE National Insurance Act is giving everybody much to think about, judging from the great output of books explaining it. *The Alphabet of the National Insurance Act, 1911*, by Mr. C. G. Moran, Barrister-at-Law (London: Methuen and Co. Limited. Price 1*s.* net), arranges the contents of the Act in dictionary form, so that the reader can at once put his finger on any particular point concerning which he may desire information. The idea is certainly a good one. The book is merely an alphabetical analysis of what the Act really provides, not in any sense an argument concerning its merits or defects.——In these days medicine touches on so many departments of life that there is probably no information, however technical, which the medical man may not at some time or other find useful, and the way in which our clothes are washed is certainly no exception to this statement. *The Washhouse and All About It*, edited by C. F. TOWNSEND, F.C.S. (London: The Power Laundry. 1911. Price 1*s.* net), deals with an important department in the cleansing of soiled clothing. It contains a general description of the washing process, and includes information as to the best way of removing stains, with comments on the use of chemicals, starch, bleaching processes, and so forth.——*The Modern Culture of Sweet Peas* (London: The Cable Printing and Publishing Company. Price 1*s.*) is a very practical little book by Mr. Thomas Stevenson, an authority on the subject. The book is already known to many, and its re-issue at a third of the original price will give to it the wider circulation which it deserves.——"Peeps at Industries" is the excellent idea of a series of books to be issued to give information about the great industries of the world, and the first of the series is on sugar. (*Sugar.* By EDITH A. BROWNE. London: Adam and Charles Black. 1911. Price 1*s.* 6*d.* net.) The author adopts a free conversational style and tells her interesting story quite well. We have read the accounts of cane and beet cultivation, and the manufacture and finishing of the sugar for the markets, with great pleasure. The industry, moreover, has many historic features.——The question whether beet cultivation, with the view of making sugar therefrom, can be made to pay in England is very fully discussed in *Sugar Beet, Some Facts and Some Illusions*, by Home Counties (J. W. ROBERTSON-SCOTT). (London: Horace Cox. 1911. Price 6*s.*). The book is a valuable contribution to the subject. After careful inquiry in a great many directions the writer concludes that (1) "there is good reason to urge that those who have suitable land in the vicinity of a proposed factory should make the experiment of beet growing for three or five years; and that they should be supported by landlords and by local opinion"; (2) "if the best price for roots with a reasonable sugar percentage is given, a price it should be apparently within the power of properly planned and properly managed factories to pay, and the new crop is grown with the intelligence, business acumen, and attention to detail which distinguish our agriculturists—proper regard being had to Continental experience—beet growing should prove as remunerative as it is found to be in Holland by farmers who are not factory shareholders."——There are now quite a number of books dealing with the practical side of milk production. A good guide to the testing of milk by chemical methods has recently been published under the title of *Milk Testing: A Simple Practical Handbook for Milk Producers and Distributors.* (London: The *Dairy World* Office, price 1*s.*) The author, Mr. C. W. WALKER TISDALE, F.C.S., shows an intimate acquaintance with his subject, and the tests he describes should be clear to the dairy farmer and his assistants. The list of tests is, moreover, a very comprehensive one.——In *Milk and Cream Testing*, by G. SUTHERLAND THOMSON, F.R.S. Edin. (London: Crosby Lockwood and Son, 1911, price 4*s.* 6*d.* net), we find a book designed for reference in the school, farm, and factory. The directions and tests given are obviously the outcome of a wide practical experience, while the arts of making butter and cheese are ably discussed with due regard to the special modern scientific developments bearing upon this important industry.——The University

Press of Aberdeen has recently published a subject catalogue containing the titles of the books in the Phillips Library of Pharmacology and Therapeutics, Marischal College, which was founded in memory of the late Dr. C. D. F. Phillips by his widow. Dr. Phillips contributed several works on Materia Medica and Therapeutics, and his library shows what a vast source of reference on this and cognate subjects he kept by him.——Dr. J. Ewing Mears is to be commended for his effort to spread broadcast a knowledge of what is probably the greatest object lesson the world has had of the power of intelligent and scientific sanitation to abolish deadly diseases that have for centuries held certain tropical countries in their grasp. Of countries so oppressed, perhaps the Isthmus of Panama was the very worst; yet so important was it to world progress that thousands of lives have been lost there in futile attempts to utilise it for the purposes of commerce. In the *Triumph of American Medicine in the Construction of the Panama Canal* (Philadelphia: W. J. Dornan. 1911. Pp. 26) Dr. Mears traces the transformation of the "canal zone"—a belt of territory containing 322 square miles, extending 5 miles wide on each side of the Panama Canal, extending from the Atlantic to the Pacific—from a pestilence-ridden area, reducing the death-rate of all white folk who went there from 70 per cent. to under 1 per cent. He details the measures and precautions taken in the achievement of this result, which certainly fulfil the definition of genius as "an infinite capacity for taking pains." It is not so much superior knowledge as superior powers of organisation that has rendered possible this remarkable achievement of Colonel W. C. Gorgas, of the Medical Corps of the United States Army.——In a *Manual of Heraldry* (London: T. Werner Laurie. Pp. 291. Price 6*s*. net) Mr. Gale Pedrick traces the rise, progress, and decay of this ancient science, without some knowledge of which, he truly says, it is absolutely impossible for anyone to understand and appreciate the associations and even the beauty of much poetry, art, architecture, or literature. The beauties of symbolism are being too much lost sight of in this realistic age. In this book the precursors of heraldry are described, the authorities of British arms explored, the various charges and armorial instances are historically and symbolically discussed, the influence of heraldry upon art and architecture, archæology and genealogy, as well as upon literature and poetry (particularly that of Scott), is expounded, and finally the author proposes a reform of heraldry—whose spirit from an archæological and artistic standpoint is always fresh, though its ancient exercise is dead and incapable of resuscitation—by measures designed to accommodate it honourably to modern conditions. The illustrations of coronets, ordinaries, tinctures, differences, and so forth, are facsimiles of those contained in a "Pocket Herald" and "Gentleman's Companion," published by Richard Barry, of Bristol, "as the Act directs," on August 1st, 1810.——The fourth (revised) edition of Hassam's *Arabic Self Taught* (*Syrian*) (London: E. Marlborough and Co. 1911. Pp. 128. Price, paper, 2*s*.; cloth, 2*s*. 6*d*.) has been practically rewritten by the Rev. N. Odeh, and much entirely new matter, including an outline of the grammar, has been added. The transliteration used has been carefully devised to give the phonetic pronunciation of Arabic in accordance with the scheme adopted by the Congress of Orientalists, and has been simplified to the last degree.

Messrs. John Ouseley, Limited, of 6, Fleet-lane, Farringdon-street, E.C., ask us to state that *The Blood and its Third Anatomical Element*, by A. BÉCHAMP, translated by Dr. MONTAGUE R. LEVERSON, which was reviewed in THE LANCET of Jan. 27th, p. 235, is published by them in this country at 6*s*. net.

New Inventions.

A NEW STOMACH CLAMP.

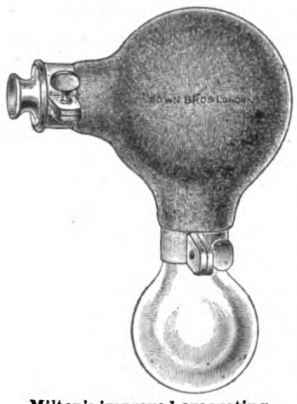


THE accompanying figure illustrates a stomach clamp recently made for me by the Holborn Surgical Instrument Company, Holborn-circus, London, E.C. The blades may be had either straight or curved. It has been a well-recognised difficulty to obtain a clamp possessing length and rigidity with strength sufficient to effectually retain a grasp on the stomach without unduly crushing it. This instrument has the desired spring, and with the end locking arrangement there is no possibility for the blades to side-slip. The fenestræ permit, if desired, the insertion of sutures to prevent hæmorrhage, while at the same time they assist in retaining the grip upon the stomach wall after division. If the slot be not desired, rubber tubes may be placed over the blades, but this is not recommended as the forceps possess the necessary rigidity and safe grasping power when used naked. If covered by rubber the blades must be locked much too tightly to retain a hold without risk to the tissues grasped.

ALEX. MACLENNAN,
M.B., C.M. Glasg.
Glasgow.

A NEW EVACUATOR FOR LITHOLAPAXY.

IN THE LANCET of Jan. 20th Mr. John Pardoe draws attention under this title to the fact that many of the older forms of evacuators for litholapaxy are made with their metal collars permanently attached to them, and he describes an evacuator of the Bigelow type in which the glass bulb is removeable from the bottle.



Milton's improved evacuating apparatus.

Messrs. Down Bros., Limited, point out that Mr. Milton's evacuators have been made with both the mounts removeable for many years past, and were first described in their catalogue in the year 1900, and the illustration appended has appeared in their catalogue since the year 1906. That being the case, it has naturally drawn attention to the matter, and they have been frequently called upon to supply, and have made, Bigelow's and most other models of evacuators with removeable screw collars made on the same principle as those shown in the accompanying illustration.

THE LANCET.

LONDON: SATURDAY, FEBRUARY 10, 1912.

The National Insurance Act.

As we foreshadowed in our last issue the conference which the National Insurance Commissioners proposed to hold with representatives of medical interests on Feb. 2nd came to nothing. Finding their invitation declined by such important bodies as the General Medical Council, the Royal College of Physicians of London, the Royal College of Surgeons of Edinburgh, the Society of Apothecaries, and the Council of the British Medical Association, and being threatened with refusal from other bodies whose answers they awaited, the Commissioners decided at the last moment to postpone the conference. The reasons given for not accepting the invitation of the Commissioners varied in different quarters, but the feeling behind the replies was clearly much the same everywhere. The strongest and the most general objection to attending the conference was that it had been sprung upon the bodies concerned without giving them time either to consult their constituencies or to confer together. In support of this suddenness we presume that the Commissioners would quote Section 58 of the Act, which instructs them, "As soon as may be after the passing of the Act" to appoint an Advisory Committee for the purpose of making and altering regulations under the Act. If the object of the conference had been confined to obtaining the help of the medical profession in forming this Advisory Committee (which must contain "duly qualified medical practitioners who have personal experience of general practice"), and if the invitations had been given with proper notice and due discrimination, the various bodies might have replied with less unanimity. For the formation of the Advisory Committee is the necessary prelude to the issue of the Regulations. But even if the Commissioners had displayed both tact and knowledge of the medical profession, it is very likely that the attempt to secure a conference with representative medical bodies would have failed, so strong is the feeling that no regulations whatever can shape the medical provisions in the existing Act into an acceptable form.

We know that this view is not held universally, and we publish this week the first of a short series of articles by Dr. W. A. BREND upon the position of the medical profession under the Act, which are designed to persuade the profession that a scrutiny of the parts of the Act affecting the medical profession will show the practitioners to be in a stronger position than is usually supposed. We choose this time for publishing Dr. BREND'S articles because there has been during this past week a remarkable unanimity in certain political papers in misrepresenting the point of view of those medical men who are opposed to the Act, while we are sure that our readers are as willing to hear both sides of any question as we are desirous of presenting those sides. The method employed by politicians has been to suggest that our opposition to the measure is purely the outcome of Tory bias or greedy terror, and it is endeavoured to prove this suggestion by demonstrating that as within the covers of the Act everything that is wanted by any fair-minded medical man can be obtained, no medical man can oppose the Act and be fair-minded. We invite our readers to study Dr. BREND'S articles and form their own conclusions. It is on the principle of *audi alteram partem* that we print this "Examination of the Medical Provisions of the National Insurance Act." It will be obvious to all who have followed the previous leading articles in THE LANCET that Dr. BREND is not in agreement with ourselves as to the main issues, but it is always well to clarify our ideas by a critical study of the strongest case that can be made out for the other side by one who can speak as an expert; and Dr. BREND has clearly studied the Act very closely as a barrister, while as a medical man he can appreciate the force of medical arguments. Our lay critics have not these advantages.

The result of the breakdown of the conference with the Commissioners is surely to show that, at any rate, delay must be granted before the working of the Act commences; the most favourable view of the medical provisions in the Act that can be taken by any partisan seems to us to point the same way. During the week an exposition of the National Insurance Act has appeared which will surely be studied with the greatest possible attention by many of our readers, and they will note in the preface, contributed by Mr. LLOYD GEORGE, that the Chancellor anticipates difficulties in the working of the Act, although he does not go so far as to admit, as Sir JOHN SIMON, the Solicitor-General, has already done, the certainty that amendments will be required. The description in this volume [1] of the position in which the medical profession will be placed by the working of the Act has been very carefully done, but the thing that stands most clearly out therefrom is summed up in the words of the authors: "It is impossible to forecast what the ultimate effect of the Act will be on the medical practitioners ....." That incomplete sentence of an excellent work, carefully written and admirably edited, forms a powerful argument for insistence upon delay in the working of the Act. The medical profession was not consulted before the original Bill appeared. During its transformation into the very different Act that it is, the representations of the medical profession were rewarded by little tangible improvement. The medical profession has come to a fairly unanimous opinion that under the existing medical provisions they will not obtain fair treatment—a statement which is fully borne out by the pledges given by many thousands of medical men, and which will receive endorsement at the forthcoming

[1] National Insurance. By A. S. Comyns Carr, W. H. Stuart Garnett, and J. H. Taylor, M.A., M.B. With a Preface by the Right Hon. D. Lloyd George, M.P. Macmillan and Co. Price 6s. net.

meeting of Representatives of the British Medical Association. There is no reason why they should be forced into working a measure concerning which they have never been duly consulted; and there is no justice or sense in representing their opposition to the measure as political. What is required now is an assurance that delay in the working of the Act will be granted; failing this the outcome may be very sad.

The Panama Canal and the Spread of Exotic Disease.

THE axiom that "disease follows trade" stands on a firm basis, past experience having shown that many maladies, particularly those classed as exotic, travel commonly along commercial highways by land and sea. In the olden days of trade caravans and sailing ships the spread of these infections was comparatively slow, but with the introduction of railways and steamships the diffusion of disease has become more rapid. The linking of the Atlantic and the Pacific Oceans by the ship canal now being cut through the Isthmus of Panama has therefore become of the highest importance to the whole world. We have described in our columns the sanitary procedure at the immense works,[1] and it is this which enables the Government of the United States to anticipate that the canal will be opened in about two years' time. The canal will create an entirely new situation, both in commerce and international sanitation, for it will place in communication ports which have hitherto had no direct trade with each other. For instance, the numerous ports situated on the western shores of South America will then have direct communication with the so-called Gulf ports in the south-east of the United States, and steamships from Eastern America will be able to sail across the Pacific to Japan, China, and India. Fears have already been expressed by epidemiologists that these altered geographical conditions may facilitate the spread of infection of such diseases as plague and yellow fever. One aspect of this subject has been dealt with recently in the *New Orleans Medical and Surgical Journal* by Dr. HOWARD D. KING, who in a vigorous article sounds the alarm, and warns New Orleans of the risk it will run on the opening of the Panama Canal from plague imported from the ports situated on the western shores of South America in the republics of Colombia, Ecuador, Peru, and Chili. In these States plague has been prevalent for some years and is in places increasing in amount, accompanied by a concurrent epizootic of plague among rats. At present there is no direct communication by ships between these ports and those like New Orleans, situated on the Gulf of Mexico; but when the canal is opened they will be within a few days' sail of each other.

None of the four States above mentioned possesses a sanitary administration worthy of the name, nor is there any trustworthy certification or record kept of the causes of death. Moreover, with plague, as with other infectious diseases, a policy of concealment is commonly adopted, and the bulk of this population is entirely apathetic in the matter of domestic and public sanitation. The measures hitherto employed to check the spread of plague have been inadequate, and such as they are they have been inefficiently carried out. In the circumstances there seems little prospect that these infected States will lend much assistance in preventing the exportation of human and rat plague, which must inevitably follow when the canal is opened for traffic and shipping communications are greatly increased. There are many fine harbours on the west coast of South America, and as soon as the new trade route is ready the vast resources of the interior of this part of the country as yet unexploited will be rapidly developed, with consequent great augmentation in the number of steamships calling at the ports. But the ports in the west of South America are not alone in their neglect of proper precautions against plague, for it appears from Dr. KING'S statements that New Orleans, and presumably other Gulf ports, are equally unready to deal with the disease. In New Orleans, with a population of over 370,000, are a number of recently arrived Italians of the poorer class, and also many negroes, whose mode of living often violates every modern sanitary requirement. Close to the river front, and within a stone's throw of the ships berthed alongside the old wooden wharves, are to be found warehouses, freight depôts, grain elevators, cold storage plants, factories of various kinds, along with stables and other buildings, all of which are overrun with vast hordes of rats. In the vicinity are situated working-class dwellings, some of them of a wretched description and notoriously lacking in most sanitary requisites. Men and animals, Dr. KING says, are housed in close proximity, and courts and backyards are littered with rubbish and household refuse. Bred for many years amidst a population opposed to sanitation rather than indifferent to the inconvenience of its institution, the rat lives and multiplies in most intimate association with the people; and families of rats occupy the same room with the human tenants. Foodstuffs are stored in the living apartments, thus affording a plentiful and easily accessible supply for the increasing rodent population. We can hardly conceive a combination of circumstances more favourable to the spread of plague. If infected rats, brought by steamships from infected ports, should land and mingle with the local rodents it would be almost an impossibility to prevent a serious epidemic of plague arising in New Orleans, and with probable extension of the outbreak to the valley of the Mississippi and even to the very heart of the United States. It is earnestly to be hoped that the municipality of New Orleans will take Dr. KING'S warning seriously to heart, and that in the short intervening period before the opening of the canal the necessary steps will be taken to remedy the existing insanitary conditions and especially to carry out a war of extermination against rats.

This is not the first warning that New Orleans has received of the plague danger, for two years ago, Surgeon J. H. WHITE, of the United States Public Health and Marine Hospital Service, drew attention to the grave insanitary conditions in the city and to the probable arrival of the infection from not far distant affected ports. As long ago as 1903 Sir PATRICK MANSON approached the subject from another aspect, that of the possible conveyance of yellow

[1] THE LANCET, vol. i., 1905, pp. 1530, 1597, 1726.

fever virus, in the form of infective stegomyiæ, on board ship through the canal from the well-known endemic area of the disease on the east of South and Central America, into the Pacific, and thence to the ports of India, China, or Japan. His views, which were fully set out in a paper [2] which he read before the Epidemiological Society in London, caused at the time some uneasiness and received the support of other eminent epidemiologists. Although a committee was appointed to draw up recommendations to meet the anticipated danger, and to make representations to our own and the United States Governments, we fear that ultimately the matter was allowed to drop. At the present time an International Sanitary Conference is sitting in Paris to discuss proposals for the purpose of amending the existing convention agreed upon by the Powers in 1903 with the object of preventing the spread of cholera, plague, and yellow fever. Official delegates from the United States and from nearly all the republics of South America, as well as from some Asiatic countries, have attended at Paris with the representatives of the Powers of Europe to discuss the best means for protecting all parts of the globe against the infections of these three exotic diseases. In the circumstances we think it is extremely probable that the attention of the delegates will be directed to the changed conditions which will be brought about by the completion of the Panama Canal and to the increased facilities which will be afforded for the conveyance of certain diseases along this new trade route. The matter will, no doubt, receive the most careful consideration, and the result will in all probability be included in the new International Sanitary Convention which will be submitted to the Powers for signature.

We may here refer to the sending of Major S. P. JAMES, I.M.S., on a deputation to study yellow fever in the endemic area in order to advise the Indian Government in regard to preventive measures. It is worthy of mention that under the direction of the medical experts appointed by the Isthmian Canal Commission a very great deal has been done to remove from that area the unwholesome conditions which for many years made the canal zone notorious for its unhealthiness.[3] At the present moment malaria and other tropical diseases, including yellow fever, have been controlled to a very large extent, and the region around the canal may now be said to be comparatively healthy for Europeans. Local efforts such as these have far-reaching effects, and while we admit the great benefits which the provisions of an International Sanitary Convention will confer upon those who become parties to it, we are of opinion that much can be done locally by individual efforts. Prophylaxis, like charity, should begin at home, and owners and occupiers, in addition to the local and central health authorities, have their parts to perform in trying to secure wholesome conditions of living for all by scrupulous cleanliness of persons and houses, protection of food- and water-supplies, the provision of proper drainage, excrement disposal and scavenging, and particularly the waging of war continually against dangerous insects and vermin of all kinds, with removal of every condition likely to favour their multiplication. Such measures, if properly carried out, not only assist in preventing the spread of exotic disease, but add much to the general health and comfort of the people; and perhaps they may, in their place, be regarded as being, on the whole, of more general utility than the rigid enforcement of restrictive quarantine, or the needless disinfection of articles of merchandise.

[2] The Relation of the Panama Canal to the Introduction of Yellow Fever into Asia, read on Feb. 25th, 1903, before the Epidemiological Society in London. See THE LANCET, March 7th, 1903, p. 658.

[3] THE LANCET, June 3rd, 1908, p. 1646.

Prehistoric Bones.

AT the present time our knowledge of prehistoric man is expanding rapidly. During the last few months several works have appeared in England which aim at giving the general reader a knowledge of this subject. Taking them in the order in which they have appeared, these are "Ancient Types of Man," by Professor A. KEITH, which we review in another column; "Ancient Hunters," by Professor SOLLAS; and "Prehistoric Man," by Dr. W. L. H. DUCKWORTH. We are glad to see that English anthropologists are awakening to the resources of their country, for of late years our eyes have been centred on France, believing that the history of fossil man could only be deciphered in that country or in the neighbouring parts of Central Europe. As matters now stand the appearances are in favour of England again taking her place in the van—a place which she held throughout the opening half of last century. The foundation of our knowledge of prehistoric man was laid by JOHN FRERE, who in 1797 discovered at Hoxne, on the border-line between Norfolk and Suffolk, well-worked flint implements of a primitive type under a deep layer of brick earth. Brick earth is regarded at the present time as a deposit left by the floods which followed *one* of the glacial periods. In such deposits are found remains of the mammoth, of the woolly rhinoceros, and many extinct and living forms of animals. We have now come to recognise that these flints found and described so long ago by JOHN FRERE belong to what may be called the Acheulean civilisation, because at St. Acheul, in the valley of the Somme, North-West France, these implements occur so abundantly. Now the French experts have shown that such implements were used by the ancient inhabitants of Europe who preceded Neanderthal man, whose flints belong to a later and really lower civilisation, known as the Mousterian. We naturally infer from these facts that there must have been a race of men living in England long before Neanderthal man, with his massive face, beetle-brows, and acromegalic characters, appeared in France.

It is in this connexion that the human skeleton discovered recently by Mr. J. REID MOIR near Ipswich becomes of importance and interest. Over the skeleton thus found there was only a layer of boulder clay four feet in thickness. Fortunately there were experts at hand to see the remains exhumed and to examine minutely the surrounding and overlying strata, and they are confident that the boulder clay was unbroken and undisturbed, a condition which precludes the possibility of a burial at this spot—at least since the boulder clay was laid down, after the great period of glaciation. We must therefore assume that the skeletal remains thus found are older

than the boulder clay, and we turn at once to see how this pre-boulder-clay man stands in relationship to the people who fashioned JOHN FRERE'S implements at Hoxne. Thanks to the labours of the British Association we have a very exact knowledge of this relationship. The Hoxne implements are much more recent than the boulder clay. Between the brick earth, under which these flint implements occur, and the boulder clay, there is found a series of strata, one of them containing remains of Arctic plants and a deeper one with temperate plants. If the boulder clay represents one period of glaciation and the Arctic plants another and much later cold period, then we see that between the time of the pre-boulder-clay man and that of the men of Hoxne there elapsed at least two glacial and one interglacial or temperate period. In the boulder clay and in the underlying glacial sands Mr. MOIR has found well-worked flints which may be regarded as the handiwork of the Ipswich race. He found worked flints at a much deeper or older horizon—namely, beneath the red-crag formation which marks the passage from the Tertiary to the Quarternary period—a point in time prior to the Glacial period. We have every reason, then, to anticipate the discovery of a pre-boulder-clay man, or, to use a common but an inexact term, pre-Glacial man. The skeletal remains thus discovered were examined by Professor KEITH. He found that all the characteristic features of the Neanderthal race were absent; the skeleton belonged to a tall man of the modern type. The brain capacity was comparatively low—namely, 1430 cubic centimetres (Neanderthal man had a capacity of 1600 cubic centimetres or more); the skull was rather flattened from above downwards, as is the case in Neanderthal man. The peculiar features of the skeleton lie in the bones of the leg. There is no crest or shin to the tibia; it is of a form not yet seen in ancient or modern races.

Until the Ipswich discovery was made—we are presuming that those concerned will be able to prove the geological age—the earliest human remains found in England were those from the 90-foot terrace of the Thames Valley, near Galley Hill, Kent.[1] The terrace is a remnant of the bed of the Thames; since it was laid down the river has excavated the wide valley below the level of that terrace. In the case of the Galley Hill skeleton there could be no question of burial; it lay beneath 8 feet of stratified sand and gravel. If the remains had been of the Neanderthal type they would have been at once accepted as genuine, but because they represented the modern type they were rejected by the majority of anthropologists. Yet the flints which are found in the upper terrace belong to a stage of evolution long prior to the Mousterian period which marks Neanderthal culture; they are even older than the Hoxne flints. We have again irrefutable evidence here that the modern type of man was in existence long before the Neanderthal man became extinct. The evolution of the modern type of man has to be sought for in a pre-Glacial period, or at an even earlier date in the earth's history. It will be thus seen that England again becomes a leading centre for tracing the later stages in the evolution of man. The geological formations in East Anglia are the most likely of any in Europe to yield convincing evidence. This is a sort of inquiry which medical men more than any are qualified to take a part in, for it is research which requires the greatest patience and care. The import of any discovery of human remains depends entirely upon being able to assign a date to them. Without such evidence they are almost valueless. In burials belonging to periods such as the Saxon, Roman, Bronze, or Neolithic, means of dating may be found by remains of the civilisation found with or over the remains. But in reality we know very little of the people of England during those periods. As regards earlier periods, the evidence becomes almost wholly geological. The age of the stratum—as determined by its position, and by the animal and plant remains, and the kind of flints found in it; the condition of the overlying strata—must all be minutely examined and recorded. The contents of each stratum must be kept separate and preserved. Only those who have paid attention to this kind of investigation know the amount of valuable evidence which has been destroyed through ignorance. Only the other day a human skeleton was found at a depth of 16 feet in stratified gravel; it was destroyed because the farmer feared that a coroner's inquest might be held. It is natural, in such circumstances as the possibility of an inquest being required, to send for a medical man, and we hope that every medical man who may be thus called to the scene will remember that to the expert eye extraordinary historical evidence may be revealed.

[1] THE LANCET, March 18th, 1911, p. 722.

Annotations.

"Ne quid nimis."

JANUARY AT HOME AND ABROAD.

THE weather continued mild and rainy in this country until January was about three weeks old, although the mildness was not so marked as during December and the rain was hardly so heavy and persistent. The change to a colder condition came rather suddenly, and the evil effect of the abrupt fall of temperature was considerably aggravated by the strength and penetrating power of the east and north-east winds which brought it about. During the earlier half of the month the thermometer continued to rise to about 50° F. with unusual frequency for the time of year, and frost, even on the grass, was seldom experienced at night. In the more northern parts of the kingdom there was a cold snap, with heavy snow, round about the 7th, and a good deal of snow accompanied the low temperature of the latter days of the month in the western and northern districts. Over the country generally the relative warmth of the nights, more than the warmth of the days, contributed to maintain the mean temperature of the month much above the ordinary level for January. This was especially true of the south and south-east of England. In the metropolitan area there were, until the 25th, only two or three nights with a minimum temperature (as recorded by the sheltered thermometer) below 32°, and in spite of the severe frosts of the end of the month the mean minimum temperature for the whole period was at least 2° above the average. Hampstead was the coldest of the metropolitan observing stations during the daytime, and Westminster the mildest, the former having a mean maximum temperature of 42·4° and the latter a mean of 45·1°. The nights, however, were slightly milder at

Hampstead than at the more outlying districts of Kew and Greenwich. The central district of Westminster was, as would have been expected, the mildest at night, its mean minimum temperature being 39°, or about 3° higher than at Kew and Greenwich. At Hampstead the thermometer remained below 40° during the whole 24 hours on eight days, while at Westminster a like occurrence was only recorded on four days and at Kew on five days. Very few days passed in any part of the kingdom without more or less rain (or snow). In London, regarded as a whole, there were as many as 22 days with a measurable quantity of rain, and the aggregate fall—nearly 3 inches at Kew and Greenwich, and between 3 and 4 inches at Westminster and Hampstead—was much in excess of the normal. A rainy month is occasionally a decidedly sunny one also, but it was not so in January. The sun was much in default both in the metropolis and in the country generally. In the City the total number of hours of bright sunshine was only five, and in Westminster nine; these figures are less than half the January average. The more outlying districts naturally had a better record, but even there the figure was only equal to about half of that usually recorded in January. Kew had 20 hours, Greenwich 27 hours, and Hampstead 29 hours. In London as a whole there were no less than 20 days without any bright sunshine. On the south coast of England there were also many days without sun, and the total for the month was only about 50 hours. At Paris, where also the weather was mostly mild and often wet, the sun only shone for 36 hours. In the southern countries of the continent the general state of the weather was hardly so bright as usual, although it was not cold for the time of the year. In Italy there was much rain, alternating with fair but not always bright weather, and on the Riviera the rain was unusually frequent. At Nice as many as 14 days brought more or less rain, and all of them were after the 10th. The total fall for the month was as much as 6·1 inches, or about twice as much as in London. In the matter of temperature, however, the Riviera had a great advantage over the warmest part of this country. Frost, except once or twice on the grass, was almost unknown, and the mean temperature of the afternoons exceeded 50°. At Nice it was 51°, and at some other places a little higher. At that resort, where the thermometer is apt to fall to a rather lower figure during the night than at most other places on the Riviera, the mean minimum was 40°, or about 4° above that in the London suburbs, and 1° above that at Westminster. On 22 days the sheltered thermometer rose to 50° or above, and on one (the 7th) touched 61°. In the south of Spain the weather was rarely at all cold, but rough winds and rain were experienced much more frequently, and at Malta and in Sicily the weather was also of an unsettled character, with somewhat sudden changes in temperature following a shift of the wind from the southward to the northward. Along the coast of Algeria a fairly uniform and high temperature was maintained, and although the wind was sometimes stormy and rain not very uncommon, the sun was never absent during long intervals. As a rule, the sheltered thermometer either rose to nearly 60° by the afternoon or went beyond it, and on a few occasions when the wind chanced to come from the southward it touched the 70° point. Switzerland and the central countries of Europe had somewhat varied weather, but taken as a whole it was not unseasonable. Severe frost was experienced during nearly half of the month, the cold being very intense in Germany and Austria. On many occasions the thermometer remained below 20° throughout the day, and fell to about 10° at night. Since February began, however, this record has been beaten in Germany, where the temperature has fallen below zero Fahrenheit.

ABDOMINAL PAIN AS A PREMONITORY SIGN OF DIABETIC COMA.

A CURIOUS premonitory symptom of diabetic coma is abdominal pain. Though mentioned in the text-books, it has not received much attention, and its pathogenesis is not well understood. It has received more attention in France than in this country. Jaccoud has described a "peritonitic form" of diabetic coma in which abdominal pain is the dominating symptom. Recently, at the Congress at Lyons, M. Marcel Labbé and M. Blum assigned a special importance to epigastric pain as a symptom. In the *Progrès Médical* of Dec. 2nd, M. Pierre Lereboullet has published an important paper confirming the great significance of epigastric pain as premonitory to diabetic coma. He relates two cases. A medical practitioner, aged 53 years, who had suffered from diabetes for a long time, was for some days so fatigued that he obtained a locum tenens, but there were no particular symptoms until the night of August 22nd, 1907, when he complained of severe pains in the epigastrium, slightly greater on the right side and radiating to the shoulder. The pains occurred in crises lasting some minutes, and were not accompanied by vomiting. In the morning M. Lereboullet saw him, and his first impression was that he was suffering from hepatic colic. But though the liver was slightly enlarged the region of the gall-bladder was not tender. The abdomen could scarcely be described as distended, and otherwise was negative. The intensity of the pains also suggested tabes, but there were no signs of this disease. But another symptom struck M. Lereboullet—Kussmaul's dyspnœa, with deep and difficult inspiration and sudden expiration, the patient nevertheless remaining in the dorsal decubitus position. The heart was normal and the pulse little accelerated. On bringing together the two symptoms, epigastric pain and dyspnœa, and the fact that the patient was a diabetic, M. Lereboullet feared the imminence of diabetic coma. Examination of the urine showed an abundance of sugar and Gerhardt's reaction. During the day, in spite of the administration of sodium bicarbonate in large doses, the pain persisted and the abdomen became tympanitic, and there was constipation. On the 24th the tympanites was increased, and the attacks of pain were still marked but less frequent. The pain was more diffuse. The temperature was subnormal and the patient became comatose. Death occurred some hours later, about 36 hours after the onset of the epigastric pain. In the second case M. Lereboullet saw in consultation a man, aged 60 years, in whom painful epigastric crises had suddenly appeared some hours previously. The abdomen was slightly distended and was tender only in the epigastrium. The temperature was normal and the pulse good. The patient had suffered from diabetes for a long time. The epigastralgia of the previous case caused M. Lereboullet to study the respiration which was dyspnœic, and he was inclined to think that the symptoms were premonitory of diabetic coma. Coma supervened and death occurred 11 hours after the onset. A long time ago Grube of Neuenahr described in diabetics a condition similar to the gastric crises of tabes with acetonuria and a chloroform-like smell in the breath, but terminating in recovery. His cases differed from those now described only in intensity. M. Lereboullet adopts the view that the pain is due to some auto-intoxication acting on the solar plexus. A similar pain has been described in uræmia and puerperal eclampsia. He points out the importance of recognising this pain as a premonitory sign of diabetic coma, for this enables the alkaline treatment to be adopted early. We may add that its recognition is important in another respect. In an annotation in THE LANCET of Nov. 27th, 1909, entitled "Abdominal Crises in Diabetes," we noticed a paper by two Melbourne observers, Mr. R. M. Downes and Dr. R. A.

O'Brien, in which an abdominal crisis occurred in two cases of diabetes, and suggested to several observers the necessity for abdominal operation. A well-nourished boy, aged 14 years, was admitted into the Melbourne Hospital in the early morning as a case of acute intestinal obstruction. At 6.30 A.M. on the previous day he vomited, and he seemed unwell during the rest of the day. Towards evening he complained of pain across the lower abdomen, and this increased up to the time of admission. For 36 hours neither fæces nor flatus had been passed, though he attempted to go to stool several times. During the day he vomited three or four times. About two hours before admission he became restless with a vacant expression. On admission he was only semi-conscious. He had suffered from diabetes for 18 months. The abdominal muscles were board-like. Mr. G. A. Syme was about to operate when the urine was found to contain much sugar and to give the ferric chloride reaction. The coma increased and death occurred on the following morning. At the necropsy the intestines were found normal. In the second case the glycosuria had disappeared at the time of the crisis, but the urine contained diacetic acid and a trace of acetone, which was attributed to intestinal obstruction. The moral is that the urine should be examined not only for sugar but for diacetic acid in all acute abdominal cases. It is noteworthy that while M. Lereboullet describes the abdominal pain as "épigastralgie," the Australian observers do not specially locate it in the epigastrium. Further, vomiting was present in both their cases, while the French writer noted its absence in his.

THE REHOUSING AT LIVERPOOL CRITICISED.

THE *Welldoer* is a monthly periodical which seeks to promote the organisation of charitable work in Liverpool, to awaken the public conscience in regard to the existing widespread distress, to criticise the management of local charities, and to deal with sociological questions generally If all this can be well done it will be very useful and good work, but the greatest care must be taken not to depreciate genuine endeavour. We have been favoured with an advance proof of an article that is about to appear on Liverpool rehousing, wherein it is suggested that about £1,000,000 have been spent on rehousing the Liverpool poor, and that the poor are not rehoused. We are told, "The slums have gone! Long live the slums!" This is a matter to which we have also given a good deal of attention, not only in London, in various parts of Europe, and in the United States, but likewise at Liverpool, and for the enterprise displayed in Liverpool we have expressed genuine admiration.[1] While congratulating the authorities at Liverpool for having placed their city in the forefront with regard to town planning and housing reform, we were never so sanguine as to imagine that they had abolished all their slums or that they had succeeded in satisfactorily rehousing all the poor people who were driven out of such slums as were abolished. But more care has been taken at Liverpool than is usually the case to admit only very poor people as tenants in the working-class dwellings built by the corporation. These tenements could easily be let at higher rents to a much better class of tenants, but to the great credit of the municipality of Liverpool they have considered the needs of public health and of the poor as of far greater importance than financial benefits. The article in the *Welldoer* admits that probably 50 per cent. of the dwellers of the ancient slums have been rehoused in the corporation buildings. If so, this is a higher proportion than obtains elsewhere; and to say further that these 50 per cent. are the *élite* of the dispossessed does not alter the fact. It shows that the problem is only half solved, and that this is perhaps the easier half; but something has been accomplished, be it only the easier half of so formidable a task.

[1] THE LANCET, June 18th (p. 1718) and July 2nd (p. 60), 1910.

THE DIAGNOSTIC VALUE OF ENLARGED LATERAL THORACIC GLANDS.

IN the *New York Medical Journal* of Dec. 9th, 1911, Dr. Morris Manges has discussed the diagnostic value of enlarged lateral thoracic glands, a point which has received little attention. In two cases of pulmonary growth he found small glands in the fourth and fifth intercostal spaces in the axillary line which on excision proved to be carcinomatous, and thus confirmed the diagnosis. This led him to investigate the subject. It may be remembered that the lateral thoracic lymphatics and glands follow the long thoracic vessels and convey the lymph from the lateral wall of the thorax, and that they communicate with the central group of axillary glands, which in turn empty into the supraclavicular glands. By anastomoses the lateral thoracic glands communicate with the subscapular, anterior thoracic, brachial, and mammary lymphatics. An exhaustive paper on enlargement of these glands has been published by von Zebrowski, who has found enlargement in 20 per cent. of all tuberculous patients and 2·5 per cent. of non-tuberculous.[1] In pulmonary or mediastinal conditions the lateral thoracic glands are seldom bigger than a pea or bean. This enlargement von Zebrowski explains in two ways. First, perforating lymphatics pass through the intercostal muscles and anastomose with the lymphatics of the costal pleura; when pleural adhesions exist there is also a communication with the pulmonary lymphatics. Another communication was worked out by Stephanis, who, by injections, discovered a retrograde path between the lateral thoracic glands and the posterior mediastinal glands through the medial intercostal lymphatics to the pleural lymphatics. Von Zebrowski states that there is a distinct relation between enlargement of the lateral thoracic glands and pulmonary tuberculosis. He found the enlargement usually on the side of the lung involved; it diminished with improvement of the pulmonary condition and sometimes disappeared with cure. Conversely the enlargement increased as the pulmonary condition became worse. He proved the presence of tuberculosis in the glands by microscopic examination. As tuberculosis is the commonest cause of the enlargement, its existence should cause the lungs to be repeatedly examined for early signs, which it may precede. Palpation of these glands should therefore be part of the routine examination of the chest. In this connexion the opinions of authorities with regard to axillary and cervical adenopathy is of interest. Sir William Osler states in his "Practice of Medicine": "Preceding the onset of pulmonary phthisis for months, or even for years, the lymph glands of the neck and axilla may be enlarged. These cases are by no means infrequent, and they are of importance because of the latency of the pulmonary lesions." The only writers besides von Lebrowski who specifically refer to enlargement of the lateral thoracic glands in tuberculosis are Hochsinger and De la Camp, who both regard this as positive evidence of bronchial or pulmonary tuberculosis in children, especially in infants, provided there is no inflammatory condition of the neighbouring skin. Dr. Manges has not found the glands so frequently enlarged as von Zebrowski claims. A routine examination has yielded only 25 cases in two years. In 4 cases pulmonary tuberculosis was present, and in all the enlargement was bilateral. Other conditions present were as follows: pulmonary and

[1] Deutsche Medizinische Wochenschrift, July 14th, 1910.

pleural neoplasms (5 cases; in all a gland was excised and examined; carcinoma was found in 2 and hyperplasia in the other 3); mediastinal neoplasm (1 case, microscopic examination showed only hyperplasia); carcinoma of breast (2 cases); carcinoma of liver (3 cases; all on right side; in 2 excised glands showed carcinoma); carcinoma of stomach (1 case with enlarged gland in fourth left intercostal space); carcinoma of skin (1 case); general carcinosis (1 case); lymphatic leukæmia (1 case); perihepatic abscess (1 case, an enlarged gland in the fifth space which disappeared after incision and drainage); Hanot's cirrhosis of liver (1 case). Dr. Manges concludes that while enlarged lateral thoracic glands are by no means frequent, they may at times give warning of pulmonary tuberculosis. They may also be of value in corroborating suspicions of malignant disease of the lung, pleura, posterior mediastinum, breast, or other distant organs. Enlargement does not necessarily denote either tuberculous or malignant disease, but may be due to hyperplasia: excision and microscopic examination are necessary to complete the proof.

OCCLUSION OF THE POSTERIOR INFERIOR CEREBELLAR ARTERY—A DEFINITE SYMPTOM-COMPLEX.

IN the *Albany Medical Annals* for October, 1911, is a valuable paper by Dr. Hermon C. Gordinier, of Troy, N.Y., on the occurrence of a very definite series of clinical symptoms from thrombosis or occlusion generally of the posterior inferior cerebellar artery. These are so characteristic that it is curious so few instances of the condition have been put on record. Five cases have been reported in America, exclusive of three published in the present paper, one in England,[1] two in France, and 16 in Germany. It may be recalled that the posterior inferior cerebellar arteries are the longest branches of the vertebral arteries. They arise from the latter about 2 centimetres below the formation of the basilar artery, and pass outwards and backwards, winding round the side of the medulla oblongata between the hypoglossal and pneumogastric nerve roots; they then leave the side of the medulla along the inferior cerebellar peduncle and so reach the vallecula of the cerebellum, on the under surface of which they anastomose with the middle and superior cerebellar arteries. Occlusion of the posterior inferior cerebellar artery, owing to this free anastomosis, concerns mainly, if not solely, the small terminal branches which that vessel gives to the medulla as it winds round it. These small terminal vessels supply a sharply limited area on the lateral aspect of the medulla, which includes the formatio reticularis and restiform body, and is bounded by the olive anteriorly. Its vertical extent is, roughly speaking, from the middle of the hypoglossal nucleus to about the level where the restiform body passes into the cerebellum. The main structures implicated in this area are the spino-cerebellar tracts of Gowers and Flechsig; the descending roots of the fifth cranial nerve and perhaps also of the eighth; olivo-cerebellar fibres; the intramedullary parts of the ninth and tenth cranial nerves; and certain important vasomotor and sympathetic fibres running in the formatio reticularis. Occasionally the auditory nuclei and nerves may be involved, but not the pyramidal tract, the seventh or sixth cranial nerves, nor the fillet, unless the thrombus extends into the vertebral artery. All these structures are implicated by a lesion the cross-section of which is less than that of a threepenny-piece. The clinical symptoms, in a pure case, are as follows: sudden onset without loss or disturbance of consciousness; crossed analgesia and loss of temperature sense—face on same side as lesion, body, arm, and leg on side opposite to lesion (face from implication of the descending root of the fifth, opposite side of body from implication of spino-thalamic sensory fibres in the formatio reticularis); no impairment of touch, or of localisation (the median fillet intact); ataxia in limbs on same side as lesion (involvement of spino-cerebellar tracts and olivo-cerebellar fibres); tendency to fall to the side of the lesion (restiform body); vertigo, sense of rotation, giddiness, vomiting (vestibular and vagus nerves); paralysis of the palate, vocal cord, and muscles of deglutition on the same side as the lesion, with impaired sensation of pharynx (ninth and tenth cranial nerves); involvement of cervical sympathetic on same side as lesion—enophthalmos, unilateral sweating, ptosis, small pupil—(central sympathetic tracts in formatio reticularis). Dr. Gordinier describes three excellent cases of this remarkable affection, which presents a clear and definite syndrome, easily recognisable clinically and pathologically. The multiplicity of the symptoms in association with the small region affected constitutes the striking feature of the syndrome. Any case which shows a crossed anæsthesia (pain and temperature) and unilateral paralysis of palate and vocal cord should always suggest a lesion in the distribution of the posterior inferior cerebellar artery in its medullary part, and when the other symptoms enumerated above—e.g., unilateral ataxia and unilateral involvement of the cervical sympathetic, are present, the exact site of the disease can be delimited with conspicuous ease and certainty.

[1] S. A. K. Wilson: A Case of Thrombosis of the Left Posterior Inferior Cerebellar Artery. Proceedings of the Royal Society of Medicine, vol. ii., February, 1909 (Neurological Section).

THE MINISTRATIONS OF THE EARTHWORM.

AMONGST other interesting articles published in the January number of *Science Progress* is one by J. Newton Friend, Ph.D., D.Sc., on the aeration of the soil by earthworms. As the writer points out, the chief activity of worms lies in their power of excreting acids in their castings, of exhaling carbon dioxide, and of aerating the soil both by mechanical and by chemical means. He has made a number of observations on these points which show that the rôle of the earthworm amply repays study. Worms effect the aeration of the soil in a variety of ways. In burrowing through the soil the worms render it more porous and permeable to gases, not merely by virtue of the air spaces formed, but by reason of the fact that the soil is thus continually kept in gentle motion. Again, the soil passing through the bodies of worms is excreted in a finer condition, being ground by attrition through the intestines. This increased fineness up to a certain limit means increased area, and hence greater susceptibility to the action of gases; beyond this limit the particles begin to cling together, and a proportionately less porous mass results more resembling clay than ordinary soil. It was Darwin who estimated that no fewer than 15 tons of soil annually pass through the bodies of worms for every acre. Further, worms breathe in oxygen and exhale carbon dioxide, and the latter gas, as is well known, readily dissolves in water, forming an acid solution which will render alkaline earths and metallic oxides—e.g., iron—soluble. The amount of carbonic acid gas exhaled in the course of a year by an active worm-inhabited acre would amount to 29·6 kilogrammes, or 15,000 litres. The interchange of oxygen and carbonic acid gas effected by worms is thus considerable. Worms materially aid in producing soluble salts of iron in the soil when other agencies (e.g., dilute mineral acids) fail. The iron is eventually given back to the soil in a more soluble condition, and presumably in one which can be directly absorbed by plant roots. As Dr. Friend points out,

worms probably have an important ministry to perform in the soil, and it is to be hoped that further researches in this direction will be undertaken, for the habits and distribution of the earthworm appear to have received little attention since the days of Darwin, or with the aid of modern scientific apparatus.

THE SPIROCHÆTA GALLINARUM.

THE study of the life-history of the malarial parasite was greatly assisted in its early stages by investigations made on allied organisms occurring in the bird. The research on the life-history of the spirochæta gallinarum conducted by Mr. E. Hindle, one of the Beit Fellows, is similarly of value, since the comparative study of this organism may serve to fill lacunæ in our knowledge of the allied spirillum of African tick-fever. Mr. Hindle has brought forward evidence making it almost certain that longitudinal division of the organism does not occur, and explains the deceptive appearances which have led to that belief. The work of previous observers on the formation of coccoid bodies at the crisis of the disease and as the result of drug treatment was confirmed, and Mr. Hindle agrees with Leishman that transmission of the disease is not caused by the direct bite, but by the infection of the bite with the coccoid bodies contained in the coxal fluid and excrement. The coccoid bodies mentioned above do not usually develop in the fowl, but similar bodies derived from spirochætæ which have been ingested by, and have bored their way into, the cells of the various organs of the tick will, when they gain access to the blood of the fowl, develop into the ordinary spirochæta form. This last step has, however, not been followed. Experiments suggested that possibly it is the coxal fluid which enables the coccoid bodies derived from the tick to develop into spirilla in the fowl. The development of the coccoid bodies into spirochætæ and fusiform bacilli has been followed in the tick and in the eggs laid by the infected ticks, and it was shown that larvæ hatched from these eggs could infect the fowl when fed upon them. Experiments appeared to show that in order that the coccoid bodies may develop into spirochætæ they must escape from the cells into a fluid medium, which in the tick is either the cœlomic fluid or the contents of the gut.

MESO-THORIUM IN MEDICINE.

AT the conclusion of his lecture before the members of the Royal Institution on Feb. 2nd on the Vital Effects of Radium and Other Rays, Sir James Mackenzie Davidson dwelt upon the possibility of other radio-active substances than radium proving of value in treatment. Uranium, thorium, and actinium, he said, had all been suggested in this connexion, but they were too feebly radio-active to possess any real efficacy. The discovery by Otto Hahn of the substance known as meso-thorium, however, had aroused considerable expectation. Meso-thorium, which was one of the disintegration products of thorium, and was found in the course of an attempt to separate radio-thorium directly from thorium, emitted the same rays as radium, and weight for weight was more powerful. As the supply of thorium was much larger than that of pitchblende, from which radium was obtained, they might hope to have a larger supply of meso-thorium than of radium at the general disposal. It would cost much less, but, on the other hand, it had a short life of only about seven years. The lecturer produced a tube of meso-thorium, which, he said, was equivalent to 10 milligrammes of pure radium. He had applied this to a chronic patch of X ray dermatitis on his hand, and a reaction followed 15 days after application. This latent period was rather longer than in the case of a similar application of radium, which he had used successfully in the treatment of his X ray burns, but the result with the meso-thorium promised to be equally favourable. As to radium-therapy, the lecturer said that in the condition of the eyelids known as "spring catarrh" and in X ray dermatitis he had proved it to have a value which no other method of treatment apparently possessed. Radium also had a destructive influence upon large rapidly-growing tumours like sarcoma, which could be subverted by the method of burying tubes within them, thus furnishing another illustration of the fact that radium, like other rays, concentrated its attack upon the young and most rapidly-growing cells. That was probably the reason why sarcomas were so vulnerable to attack when compared with carcinomas, which were of slower growth. But in spite of its greater potency and convenience in application, the same thing had to be said of radium as he had already said of the X rays, that it could not in any sense be looked upon as a cure for cancerous growths of large size. It would inhibit the growth of such tumours and destroy them locally, but rarely completely, and it did nothing to prevent the usual secondary deposits. With regard to the emanation of radium, he produced a standard which Sir William Ramsay had given him, containing in a little bottle 1/40,000th of a milligramme of pure radium. Sir William Ramsay's standard is apparently intended to replace the Maché unit.

TRACHOMA BODIES.

ANY investigation, even of a negative character, which serves to throw light on the cause of the infectious character of so troublesome a disease as trachoma is to be welcomed. The bacteriology of trachoma is at present a series of negations, and this is especially unfortunate, as the disease has such ill-defined clinical boundaries that the discovery of the specific cause would alone render possible any real advance in its study. Secondary infections are so frequent in this disease that not unnaturally numerous organisms have been credited with its causation, whose claims in this respect have subsequently been shown to rest on no substantial basis. One of these, the trachoma body described by Halberstaedter and Prowazek, has claims which are difficult to disprove. These bodies were regarded by their discoverers as being true parasites belonging to a new group of intracellular organisms—the chlamydozoa. Their non-specific character has, however, been shown by finding them in cases other than trachoma, and even in very slightly inflamed or normal conjunctivæ. A recent paper by Dr. S. B. Wolbach and Dr. S. Hanford McKee carries the matter further by furnishing a probable explanation of the true nature of these trachoma bodies, which, as the authors show, occur only in those portions of the conjunctival epithelium which are the most injured, and where typical mucus-secreting cells are absent. A careful study of the bodies by smear preparations and in sections, together with comparative studies of other mucus-secreting surfaces, have led these investigators to the conclusion that the trachoma bodies represent mucous secretion under pathological conditions, and consequently that their parasitic nature is disproved.

UTERINE CANCER AND ITS EARLY DIAGNOSIS: ORIGINAL RESEARCH FROM SUBJECTIVE SYMPTOMS.

Dr. E. Atlee, in a recent paper on the Early Diagnosis of Uterine Cancer, points out that all clinicians realise the importance of obtaining the earliest possible knowledge from subjective symptoms of cancer formation. He maintains that the victims of uterine cancer are frequently women of excessive weight, but the scientific physician has not as yet taken into consideration the possibility that the feature of weight may be a help in connexion with an early diagnosis of the disease. The point of importance, according to the author of this paper, is not the actual weight of

the individual, but the comparative weight of that individual at different periods. In the furtherance of this view 24 cases have been carefully studied, and the testimony points almost conclusively one way—viz., that the incipient stage of cancer of the uterus is coincident with the maximum weight of the woman irrespective of age, and that the duration of this incipient stage may vary as does that of the recognised stage of the disease. It is not maintained that the existence of the maximum weight is alone sufficient to determine the presence of uterine cancer, but associated with the history of maximum weight will be found one of unexcelled health and strength. A further point insisted on is that this maximum weight, health, and strength have been attained rapidly subsequent to previous imperfect health conditions. A chart is given of what Dr. Atlee believes to be the probable characteristic phenomenon in the progress of cancer cases covering a period of 12 years or more. In this chart a period of poor or indifferent health is represented as followed by a period of rapid return to perfect health and strength, with maximum weight, and then the occurrence of suspected and recognised cancer. Curves are also given for uterine diseases other than cancer, and for cancerous diseases in women other than in the uterus, and in both these conditions the curve is represented as being one mainly of a continued period of impaired health. Lastly, a table is given to show that the maximum weight of healthy women generally occurs at an age other than that at which the greatest incidence of cancer of the uterus occurs. Dr. Atlee is appealing to physicians to fill up tables of questions in order to extend his researches so as to obtain a larger series of cases. The idea is a novel one, and, of course, a very much larger amount of material is necessary than the 24 cases on which the author appears to rest his hypothesis. And we are not told how the curves have been constructed; they appear merely to represent the author's impressions. It seems to us unlikely that further investigations will corroborate the suggestion put forward by Dr. Atlee.

THE VISITATION OF THE SICK.[1]

IN mediæval times the sick man, with the sense of humour which characterised mediæval religion, added some private devotions of his own to the official services for the sick prescribed by the Church. That is to say, before he took his medicines he was accustomed to repeat Psalms LV. and LVIII. in the Vulgate, which correspond to LVI. and LIX. in our Book of Common Prayer. In the former of these psalms the patient declares that he will not fear what flesh can do unto him, and in the second he prays to be delivered from the bloodthirsty men, "de viris sanguinum salva me." Whether these aspirations were used by the patient in regard to his parish priest or his doctor, or merely symbolically in reference to the powers of evil who were then credited with bringing sickness, cannot now be definitely stated, but it seems that the mediæval patient had qualms as to both his spiritual and his bodily advisers. Sickness is ever with us, and there is as much need now, as in former days, for wise coöperation between the physicians both of the soul and of the body. The little book now before us contains much sound practical common sense within the 50 pages which are allotted to instruction by the medical man and the cleric respectively. Each little treatise may well be studied by the members of the other profession, and we are glad to see that both authors recognise a fact that is sometimes in danger of being forgotten by both medical men and the clergy—namely, that a patient, whether he be sick in soul or body, or both, is first and foremost a man and not merely "a case." Sir Dyce Duckworth in his preface expresses an "entire concurrence with the opinions set forth," with which we are in general agreement.

[1] Practical Hints for Pastoral Work among the Sick. By H. Gordon Mackenzie, M.A. Oxon., M.B. Durh., and Notes and Suggestions on Visiting the Sick, together with Short Service and Private Devotions for the Sick, compiled by the Rev. Archibald O. Hayes, M.A., Hospitaller of St. Thomas's Hospital. With an Introduction by Sir Dyce Duckworth, Bart., M.D. Edin. LL.D. London: Kegan Paul, Trench, Trübner, and Co., Limited. 1911. Pp. 80.

OUTBREAK OF TYPHOID FEVER DUE TO A BACILLUS CARRIER OF 46 YEARS' STANDING.

IN the *Journal of the American Medical Association* of Jan. 6th Dr. C. Bolduan, acting assistant to the general medical officer, and Mr. W. C. Noble, bacteriologist, department of health, city of New York, have reported an outbreak of typhoid fever due to a bacillus carrier under remarkable conditions. Towards the end of August, 1909, a sudden increase in the number of cases of typhoid fever reported from the boroughs of Manhattan and Bronx attracted attention. A certain milk-supply was common to all and was cut off on Sept. 1st. However, additional cases were reported in diminished number all through September, making a total of several hundred. The cases reported in September were ascribed to secondary infection in the city. On tracing the milk-supply back to its origin, it was found to come from the village of Camden. The former manager of the creamery there was suffering from typhoid fever, but judging from the date of onset was one of the victims of the infection and not its cause. Further inquiry showed that there had been undue prevalence of typhoid fever at Camden for years. On one dairy-farm there had recently been a case of typhoid fever. The dairyman was born in Wisconsin in 1848 and had typhoid fever there in 1863 or 1864. He went to Camden in 1866 and began to sell milk in 1873. In 1878 his two-year-old daughter had enteric fever, and during her convalescence her grandmother, who had nursed her, became very ill and was delirious for three weeks. The disease was called "gastric fever." In 1886 a man working on the farm was very ill with fever for several weeks, which was diagnosed "gastric fever." In 1893 another daughter was ill in the autumn and typhoid fever was diagnosed. In 1897 still another daughter had what was called "intermittent fever." In 1893 another worker on the farm had typhoid fever. In 1909 still another worker died from the disease. Such a history suggested a bacillus carrier, and specimens of fæces were obtained from the whole household. Those of the dairyman gave an almost pure culture of typhoid bacilli on Conradi-Drigalski plates. Subsequent examinations made after a month and a year gave similar results. This dairyman was a better-class farmer who kept his home and his dairy much cleaner than the average dairyman. Moreover, he was personally clean. The case is important, as it shows that milk may be infected by a typhoid carrier, though he be cleanly in his habits.

THE first of the three Lettsomian lectures on Glycosuria was delivered by Dr. A. E. Garrod before the Medical Society of London on Feb. 5th. The second and third lectures will be delivered on Feb. 19th and March 4th respectively. The anniversary dinner of the society will be held on March 6th, at 7.30 P.M., at the Whitehall Rooms, Hôtel Metropole.

THE Harben lectures of the Royal Institute of Public Health will be delivered in the lecture-room of the institute on Feb. 26th, 27th, and 29th, at 6 P.M., by Professor Simon Flexner (director of the Rockefeller Institute for Medical Research, New York), the subject being "The Local Specific Treatment of Infections."

AN EXAMINATION OF THE MEDICAL PROVISIONS OF THE NATIONAL INSURANCE ACT.

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I.

UNDER any circumstances the National Insurance Act is bound to have a far-reaching effect upon the future of medicine in the British Isles. If it comes into operation in its present form, it will affect at once and directly more than 13,000,000 people. If for any reason some of its provisions should be found unworkable, sooner or later they will be succeeded by other efforts of the Legislature to bring about the result desired. For the Act must not be looked upon as an isolated step, but as the culmination of a movement for the provision of better medical attendance and treatment among the working-classes which has been growing for years. In its general principles it has received the assent of both the great political parties of the State, and the responsibility therefore of carrying it, or an analogous measure, to a successful issue becomes a national one. It behoves the medical profession accordingly not to commit itself to a line of action definitely hostile to the Act until its provisions and their probable effects have received the minutest consideration. Further, the possibility of the introduction of alternative schemes must constantly be kept in mind. It might be better to "bear those ills we have, than fly to others that we know not of."

It is not necessary here to emphasise the deplorable lack of adequate medical attendance and treatment among the working classes. Its evils have been pointed out by public and private inquiries, and recently both the Majority and Minority Reports of the Royal Commission on the Poor-law stated that ill-health was a fruitful source of destitution. The conditions under which medical attendance is given are frequently demoralising both to patient and doctor. The medical profession would be the first to admit that something must be done, and the Insurance Act is at once a recognition by the State of its responsibility and an attempt to discharge its obligations. It would be waste of time now to discuss alternative schemes, but one which has been mentioned, though not by any responsible person, deserves passing consideration. It has been suggested that medical officers should be appointed at fixed salaries to attend insured persons in each district, and it is calculated that nearly 7000 could be so appointed at salaries of £600 a year each, for the amount it is now proposed to spend on medical benefit. If such a scheme were seriously brought forward united medical action would be more difficult to secure than at present, and hostility to it might be ascribed by public opinion to regard for vested interests.

One other general effect must be mentioned. The Act establishes a closer relationship between the State and the medical profession than has ever existed before. If the State is going to draw so largely upon the services of the medical profession it becomes more than ever its duty to take note of its recommendations and to safeguard it in the discharge of its services. Public opinion will demand that this be done. In the past the profession has had just cause to complain of the treatment it has received at the hands of the Legislature. Important matters, as, for example, the reform of the laws relating to coroners and inquests, or to the certification of death, have been postponed indefinitely. Measures such as the Midwives Act and the Notification of Births Act have imposed fresh duties upon medical men for wholly inadequate remuneration or even none at all. An Act to prevent the abuse of medical titles, and restrict the operations of herbalists, patent medicine vendors, and quacks of all sorts is long overdue. In its new position the medical profession will have an increased right to demand the remedying of these grievances, and the organisation which the Insurance Act has led to will give it added power to enforce this right.

In the opinion of the writer it is open to question whether the Insurance Act has yet received adequate and unbiassed consideration from many medical men. Our political system almost necessarily entails that a person approaches such a measure prejudiced either for or against it according to the party to which he belongs. Condemnation of the Act as "socialistic," even if justified, merely tends to obscure the purely medical points at issue and lends colour to the assertion that political bias is being displayed. The time which elapsed between the introduction of the Bill and its passage into law did not permit of full determination being made of the effects of the scheme, for many of these depended upon the collection and collation of statistics. Finally, few doctors can have had leisure to study in detail for themselves a complex Act of 83 Sections and 5 Schedules, which underwent frequent drastic changes during its progress.

Some Errors.

A word of caution is required as to the necessity for meticulous accuracy in statements made to illustrate the grievances of the medical profession. Success in any campaign depends largely upon the support of public opinion, and this will not be won if assertions are made which can be easily refuted or are based upon unjustifiable assumptions. This has sometimes been the case, and the following are cited as instances of the errors medical men are liable to make under the influence of haste or indignation.

In the *Times* of Jan. 16th a medical man quoted and amplified figures which tended to show that, on the average, each doctor who works under the Act will receive in respect of insured persons "the magnificent gross sum" of £253 per annum, "from which one-third to two-thirds, according to locality, will have to be deducted for horses, grooms, motors, chauffeurs, rent of consulting-rooms, rates, and in most cases cost of drugs and dispensing—and this for men whose professional education has cost from £1000 to £2000 ..... and whose goodwills have cost on an average £1000 to £2000." He wrote as though £253 were to be the total average medical income of the future, whereas it will be derived from less than one-third of the community, and that roughly the poorest third. The figures are probably not correct, but from his argument it follows that were the whole population of Great Britain, instead only of 13,000,000, insured at the same rate, the average medical income would be nearly £800 per annum, a position not so distressing as to excite much lay sympathy.

A frequent fallacy is to compare insured persons with patients. Instances of this occur in the leading article of the *Times* of Dec. 29th, 1911, and in a letter from a medical man in the same journal of Jan. 17th. In the latter case the writer states that 41 per cent. of his private patients will become contract patients under the Act. He finds that now he sees each of these on the average five times in the year, and receives 10*s.* 6*d.* per individual. Deducting 1*s.* 6*d.* for medicines he will in the future, he says, receive 4*s.* 6*d.* from each of instead of 9*s.* He concludes, therefore, that he will lose one-fifth of his income. The writer forgets that the names on his books are only those of patients—i.e., persons who have actually received medical attendance within the period under review. Under the Act he will be paid in respect of a larger number of insured persons some of whom will not consult him at all, and others much less than five times. He has probably no means of computing what this number will be. As regards attendances, if the average number per patient is five, the average number per insured person is likely to be appreciably less.

In the *British Medical Journal* of Jan. 13th is an editorial paragraph headed "Payment under the Insurance Act," in which certain figures are quoted from statements published by medical men in support of the demand for a higher rate of remuneration. The first of these is a long detailed statement from two medical practitioners which appeared in the *British Medical Journal* of May 27th, 1911. Careful study of this document shows that the conclusions finally drawn anticipating substantial loss under the Act are based upon certain untenable assumptions. Further, the figures given for actual attendances upon all classes during four weeks do not support these conclusions. But in any case the statement is of little value, since it was compiled before the Act was amended. Allowance would now have to be made for the effect of such changes as the imposition of an income-limit for voluntary contributions, &c. The second quotation is from a letter which appeared in the *British Medical Journal* of Dec. 2nd, 1911, wherein a doctor anticipates that he will be required to attend each insured person 6½ times, at an average fee of about 7*d.* an

attendance. These figures, however, are based upon those of a provident dispensary in which all the lives are unselected, and the bulk of the members women and children, and therefore not comparable to the insured population. The paragraph concludes with a statement that "a medical practitioner whose patients mainly consist of insured persons will have to work uninterruptedly for at least 10 hours a day if he wishes to make a net income of even as little as £250 a year." Now this sum will be earned (at 4*s*. 6*d*. a head) if he has 1100 insured persons on his books. If each of these is seen five times during the year, and it will be shown later that the average number of attendances is likely to be less than this, it would be necessary to give on the average 15 attendances a day. It cannot be seriously contended that this would entail 10 hours' uninterrupted work, especially as no time would be spent in dispensing.

Statements such as the above place weapons in the hands of adversaries.

Points to be Considered.

The points about the Insurance Act especially requiring consideration by medical men are the economic position of the beneficiaries, the income limit, the degree of control over administration the medical profession will possess, the work to be done, the remuneration, and the effect upon the progress of medical science. Some of these are covered by the Act itself, others depend largely upon the regulations to be issued by the Commissioners.

The Beneficiaries.

Who will come under the scheme? This is a most vexed question and goes to the root of the medical grievances. The most detailed statement as to the persons anticipated to become insured is to be found in the actuaries' report, and in the appendix to the report are given the numbers engaged in each kind of occupation. It is a valuable and interesting document, but of course some of the conclusions are based upon estimates or assumptions which may in practice prove to be quite ill-founded. They are quoted provisionally in the absence of more reliable figures.

Compulsory contributors.—With certain scheduled exceptions the Act requires all employed manual workers, and all persons otherwise employed whose income from all sources is below £160, to become insured. The most important exceptions are persons employed under the Crown or public authorities, clerks and other salaried officials in railway and other companies, who are already insured for benefits not less favourable than those given by the Act, and school teachers who come under Superannuation Acts. A glance at the actuaries' reports shows that the great bulk of persons in this class will be working men and women. The principal occupations with the numbers engaged therein, according to the Census of 1901, excluding Ireland, are:—

	Employed.	Working on own account.
Domestic offices or services	2,196,147	..... —
Conveyance by rail, road, sea, docks, &c.	1,385,413	 29,460
Agriculture	1,299,347	 29,172
Textiles	1,282,765	 36,043
Building	1,060,421	 52,496
Mines and quarries	913,101	 13,215
Dress	902,411	 290,131

There are nearly half-a-million general labourers, but the above figures will certainly include practically all good-class artisans, many of whom are accustomed to paying remunerative medical bills. There are also nearly 400,000 persons in positions generally looked upon as better than that of the working man, the most numerous being business and law clerks, commercial travellers, and sick-nurses. Compulsory contributors will endeavour in the first instance to become members of approved societies, and these societies have full power to make their own rules for admission of members, with the one proviso that they may not refuse a person solely on the ground of age. Compulsory contributors who are refused admission become

Deposit contributors.—It is important here to quote the Act. They are defined as "insured persons ..... who have not joined an approved society within the prescribed time, or who, having been members of an approved society, have been expelled or have resigned therefrom and have not within the prescribed time joined another approved society." It is commonly assumed that members of approved societies will be all picked lives, and deposit contributors bad lives. While this will, no doubt, be in the main true, it will be noticed that it is not the statutory distinction. The Act says nothing about good or bad lives. An approved society may if it chooses admit members without any medical examination at all; it may be quite worth while for some of them to do so. Equally, a person compulsorily insured may fail to become a member of an approved society for reasons other than ill-health. Bad lives may therefore be found among members of approved societies, and good lives among deposit contributors. This is of importance in view of the statement made by the Chancellor of the Exchequer at the Special Representative meeting of the British Medical Association on June 1st, 1911. According to the *British Medical Journal Supplement*, of June 3rd, he said: "There is only one thing I would say about the Post Office contributor, and that is that the 6*s*. basis does not come in in that case. You certainly cannot be expected to take people who are already ill at that rate. The reason we thought the 6*s*. was fair was that you will be getting it for people who were well as well as those who were ill. When you come to the Post Office contributors they would be people who are already ill, and we certainly never contemplated that the 6*s*. should be for those." Now while it is true that this was said *à propos* of deposit contributors, the spirit of the promise clearly is that bad lives shall be treated at a higher rate. As quality of life is not the criterion distinguishing between deposit and other contributors, presumably effect will be given to the promise by means of the regulations which the Commissioners are to issue. If this interpretation is correct, the medical profession will have the advantage of a voice in the framing and carrying out of these regulations which it would not have had if the distinction had depended upon the rules of approved societies. To be able to insist upon a medical examination for all insured persons, irrespective of class, before admission to medical benefit at ordinary rates would be a right of considerable value.

Voluntary contributors.—These are persons not employed within the meaning of the Act, who either (*a*) are engaged in some regular occupation and are wholly or mainly dependent for their livelihood upon the earnings derived by them from that occupation, provided that their total income from all sources does not exceed £160 per annum, or (*b*) have been insured persons for a period of five years or upwards. In the latter case the income-limit does not apply. Under this section it will eventually be possible for persons to derive benefits from the Act who, though starting poor, have become wealthy since they first began to contribute.

The actuaries estimate that the number of persons who will become voluntary contributors, excluding Ireland, is about 616,000, or less than 5 per cent. of the total. Medical men fear that many of their best paying lower middle-class patients will take advantage of these provisions. It is very difficult to determine who will come in, but in making an estimate certain checks in addition to those enumerated above must be borne in mind. In the first place, voluntary contributors have not only to pay their own contributions but also the amount which would have been paid by their employers had they been employed within the meaning of the Act. Secondly, contributors over the age of 45 (and others who fail to join within the first six months) have to pay a higher contribution in accordance with tables to be prepared by the Insurance Commissioners. Thirdly, persons wishing to become voluntary contributors who are refused by approved societies cannot become deposit contributors.[1] They drop out of the scheme altogether. As probably the most frequent ground of such refusal will be ill-health, it means that the worst lives among such persons, and those therefore most remunerative from the medical point of view, must still remain private patients.

The terms of admission to insurance at least are rigidly defined in the Act, and whatever the inducements it may hold out to persons to obtain medical treatment at contract rates, though they can well afford to pay doctors' bills, it is none the less possible that it may check this same abuse in other directions. For the grievance is no new one. It has been a sore point with the profession for a long time that persons in good social position obtain medical attendance through friendly societies. Now some of such persons

[1] This view has been challenged, but I cannot otherwise interpret Sections 1 and 42 of the Act.

at least will be ineligible for insurance in the future, and must perforce attend a doctor privately.

The Income-Limit.

The foregoing considerations apply to eligibility for insurance, but it does not necessarily follow that all insured persons will receive medical treatment at a fixed capitation or other fee. Section 15 (3) provides that—

> The regulations made by the Insurance Commissioners shall authorise the Insurance Committee by which medical benefit is administered to require any persons whose income exceeds a limit to be fixed by the Committee, and to allow any other persons, in lieu of receiving medical benefit under such arrangements as aforesaid, to make their own arrangements for receiving medical attendance and treatment (including medicines and appliances), and in such case the Committee shall, subject to the regulations, contribute from the funds out of which medical benefit is payable towards the cost of medicine, attendance, and treatment (including medicines and appliances) for such persons sums not exceeding in the aggregate the amounts which the Committee would otherwise have expended in providing medical benefit for them.

It is said that this provision is of little value for the reason that it can only be put into force by the Insurance Committees, and that on these the medical profession will have small representation. This aspect of the matter will be considered under the heading of "control of medical benefit." Assuming for the moment that it will be effective, it is obviously a valuable means of checking abuse. For not only will the persons excluded be required to make their own own arrangements, but they will be in a better position to do so inasmuch as they will still receive medical benefit in the form of a sum of money.

The point which in the opinion of the writer is open to question is the advisability of the profession insisting upon a specified income-limit being applied to the whole country by an amending Act; or of local groups of medical men declining to have anything to do with the Act until the Insurance Committees have fixed income-limits. In the first place the profession is not united as to what the amount of income should be. £104 a year has been agreed upon as a compromise, but many doctors think this too high. Further, a man's income is not a satisfactory test of his ability to pay for medical attendance. A single man with 30*s.* a week may be much better off than one with £2 a week who has a wife and family to support. Again, owing to variations in the rates of wages and prices of necessities an income-limit which would be equitable in one district would not necessarily be so in another. By leaving the matter to be determined independently in each locality allowance can be made for varying conditions. Nor is there anything in the Act to prevent two or more income-limits prevailing in one district, income-limits, for example, varying on an ascending scale with the number of a man's dependents. In some localities, too, the medical men might be willing to waive the income-limit or consent to a higher income-limit, in return for an increased capitation fee all round or some other concession. Such details could not be dealt with in an Act of Parliament. In this and other matters much will depend upon the regulations which the Commissioners will issue. Under these circumstances is not the *non-possumus* attitude a little premature? There is no need to come to a decision at once.

The next step presumably is the appointment of the Advisory Committee. Promise has been given that the profession shall have a voice in the appointment of the medical members of the Committee, who must be general practitioners of experience. The profession will thus be able to assist in framing the regulations, without in any way committing itself to working under the Act.

ROYAL COLLEGE OF SURGEONS OF ENGLAND.

MEETING OF COUNCIL.

AN ordinary meeting of the Council was held on Feb. 1st, Mr. RICKMAN J. GODLEE, the President, being in the chair.

The SECRETARY reported the death, on Jan. 24th, of Sir Henry Trentham Butlin, Bart., member of the Council and Past-President.

The following vote of condolence was passed:—

> The Council hereby record their deep regret at the death of their colleague, Sir Henry Trentham Butlin, Bart., for whom they entertained the warmest feelings of personal friendship, and they desire to express their very sincere sympathy with Lady Butlin and the other members of the family in their bereavement. The Council do also record their appreciation of the distinction and ability with which Sir Henry Butlin fulfilled the duties of President of the College and member of the Council and their grateful sense of the many services rendered by him to the College and the medical profession. The Council believe that no member of the profession more fully enjoyed the confidence and esteem of his colleagues, and his devotion to duty in failing health and increasing infirmity will be treasured by them as a priceless example of courage and unselfishness. For these reasons, as well as for his admirable skill in practice, they are assured that his name will always be held in honour and kindly remembrance.

It was resolved that Diplomas of Membership should be granted to 91 successful candidates, and that in conjunction with the Royal College of Physicians of London Diplomas in Public Health should be granted to 18 successful candidates.

Mr. J. Ernest Lane was re-elected a member of the Court of Examiners.

A letter was read from the Assistant Secretary of the Joint Committee for National Health Insurance, stating that the National Health Insurance Joint Committee and the Insurance Commissions for England, Scotland, and Wales respectively proposed to hold a conference on Feb. 2nd with representatives of the medical profession and inviting the College to appoint two members to attend the conference. It was resolved that the following reply should be sent to the National Health Insurance Commissioners:—

> The Council regret that they are not prepared to send representatives to the meeting suggested by the National Health Insurance Commissioners. The Council are of opinion that the administration of the medical benefits cannot be carried out under the Act with due regard to the interests of the public and the welfare of the medical profession, and that no satisfactory arrangement can be arrived at without an amending Act. The Council, however, will be prepared to render any assistance in their power in the drafting of an amending Act for the provision of such amendments as are necessary to secure the coöperation of the medical profession.

The Standing Committee of the Council on the National Insurance Act were instructed to take steps to communicate with other medical corporations with a view to united action with regard to the Insurance Act.

A report was presented from the Dental Education Committee, containing a statement upon dental education in London which had been prepared in response to a request from the Royal Commission on University Education in London. This was approved, and the President and Sir Alfred Pearce Gould were nominated as witnesses to represent the College before the Commission and to give any further information on the subject that might be required.

Mr. C. H. Golding-Bird was re-elected as the representative of the College on the Central Midwives Board for the year from March 31st next.

The PRESIDENT reported that he had chosen Mr. C. W. Mansell Moullin as Bradshaw lecturer for the ensuing collegiate year.

The SECRETARY pointed out that in the report of the General Medical Council on the final examinations of the dental licensing bodies the proportion of marks which candidates at the examinations for the licence of the College must obtain in order to pass was given as two-fifths, whereas three-fifths is the proportion required, and that steps had been taken to correct the error.

VITAL STATISTICS.

HEALTH OF ENGLISH TOWNS.

IN the 94 largest English towns having an estimated population of 17,559,219 persons in the middle of this year, 8300 births and 6278 deaths were registered during the week ending Feb. 3rd. The annual rate of mortality in these towns, which had been 15·4, 14·8, and 16·5 per 1000 in the three preceding weeks, further rose to 18·6 per 1000 in the week under review. During the first five weeks of the current quarter the mean annual death-rate in these large towns averaged 16·1 per 1000, while in London during the same period the average annual death-rate did not exceed 15·5 per 1000. The annual death-rates in the several towns last week ranged from 6·9 in Ilford, 9·0 in Enfield, 9·7 in Bath, 10·1 in Great Yarmouth, and 10·4 in Ealing, to 27·4 in Dudley, 28·1 in Barnsley, 30·9 in Bury, 31·0 in Preston, and 31·4 in Walsall.

The 6278 deaths from all causes in the 94 towns were 719 in excess of the number in the previous week, and included 401 which were referred to the principal epidemic diseases, against 297 and 311 in the two preceding weeks. These 401

deaths from the principal epidemic diseases included 166 from whooping-cough, 71 from diphtheria, 67 from infantile diarrhœal diseases, 63 from measles, 21 from scarlet fever, and 13 from enteric fever, but not one from small-pox. The mean annual death-rate from these epidemic diseases last week was equal to 1·2 per 1000, or 0·3 above the average in the four preceding weeks. The deaths attributed to whooping-cough, which had been 88, 81, and 94 in the three preceding weeks, further rose to 166 last week, and caused the highest annual death-rates of 1·6 in Leicester and in Barrow-in-Furness, 1·7 in Rhondda, 1·8 in Swansea, 2·6 in Bury, 2·9 in Gillingham, 3·0 in Barnsley, 3·8 in Merthyr Tydfil, and 7·3 in Walsall. The deaths referred to diphtheria, which had declined from 69 to 53 in the three preceding weeks, rose to 71 last week, and included 19 in London and its 14 suburban districts, 5 in Liverpool, 4 in Bolton, 3 in Preston, and 3 in Leeds. The fatal cases of infantile diarrhœa, which had declined from 58 to 47 in the three preceding weeks, rose to 67 last week, and of this number 25 were registered in London, 5 in Liverpool, 4 in Birmingham, 4 in Manchester, 3 in Stoke-on-Trent, and 3 in Salford. The deaths attributed to measles, which had been 69, 64, and 72 in the three previous weeks, declined to 63 last week; the highest annual death-rates from this disease were 1·4 in Oldham, 1·8 in Reading, 2·1 in Warrington, and 2·5 in York. The 21 fatal cases of scarlet fever last week were equal to the average in the four preceding weeks, and included 2 in each of the following towns: Coventry, Liverpool, Salford, Barnsley, and Newcastle-on-Tyne. The deaths referred to enteric fever, which had been 20, 17, and 19 in the three preceding weeks, declined last week to 13, of which 4 were registered in Manchester and 2 in London.

The number of scarlet fever patients under treatment in the Metropolitan Asylums and in the London Fever Hospital, which had steadily decreased from 2213 to 1562 in the 11 preceding weeks, had further declined to 1500 on Saturday last; 169 new cases of this disease were admitted to these institutions during the week, against 165, 162, and 158 in the three preceding weeks. These hospitals also contained on Saturday last 1199 cases of diphtheria, 340 of whooping-cough, 123 of measles, 49 of enteric fever, and 2 of small-pox. The 1538 deaths from all causes recorded in London were 162 in excess of the number in the previous week, and were equal to an annual death-rate of 17·7 per 1000. The deaths referred to diseases of the respiratory system, which had increased from 290 to 333 in the three preceding weeks, further rose to 394 in the week under notice, and were 29 in excess of the number registered in the corresponding week of last year.

Of the 6278 deaths in the 94 large towns last week, 186 were referred to different forms of violence, and 452 were the subject of coroners' inquests. The causes of 62, or 1·0 per cent., of the deaths registered in the week under notice were not certified either by a registered medical practitioner or by a coroner after inquest. All the causes of death were duly certified in Leeds, Bristol, West Ham, Bradford, Newcastle-on-Tyne, Nottingham, and in 57 other smaller towns. The 62 uncertified causes of death last week included 13 in Birmingham, 7 in Liverpool, 3 in London, and 3 in Warrington.

HEALTH OF SCOTCH TOWNS.

In the 18 largest Scotch towns having an estimated population of 2,182,400 persons in the middle of this year, 1069 births and 797 deaths were registered during the week ending Feb. 3rd. The annual rate of mortality in these towns, which had been 17·3 and 17·7 per 1000 in the two preceding weeks, further rose to 19·1 per 1000 in the week under notice. During the first five weeks of the current quarter the mean annual rate of mortality in these Scotch towns averaged 17·9 per 1000, and was 1·8 per 1000 above the mean rate recorded in the 94 large English towns during the same period. The annual death-rates in the several Scotch towns last week ranged from 7·5 in Motherwell, 9·0 in Clydebank, and 11·0 in Leith, to 22·7 in Dundee and in Greenock, and 23·3 in Ayr.

The 797 deaths from all causes were 57 in excess of the number in the previous week, and included 100 which were referred to the principal epidemic diseases, against 103 and 89 in the two preceding weeks. Of these 100 deaths, 55 resulted from measles, 14 from whooping-cough, 13 from infantile diarrhœal diseases, 12 from diphtheria, 5 from scarlet fever, and 1 from typhus fever, but not one from enteric fever or from small-pox. These 100 deaths from the principal epidemic diseases were equal to an annual death-rate of 2·4 per 1000, or 1·2 per 1000 above that recorded in the 94 large English towns. The deaths attributed to measles, which had been 41, 56, and 39 in the three preceding weeks, rose to 55 last week, of which number 43 were recorded in Glasgow, 4 in Greenock, 2 in Edinburgh, and 2 in Aberdeen. The deaths resulting from whooping-cough, which had been 18 in each of the two preceding weeks, declined last week to 14; 3 deaths were registered in Glasgow, 3 in Aberdeen, 2 in Greenock, and 2 in Kirkcaldy. The deaths of infants referred to diarrhœal diseases, which had been 9 and 11 in the two preceding weeks, rose to 13 last week, and comprised 8 in Glasgow, 3 in Dundee, and 2 in Leith. The 12 fatal cases of diphtheria were equal to the average in the four preceding weeks, and included 4 in Glasgow and 4 in Edinburgh. The 5 deaths referred to scarlet fever were equal to the average in the two preceding weeks, and included 2 deaths in Glasgow. The fatal case of typhus occurred at Motherwell.

The deaths referred to diseases of the respiratory system, which had been 120 and 133 in the two preceding weeks, further rose to 144 in the week under notice; and 31 deaths resulted from different forms of violence.

HEALTH OF IRISH TOWNS.

In the 22 town districts of Ireland, having an estimated population of 1,157,014 persons in the middle of this year, 653 births and 545 deaths were registered during the week ending Feb. 3rd. The annual rate of mortality in these towns, which had increased from 18·0 to 22·3 per 1000 in the five preceding weeks, further rose to 24·6 per 1000 in the week under notice. During the first five weeks of the current quarter the mean annual death-rate in the 22 Irish towns averaged 21·5 per 1000; in the 94 large English towns the mean annual death-rate during the same period did not exceed 16·1, while in the 18 Scotch towns it was equal to 17·9 per 1000. The annual death-rates in the several Irish towns were equal to 22·4 in Dublin (against 17·7 in London), 31·1 in Belfast, 19·7 in Cork, 12·7 in Londonderry, 25·8 in Limerick, and 15·2 in Waterford; while in the 16 smallest of these Irish towns the death-rate last week was equal to 21·0 per 1000.

The 545 deaths from all causes in the 22 Irish towns were 50 in excess of the number in the previous week, and included 31 which were referred to the principal epidemic diseases, against 41 and 30 in the two preceding weeks; of these 31 deaths, 15 resulted from whooping-cough, 7 from diarrhœal diseases, 3 from scarlet fever, 3 from diphtheria, 2 from measles, and 1 from enteric fever, but not one from small-pox. These 31 deaths from the principal epidemic diseases were equal to an annual death-rate of 1·4 per 1000; the death-rate from these diseases did not exceed 1·2 in the large English towns, while in the Scotch towns it was equal to 2·4 per 1000. The deaths attributed to whooping-cough, which had been 19 and 15 in the two preceding weeks, were again 15 last week, and included 14 in Belfast and 1 in Dublin. The deaths referred to diarrhœal diseases, which had been 11 and 5 in the two preceding weeks, were 7 last week, all but one of which related to infants under two years of age; 3 deaths occurred in Dublin and 3 in Belfast. The 3 fatal cases of scarlet fever, 2 of which were recorded in Dublin, were equal to the average in the four preceding weeks. The deaths referred to diphtheria, which had been three in each of the three preceding weeks, were again 3 last week, and included 2 in Dublin. The 2 fatal cases of measles and that of enteric fever were all registered in Dublin.

The deaths referred to diseases of the respiratory system, which had steadily increased from 83 to 152 in the six preceding weeks, further rose to 184 last week. Of the 545 deaths from all causes in the 22 Irish towns, 145, or 27 per cent., occurred in public institutions, and 10 resulted from different forms of violence. The causes of 16, or 2·9 per cent., of the total deaths in the week under notice were not certified either by a registered medical practitioner or by a coroner after inquest; in the 94 English towns the proportion of uncertified causes of death last week did not exceed 1·0 per cent.

THE SERVICES.

ROYAL NAVY MEDICAL SERVICE.

IN accordance with the provisions of Order in Council of April 1st, 1881, Surgeon-General Christopher Pearson has been placed on the Retired List at his own request (dated Feb. 2nd, 1912).

The following appointment has been notified :—Staff-Surgeon: A. R. Thomas to the *Excellent*.

ROYAL ARMY MEDICAL CORPS.

Lieutenant James R. Hill is transferred to the Reserve of Officers under the provisions of Article 632, Royal Warrant for Pay and Promotion, 1909 (dated Jan. 30th, 1912).

Surgeon-General A. T. Sloggett, C.B., C.M.G., Principal Medical Officer, His Majesty's Forces in India, has been appointed Honorary Surgeon to the King. Surgeon-General J. G. MacNeece, C.B., has been appointed Principal Medical Officer of the Sixth (Poona) Division. Surgeon-General T. M. Corker has taken up duty as Principal Medical Officer of the Eighth (Lucknow) Division. Colonel W. W. Pike, D.S.O., has taken up duty as Principal Medical Officer of the Bombay Brigade.

Lieutenant-Colonel R. Kirkpatrick has joined at Cairo. Lieutenant-Colonel J. S. Green has been appointed to command the Station Hospital at Bangalore. Lieutenant-Colonel R. W. Wright has been posted to Fyzabad in charge of the Station Hospital. Lieutenant-Colonel T. McCulloch has taken over charge of the Medical Division at the Royal Victoria Hospital, Netley. Lieutenant-Colonel C. R. Elliott has been transferred from Lahore to Jhansi and appointed to command the Station Hospital. Lieutenant-Colonel B. M. Skinner, M.V.O., has been detailed as Senior Medical Officer in charge of the transport ss. *Rewa*, leaving Karachi for Southampton on Feb. 14th. Lieutenant-Colonel L. T. M. Nash will take charge of the Military Hospital, Hounslow.

Major F. G. Richards has been ordered to join in Ireland on March 10th and will be posted to the Cork District. Major T. H. J. C. Goodwin, D.S.O., has taken up duty at Devonport. Major W. H. S. Nickerson, V.C., has been transferred from Cherat to the Station Hospital at Peshawar. Major F. J. C. Heffernan has been posted to the Fifth (Mhow) Division. Major G. S. Crawford has joined for duty in the Dublin District. Major L. P. Moore has embarked for a tour of duty in India. Major W. P. Gwynn has taken up duty at Karachi. Major E. W. Slayter has been transferred from Bellary to Mount Abu and appointed to command the Station Hospital. Major St. J. B. Killery has been appointed to the Northern Command. Major J. M. Sloan, D.S.O., has taken up duty in India. Major G. St. C. Thom has been transferred from Murree to the Station Hospital at Rawal Pindi. Major R. H. Lloyd has embarked for a tour of service in India. Major R. J. Blackham has taken up duty at Peshawar. Major D. Harvey has joined for special duty with the Sleeping Sickness Commission in Nyasaland. Major E. P. Connolly has embarked for a tour of service in India.

Captain E. T. Potts has been posted to Ireland for duty in the Dublin District. Captain N. Low has been selected for attachment to the Belfast University Contingent of the Senior Division, Officers Training Corps. Captain H. C. Winckworth has been selected for appointment as Specialist in Advanced Operative Surgery to the Royal Herbert Hospital at Woolwich, in succession to Captain A. J. Williamson, who has embarked for a tour of service in the Straits Settlements. Captain G. W. W. Ware has been posted to the Southern Command. Captain R. L. V. Foster, from Devonport, has taken up duty at the Military Hospital, Crown Hill. Captain E. M. Pennefather has been transferred from Fermoy to Fethard. Captain C. E. L. Harding has taken up duty at the Station Hospital, Quetta. Captain H. H. A. Emerson has been transferred from Limerick to Derby and appointed Adjutant at the Royal Army Medical Corps School of Instruction of the North Midland Division. Captain M. C. Wetherell has joined for duty at Kildare. Captain J. C. L. Hingston has been appointed to the Station Hospital at Wellington. The following Captains have been posted to the Irish Command: E. W. Powell, O. Ievers, C. E. W. S. Fawcett, V. H. Symons, and M. J. Cromie.

INDIAN MEDICAL SERVICE.

Colonel C. F. Willis, C.B., has taken over duty as Principal Medical Officer of the Ninth (Secunderabad) Division of the Southern Army in India. Colonel R. W. S. Lyons has arrived home on leave of absence from India. Lieutenant-Colonel C. F. Fearnside has been selected for appointment as Superintendent of the Central Jail at Rajahmundry. Lieutenant-Colonel R. Bird, C.I.E., has taken up duty as Professor of Surgery at the Medical College, Calcutta, and Surgeon to the Medical College Hospital, vice Major E. Owen Thurston.

Major C. C. Murison has been appointed Superintendent of the Lunatic Hospital at Matheran, in succession to Major E. F. G. Tucker. The services of Major V. H. Roberts have been placed temporarily at the disposal of the Chief Commissioner of the Central Provinces. Major F. H. Watling has been selected to officiate as Superintendent of the Central Jail at Buxar during the leave of absence of Captain W. Gillitt.

The services of Captain N. H. Hume have been placed at the disposal of the Government of Eastern Bengal and Assam while that officer officiates as Civil Surgeon of Jalpaiguri. Captain K. S. Singh has been appointed Plague Medical Officer at Karnal. The services of Captain J. G. G. Swan have been placed permanently at the disposal of the Punjab Government. Captain A. W. C. Young has taken up duty as Specialist in the Prevention of Disease at Bannu, and has been appointed in charge of the Bacteriological Research Laboratory at Brigade Headquarters. Captain E. H. B. Stanley has arrived home on leave of absence from India. Captain P. Heffernan has been appointed Lecturer on Mental Diseases at the Medical College, Madras, and Superintendent of the Madras Lunatic Asylum. Captain W. W. Jendwine, medical officer of the 27th Punjabis at Alipore, has been appointed to Rawal Pindi as Plague Medical Officer. Captain D. M. C. Church has been granted leave of absence home for one year from India. Captain W. D. H. Stevenson has been appointed to the Bacteriological Department under the Sanitary Commissioner with the Government of India. Captain R. T. Wells, officiating civil surgeon at Dera Ghazi Khan, has been appointed Plague Medical Officer at Rotak, vice Captain S. B. Mehta, whose services have been placed at the disposal of the Government of India for employment in the Department of Education. Captain S. H. Lee Abbott, civil surgeon at Dalhousie, has been transferred to hold Civil Medical Charge at Ferozepore. Captain H. B. Steen, officiating first resident surgeon in the Presidency General Hospital, Calcutta, has been appointed to act as Surgeon-Superintendent of the hospital during the absence on privilege leave of Lieutenant-Colonel H. W. Pilgrim. Captain K. G. Ghorpurey has been appointed to officiate as Second-class Civil Surgeon at Aden during the absence on leave of Lieutenant-Colonel S. E. Prall.

Lieutenant G. G. James has been selected for appointment as Assistant to the Chief Quarantine Medical Officer in the Persian Gulf. Lieutenant A. L. Sheppard has been appointed to officiate as Officer in Medical Charge of the 122nd Rajputana Infantry. Lieutenant E. S. Goss has been placed under orders to embark for India. Lieutenant H. Stott has been appointed Specialist in Midwifery and Diseases of Women and Children, Burma Division.

ARMY HEADQUARTER STAFF IN INDIA.

The following appointments have been made:—Surgeon-General A. T. Sloggett, C.B., C.M.G., Army Medical Service, vice Surgeon-General Sir W. F. Trevor, K.C.S.I., C.B., M.B., Army Medical Service, to be Principal Medical Officer, His Majesty's Forces in India (dated Dec. 31st, 1911). Colonel H. Hendley, Indian Medical Service, vice Colonel D. ffrench-Mullen, Indian Medical Service, to be Deputy Principal Medical Officer, His Majesty's Forces in India (dated August 8th, 1911).

TERRITORIAL FORCE.

Royal Army Medical Corps.

Yorkshire Mounted Brigade Field Ambulance, Royal Army Medical Corps: Percy Kingsley Steele to be Lieutenant (dated Oct. 6th, 1911).

4th Northern General Hospital, Royal Army Medical Corps: Charles John Coleman to be Captain (dated Dec. 15th, 1911).

DEATHS IN THE SERVICES.

Brigade-Surgeon Henry Elmsley Busteed, C.I.E., late I.M.S., in his seventy-ninth year. He received a commission in the service of the East India Company in 1855 and was a medical officer with the Horse Artillery in the mutiny of 1857-58. For his services at Cawnpore and Lucknow he received the medal with clasp. In 1865 he was appointed

assistant assay master of the Madras Mint, and was subsequently appointed to the Bombay Mint in a similar capacity. In 1872 he was appointed assay master at Calcutta and retired in 1886, in which year he received the decoration of C.I.E. While at Calcutta he collected the materials for "Echoes of Calcutta," a well-known standard work on the history of Calcutta.

Sir J. Porter, Director-General of the Medical Department of the Navy, inspected the medical establishment of Plymouth Naval Station on Jan. 31st.

Fleet-Surgeon Robert Hill, M.V.O., of the *Medina*, has on the return of the King and Queen from India been advanced to C.V.O.

Correspondence.

"Audi alteram partem."

GUARDIANS AND DISSECTION.

To the Editor of THE LANCET.

SIR,—The report of the meeting of the Southwark board of guardians which you publish has greatly interested me. My letter to the chairman seems to have been fairly quoted, and I have nothing to withdraw or excuse in it. The point is that we cannot treat the human body without knowing its structure, and we cannot learn its structure without examining the dead. Put in another way, we cannot learn to operate for the prolongation of life and the relief of suffering without practising on the dead, unless we are to practise on the living. I view the action of the important board of Southwark guardians with the greatest apprehension, since it is sure to be followed, as Mr. Hills hopes it will, by other boards. It now becomes our duty to decide whether we shall continue to keep in the background and watch our supply diminishing year by year, as it is doing, or whether we should not rather ask every thinking man to consider whether it is right to sacrifice lives and relief from suffering to a kindly sentimentalism.

Is the benefit gained by allowing unclaimed dead bodies to decompose naturally instead of being permanently embalmed and reverently dissected before being buried with due religious rites enough to set against the loss of the surgeon's skill when an instant operation is necessary in order to save some valuable life? I submit that we have no moral right to allow a single breadwinner to die or a single child to suffer unrelieved even if the alternative is the examination after death of every man who dies in the kingdom, be he duke, anatomist, Poor-law guardian, or pauper.

I can already feel that, while we are trying to educate those who have the charge of the poor in these elementary facts of medical knowledge, anatomists will have a very bad time of it, but we must face all that and hope for the help of those who are alive to the great responsibility which a guardianship of the poor entails. I have said nothing about the scientific side of the question. Of course we want to know not only where all the parts of the body are, but why they are as they are. It is quite arguable that a sentimental objection to dissection might be fairly set against this, but I have never yet heard any attempt to justify a refusal to allow the surgeon, who willingly gives his best skill to the poor in their need, to use the only means on earth to gain that skill.

I am, Sir, yours faithfully,

F. G. PARSONS, F.R.C.S. Eng.,
Lecturer on Anatomy at St. Thomas's Hospital and at the School of Medicine for Women.

St. Thomas's Hospital Medical School, S.E., Feb. 2nd, 1912.

*** The paragraph to which Mr. Parsons refers will be found on p. 408 of this issue of THE LANCET. We drew Mr. Parsons's attention to it.—ED. L.

THE EXTRACTION OF CATARACT.

To the Editor of THE LANCET.

SIR,—In THE LANCET of July 29th, 1911, appears an article by Mr. H. L. Eason on the Extraction of Cataract. What directly concerns me in that article I here explain. On the basis of the rest of his article I hope to contribute matter of interest to the profession at a later date.

In Mr. Eason's article he, like a number of others in the British medical press, reviews 23 cataract operations performed by me in February, 1909, in Major Kilkelly's hospital, Bombay, as published in the *Indian Medical Gazette*, May, 1910, as if I had never questioned those results. By some peculiar accident ophthalmic writers in the British medical press seem only to have read the above-quoted number of the *Indian Medical Gazette* and the number of the *Ophthalmic Record* in which the same paper by Major Kilkelly appeared, and seem not to have read the remainder of the controversy in both journals. In fairness to your readers I ask you to publish the following *résumé* of that controversy. (The whole of the controversy can be seen in full by anyone who consults the *Indian Medical Gazettes* of 1910 and 1911, or the April number of the *Ophthalmic Record* of Chicago, 1911).

While at the Bombay Medical Congress in February, 1909, at the urgent request of Major P. P. Kilkelly, I.M.S., I performed 23 intracapsular extractions in his hospital and left by the next train. At the time of operation I entered the details of the operation on the bed-head tickets of these patients. I heard no more of the cases until I saw them reported by Major Kilkelly in the May number of the *Indian Medical Gazette* of 1910. My permission was not asked before the publication of these cases, nor was any information given me concerning them before the publication of the results. I was not invited down to Bombay to see and report on them myself. About the same time Dr. Pontius published notes of these same cases in *North-West Medicine*, U.S.A. In a succeeding number of the *Indian Medical Gazette* as a part of this controversy Major Kilkelly reported one side of a purely private case of mine done at Amritsar, Punjab, without consulting me and reported it incorrectly. The case was a failure, and he reported it as of "general interest," implying that it was in harmony with the Bombay cases—that such was the usual result of my cases, and that I knew nothing of the after-result of my cases. However, I was able to publish the whole of the case, putting a very different construction on the result. Dr. Pontius, with Major Kilkelly's permission (not having asked mine), examined the famous Bombay cases. When I put Dr. Pontius's facts as regards gross lesions alongside with Major Kilkelly's facts as regards the same lesions they very much disagreed in nearly every detail, even to the number of cases purporting to be mine (Dr. Pontius reported on 24 cases; I had operated on 23). I asked Major Kilkelly for the loan of the bed-head tickets to see my own entries on them, as both these surgeons had recorded more capsules left behind than were entered on the bed-head tickets. He declined to lend them to me, stating that he did not see "what useful purpose it would serve."

The results in themselves were utterly unintelligible to me, and when I put the facts of Dr. Pontius and of Major Kilkelly alongside of one another the only conclusion I could draw from the discrepancies was that these two surgeons could not have examined the same cases, but that the failures of Major Kilkelly's hospital had been paraded for him and for Dr. Pontius and been put to my charge. This charge I made in the controversy and no attempt has been made to meet it, and no attempt can be made to meet it while Major Kilkelly's facts and Dr. Pontius's facts stand. I consequently cannot understand how any fair-minded man can quote the results published by Major Kilkelly as having any bearing on intracapsular extraction.

I am, Sir, yours faithfully,

HENRY SMITH, M.D., M.Ch.,
Lieutenant-Colonel, I.M.S.

Amritsar, Jan. 15th, 1912.

THE COMBINED WHOLE-TIME MEDICAL OFFICER.

To the Editor of THE LANCET.

SIR,—Recently the *Western Daily Mercury* reported the proceedings of a joint meeting of the St. Austell board of guardians and the rural district council to consider the appointment of a medical gentleman to carry out the combined duties of medical officer of health, medical officer to the union workhouse, and also No. 7 District. A suggestion was also made that the office of public vaccinator should be included as well. After a discussion the matter was adjourned for a month, a committee being appointed to discuss the various sugges ted schemes.

It is proposed to pay a salary of £400 per annum to a medical gentleman, who presumably will have to devote the

whole of his time to his "official duties." The combined appointments are as follows: Medical officer to the union workhouse, £35; medical officer to the union district No. 7, £30; probable fees, £10; medical officer to the union cottage homes, £5; medical officer to the rural district, £270; and medical officer to the urban district, £70. We hear on good authority that the expense of conveyance, drugs, &c., will fall on the holder of this appointment.

The local medical men have protested against the injustice of including in the office of medical officer of health the duties which are performed by other medical men resident in the district, and were supported by at least two of the members who saw the danger of some of the work being neglected. Our main purpose, however, in writing this letter is to point out to the profession the grave danger they would be placed in by the creation of a medical bureaucracy, especially an inadequately paid one. These officials will be under the control, either directly or indirectly, of the Government. A sufficient number of them will in time become a sort of Government medical reserve to be employed under the Insurance and other Acts on terms which the more independent practitioner would refuse, a position which we trust no medical man will accept.

The case illustrates the points which were urged by many speakers at the Joint Medical Officers Associations' dinner, and shows the urgent necessity of all medical men who hold official appointments joining their respective associations, so that some joint action may be authoritatively taken in view of the increasing number of local bodies who are seeking to make these ominous appointments on the spurious ground of so-called economy.—We are, Sir, yours faithfully,

RASHELL DAVISON,
Chairman of Council, Association of Medical Officers of Health.
D. A. BELILIOS,
Honorary Secretary, Association of Medical Officers of Health.
New Malden, Feb. 6th, 1912.

KING EDWARD'S HOSPITAL FUND AND THE EVELINA HOSPITAL.

To the Editor of THE LANCET.

SIR,—I am gratified to notice that in THE LANCET of Jan. 27th (p. 242) you have been good enough to call attention to the difference of opinion between the King's Fund and the authorities of this hospital, and take this opportunity of thanking you for so doing.

Your article is, however, not quite accurate in one respect, and I shall be extremely obliged if, in justice to my committee, you will point out that, although the King's Fund insisted on an inquiry officer being appointed, their distribution committee have given absolutely nothing to meet the outlay incurred by having that official and establishing her department on a proper basis, the total cost of which, as stated in my letter to the *Times*, is over £200 a year.

My committee feel that the King's Fund have acted with some want of consideration for the hospital throughout the whole of this business, as the grant of £150 made at the end of 1910 was the amount usually allotted to this institution before the appointment of an inquiry officer was required. When my committee complied with the request that an inquiry officer be appointed, it was quite expected that the King's Fund would meet certainly a considerable proportion of the cost, in addition to the usual grant.

I am, Sir, yours faithfully,

D. MALCOLM SCOTT,
Jan. 31st, 1912. Chairman of the Committee of Management.

THE ACETONE-WRIGHT METHOD OF LEUCOCYTE COUNTING.

To the Editor of THE LANCET.

SIR,—Not long ago I sent to THE LANCET[1] an account of a method of absolute and differential white cell counting in one operation. Further experience of this method enables me to add the following remarks.

1. It is better to use a 1 c.c. pipette graduated in 1/100ths for measuring the various constituents instead of a graduated cylindrical vessel. With a pipette the proportions of acetone and water should be 2 to 13 instead of 3 to 12. I attribute this difference to the different shapes of water and acetone surfaces in narrow cylinders.

2. For convenience the acetone and water may be kept as a stock solution of 13 per cent. acetone to which 20–25 per cent. of Wright's stain (diluted four-fifths with methyl alcohol) is added just before use. The optimum quantity varies with the blood, the dilution, and the time elapsing before counting it. The results seem to be not quite so good as those given by freshly prepared solutions.

3. Much the best, simplest, and cheapest method is to mix the Wright's stain and acetone in a stock solution. The mixture is made thus. Grind up one soloid of Wright's stain in a glass mortar with successive quantities of methyl alcohol; pour each quantity into a glass measure, allowing a little while for sedimentation in the mortar. When 10 c.c. are in the measure again allow a little while for sedimentation, and then pour it into a tall, narrow, one-ounce bottle and cork it well. Then treat the residue in the mortar in exactly the same way with acetone till 10 c.c. are made up. Add this to the stain in the bottle, and then add direct 5 c.c. of methyl alcohol. There should be no precipitate, and this apparently keeps indefinitely if well corked.

This preparation may be used both for counting with a hæmocytometer and for staining films. With the hæmocytometer it is used as follows: Measure 0·3 c c. of distilled water and 0·1 c.c. of this mixture into a small cylindrical vessel of such a size as to let a 1 in 10 pipette reach to the bottom. Cork at once and shake well. Using a 1 in 10 pipette, dilute the blood 1 in 10 or 1 in 20. Draw up the fluid quickly till the bulb is nearly full, then hold pipette and cylinder horizontally and fill to the mark. Thus it is possible to make an absolutely exact dilution quite easily. Still holding the pipette horizontal, remove the cylinder, and cover first the point and then the other end of the pipette with thumb and finger and shake thoroughly, still holding it horizontal. The cover-glass should be put on the drop as quickly as possible. The method has, of course, all the disadvantages of the 1 in 10 pipette methods, but if the rules be adhered to, to base an absolute count on not less than 100 cells and a differential on 300 cells, absolute accuracy, as checked by films and Toisson's method, may be obtained in one-tenth of the time. If the cover-glass is put on smartly the distribution of the cells is quite even, but it is perhaps safer to visit equally all quadrants of the disc. I usually follow along the square which is contained by the disc in making a differential count, and count three of the large squares in a Thoma-Zappert slide for the absolute count. For rough estimation the small-squared area in two drops will give approximate results, both absolute and differential. In ordinary blood this area in each drop will contain 40 cells if 1 in 20 dilution is used. (The quantity of stain suggested is usually enough to fill a 1 in 10 counter and leave a little. For a 1 in 100 counter 0·8 to 1·0 c.c. must be made up.)

This "Peking modification" stains films quickly and well, but the usual method must be altered. Cover the film with stain for 20 or 30 seconds, then add an equal quantity of distilled water and mix well. Leave this for one minute, then pour it off, but *do not wash it off*. Dry the film over a flame, and then wash in distilled water; one dash of water from a test-tube is enough. The stain is very clear, the blue is a royal blue. The process takes two to two and a half minutes only and is very economical. Since acetone is added it seems unnecessary to use the very costly acetone-free methyl alcohol, but ordinary methyl alcohol may, perhaps, contain other undesirable impurities. I have no experience of this, nor do I know whether the malarial parasite can be stained in this way, but I see no reason to doubt it.

The further problem of combining red, white, and differential counts in one operation has been solved by Schüffner.[2] His formulæ as reported in the *Medical Officer Supplement* are:—Solution A: Sodium chloride, 4 grammes; phenol, 3 grammes; borax, 0·1 gramme; formalin, 1 c.c.; and distilled water to 1 litre. Solution B: Methylene blue, 1 gramme; potass. hydrate, 0·1 gramme; and distilled water to 100 c.c. For use add two drops of B to 10 c.c. of A.

It is certainly possible with this stain to make an absolutely accurate white and differential count 12 minutes after taking the blood; the staining does not show clearly sooner.

[1] THE LANCET, Jan. 6th, 1912, p. 20.

[2] Münchener Medizinische Wochenschrift, 1911, p. 1495.

The eosinophils are quite easy to recognise, and the rest are well stained. But whether it be a peculiarity of Peking blood or a misprint in the report, I have found the solution made up as above distinctly hypotonic, and the red cells have been destroyed to the extent of 5 to 20 per cent. in ten minutes. To avoid this I have added 0·5 gramme of sodium chloride, and get satisfactory red cell counts, but the polymorphonuclears do not stain so clearly; the stain of some becomes diffuse and others lose it altogether in 30 minutes. This laking may be a local peculiarity, for the blood of both natives and foreigners here has special features, but it is worth mentioning as there may be no other indication than a gradual reduction in the count in successive drops or an occasional "cell ghost" with the hæmoglobin in a corner. If either of these things occur, in all probability at least 10 per cent. of cells have been already destroyed. Therefore, although this method is exceedingly handy and quick when a general idea of the blood is required, I would strongly advise that anyone who uses it should compare his results with those obtained by Toisson's fluid several times before trusting to it altogether. Even with the extra sodium chloride a little laking begins to occur after an hour or so, but for immediate use the results are quite trustworthy. I am, Sir, yours faithfully,

R. A. P. HILL.

Union Medical College, Peking, China, Dec. 12th, 1911.

THE PRACTICE OF MEDICINE IN BRITISH COLUMBIA.

To the Editor of THE LANCET.

SIR,—Dr. G. Gibson, in THE LANCET of Dec. 16th, 1911, sounds a timely note of warning as regards the conditions necessary for practice in British Columbia. Medical men in the old country are being tempted to buy fruit farms in the province, and it is important that they should know that their British qualifications do not entitle them to practise out here. The examination, mereover, which they have to pass before being allowed to register is not a mere formality. Even a well-informed practitioner, unless he had done a few months' reading before the examination, might find that he had failed to satisfy the examiners. For the examination is a very comprehensive one, and includes many subjects which we are apt to put aside after our student days are over.

As regards the chances of practice, they are not as good as might be imagined. It is true British Columbia is a highly prosperous country with a great future ahead of it. But it is as yet but thinly populated outside of the towns. All openings there may be are rapidly filled by medical graduates from the Canadian schools. At present there are nearly 600 names on the Medical Register, and most of these men are in active practice. The population of the province, on the other hand, barely amounts to 400,000 (386,000 according to the last census taken in May, 1911). In the city of Vancouver, with a population of 130,000, there are over 150 registered practitioners. The number of medical men out here is greater *per capita* than it is in England. It should, however, be stated that there is little or no poverty, and there are few who cannot afford to pay for medical attendance.

Dr. Gibson is, I am afraid, a little generous when he puts down $1500 (£300) as what a new-comer might reasonably expect to make during his first year in Vancouver. This, moreover, only states one side of the question. Living out here, it should be mentioned, is from 75 to 100 per cent. higher than in England. It is also the custom here for medical men to have an office in the business section where rent is necessarily very high. If a man is married, and unless his wife is prepared to do all the household work, he will find the cost of servants a very heavy item. A general servant costs from £5 to £7 per month, while it is difficult to obtain a cook (usually Chinese) at less than £10 a month. As regards special work, such as eye, ear, throat, and nose, the field is fully occupied, there being at least a dozen men engaged in these specialties.

British Columbia offers, as Dr. Gibson says, better chances, especially to the younger men, than does the old country. But, as he wisely remarks, it is a serious mistake to think that all one has to do is "to stick up one's brass plate and the patients will come pouring in." It would not be wise for anyone who intends starting in one of the coast cities (Vancouver and Victoria) to have less than a capital of £200 after arrival here. He will find that he requires that amount and more to defray preliminary expenses as well as cost of living during the time that must necessarily elapse before he will get both ends to meet from the proceeds of his practice.

I am, Sir, yours faithfully,

F. L. DE VERTEUIL, M.D. Edin., M.R.C.S. Eng.,
Surgeon R.N. (retired).

Vancouver, Jan. 3rd, 1912.

PSYCHOTHERAPY AND GENERAL MEDICINE.

To the Editor of THE LANCET.

SIR,—May I have space for a few remarks suggested by Dr. Branson's letter in to-day's LANCET? I have had some considerable experience of the practice of hypnotic suggestion, and hope that this will be a sufficient excuse. 1. In Dr. Branson's method he attempts to influence the patient's judgment, and in just the same way I try for the same result. I do not ask the patient to "surrender his judgment." As a matter of fact, the patient will often refuse a suggestion which is against his reason. The hypnosis only heightens his suggestibility and enables me to persuade him to use his own bodily powers on his own behalf. 2. The reasoning power of the patient in a state of hypnosis is not by any means entirely suspended. I have often argued with the patient about the cause of a symptom, and have brought him or her to reason with excellent results. 3. The patients who are amenable to hypnotic suggestion are not "those who are hovering between the neurologist and the alienist." These are the least amenable of any. Those whom Dr. Branson uses his "rational psychotherapy" upon are the best subjects for hypnotic suggestion. In fact, what Dr. Branson calls "rational psychotherapy" is really suggestion without the aid of hypnosis, its most valuable ally. I feel sure that if Dr. Branson could so far put aside his personal prejudice against hypnotic suggestion as to make a study of it he would very soon realise the truth of what I state and that his prejudice would rapidly disappear.

I am moved to make these remarks by the feeling that such a valuable weapon in our armoury as hypnotic suggestion should not be decried upon merely theoretical objections, which, practical experience shows, have no real basis. I am, Sir, yours faithfully,

Westcliff-on-Sea, Feb. 3rd, 1912. JAMES B. TOMBLESON.

THE ADMISSION OF VENEREAL CASES TO GENERAL HOSPITALS.

To the Editor of THE LANCET.

SIR,—I have read with much interest a letter with the above heading and signed "A Hospital Matron" which was inserted in THE LANCET of Jan. 27th. I have also read the paper on Venereal Disease, its Present and Future, in THE LANCET of Dec. 9th and 16th, 1911, written by Dr. Douglas White and Lieutenant-Colonel C. H. Melville, R.A.M.C., as well as the leading article, entitled "The Racial Importance of Venereal Diseases," in your columns of Dec. 16th. In this article you yourself recommend the procedure suggested by the above authors, and which is so obnoxious to "A Hospital Matron": that "in every hospital there should be accommodation for the treatment of venereal cases, both as in-patients and as out-patients."

The writer of the letter bases her objection to this measure on the disturbing effect it might have on the susceptibilities of "the ordinary well brought up girl of from 20 to 25, the usual age at which probationers enter hospitals," and who "is ignorant of the existence of venereal disease and of the horrible consequences of contracting it," and who, therefore, "certainly should not be exposed under compulsion and in ignorance to such a vile contagion." But this seems to me hardly a valid plea to urge against admitting venereal cases into general hospitals. To begin with, they *are* admitted into many general hospitals every month in the year, though not into "special wards," and though not always labelled as such; and therefore apparently no exception is taken to their presence in the wards. I need only quote from an annual volume of Hospital Reports

I have at hand that contains a list of all the medical and surgical cases admitted during the year into a large London hospital. It so happens that nearly 20 years ago that same hospital decided to close its male and female "lock ward" with 22 beds, and this was converted into a general surgical ward. I was sister of that ward afterwards for three years, and many "specific" cases came in for operation. In the reports I note gonorrhœa, 3 cases; gumma, 1 case; tabes dorsalis, 24 cases; syphilis, 17 cases, and there are probably others.

As regards infection, every woman who takes up nursing or midwifery knows—or *ought* to know—what risks she runs, while her exposure to infection only differs in degree but not in kind from that of the medical men and students who attend infective cases. The contact with certain forms of venereal disease constitutes a very serious risk to all who enter the medical or nursing professions. But women may become midwifery pupils at an age before they are admitted to some of the large general hospitals, and in district work they are exposed to far greater danger of infection from gonorrhœal discharges and from handling infants exhibiting the external manifestations of congenital syphilis than they are likely to be exposed to in the wards of a general hospital.

A high degree of "nerve" and of moral courage is required to make an efficient type of nurse, but she also needs to carry about with her Charity's mantle. "A Hospital Matron" says very truly that "no real nursing can exist where the patient's personality is treated as non-existent and the area of disease alone is considered." But surely this is an argument all the other way. The disease and its etiology may inspire the nurse with "horror and repulsion," but if, at the same time, it induces her to feel nothing but "disgust for its victims," I think she would be wiser in choosing some calling that makes no claim on her human sympathies. The "intolerance of youth" is not permitted to those who nurse the sick. All of us who have worked in general hospitals have had occasion to nurse "police cases." But a patient is a patient, and so long as his physical disabilities require our skilful ministrations his entire dependence on us must appeal to our nursing instincts, and we take little or no count of his moral obliquities. Incidentally, I have known this attitude to have a very humanising effect on the "sinner." And with regard to the sinner who comes to us for bodily tending I think we would do well to remember how it was once said: "Neither do I condemn thee."

I am, Sir, yours faithfully,

Hamburg, Feb. 4th, 1912. EMILIA V. KANTHACK DE VOSS.

M. BERGSON'S "CREATIVE EVOLUTION": THE NERVOUS SYSTEM IN ORGANIC EVOLUTION

To the Editor o THE LANCET.

SIR,—M. Henri Bergson's new theory of organic evolution, as brought out in his work, "L'Évolution Créatrice," a translation of which into English by Mr. Arthur Mitchell appeared a short time ago,[1] is bound to have a wide influence on thinking men, since in the chaotic state of biology as regards the factors of evolution, and the complete abstention of biologists from taking an intelligent interest in Lamarckism, especially as modified by recent science, it offers to the thinking man the most plausible theory for the operations at work in organic evolution.

The leading criticism of M. Bergson as to the existing theories of evolution is that there is no indication in any of them of any factor which would make for coördination. He cites as an instance as regards natural selection one of the strongest arguments against it—viz., that it is impossible to conceive that variations occur in nature in such correlation with each other as to lead to modification dependent on the simultaneous appearance of variations in different parts of the organism—e.g., in the brain and the peripheral parts correlated therewith in the eye. And one of his strongest arguments indicative of purpose in evolution is that special organs become developed on a similar plan in organisms that had diverged from the stem at a comparatively early period in evolution—e.g., the eye of molluscs and of vertebrates, and also in the case of the sexual apparatus of animals and plants, as illustrating unity of purpose. M. Bergson is, of course, a teleologist, but it seems to me he makes his working out of the plan to depend on subsequent conditions which arise as progress is made. Back of all is the creative energy, which works upward in a definite way and always with a definite aim. Such a theory, as I have stated, will, no doubt, gain wide acceptance, since it postulates an initial purposeful force through which evolution has been carried on, and by which coördination is effected. Theologians will doubtless hail it as being in harmony with, and really an explanation, if an expansion of their special creation views; and as such they will accept it as a new stronghold—in their attempt to harmonise dogmatic theology with science—especially since it seemingly is based on scientific grounds.

It will be idle for biologists to belittle it, to attempt to brush it aside by sarcasm or put it down by weight of authority; they will have to sink differences and retrace their steps in order to learn why, and how, such a theory as M. Bergson's has apparently so much truth in its favour. And in doing so they will have to go back to the teaching of Lamarck, whose theory—misunderstood in the past—in the present day, with the light of modern scientific knowledge, can be made to explain not alone the apparent truth in M. Bergson's theory, but once and for all, by demonstrating the true factors at work, lay bare the foundation on which the true process of organic evolution has been built. The absence in all theories of evolution of any factor which makes for coördination in development, as I have stated, is the characteristic feature revealed in M. Bergson's work. On the contrary, in Lamarckism this coördination and correlation is made clear. How is this shown? By demonstrating that through the nervous system such a coördination is effected. It is due to the fact that the influence of the nervous system in organic evolution has hitherto been ignored by biologists that it is possible for a theory such as M. Bergson's to be advanced and apparently rendered acceptable to thinkers. Let us see how the nervous system has been developed, and let us learn how its influence has been operative all through the progress of evolution.

The simplest organism consists of one cell. The functions of this cell are: (1) division or propagation, (2) absorption or nourishment, and (3) irritability or protection as seen in motion. When two or more cells are united to form one organism we find the same three functions; but even so low down in the scale of life as the hydra we find that certain cells are more sensitive than others and are known as *neuro-musoular* cells. "It is important," states Professsor McFarland,[2] "to note that the purpose of the primitive nervous system seems to be to correlate external impressions with the movements directed towards the capture of food or escape from enemies." And in order to show that through the nervous system coördination is effected in evolution, in his chapter, "The Higher Organisms," he denotes the section on the development of the nervous system, *innervation and coördination.*

For the very lowest organisms there are certain conditions in the environment to which they react. These reactions are known as *tropisms*, and consist for the most part of reactions to heat, motion, and chemical action in a general way. As organisms rise higher the various reactions become specialised, and the special senses, foreshadowed at an early time, are gradually developed. As, however, the various diverging lines of advance seem to respond in a similar way, it would seem that following the adjustment of living protoplasm to the environment as regards light, heat, and other physical conditions, the need is the determining factor in all cases. Professor McFarland thus writes[3]: "The increasing structural complexity appears to be largely a matter of necessity"—i.e., for the satisfaction of the needs of the organism. To a physician the controlling and coördinating power of the nervous system must be clearly evident, since, as I have previously stated in your pages, he is capable of looking at the question from a standpoint of fuller knowledge than the pure biologist—a standpoint gained from a study of the organism from the unicellular, the beginning, to man, the final stage. In the gradual evolution through the nervous system we have a series of gradations somewhat different from the gradations

[1] THE LANCET, June 24th, 1911, p. 1710.

[2] Biology, General and Medical, p. 149.

[3] Ibid., p. 120.

assumed in natural selection, since each step forward is registered, as it were, by the nervous system, which controls and coördinates it, so that it is possible for each advance to be gradually transmitted as a higher and higher step is reached. And this is made possible since the need is a gradually increasing one, and is present in young and old and in both sexes, and is supplied through voluntary action. Hence each step is registered in the germ-plasm, or its developments, the germ, sperm, zygote, and embryo, and appears at birth as a variation.

In a review of M. Bergson's work, "Creative Evolution," in the columns of the *British Medical Journal*, the reviewer thus expresses himself as regards M. Bergson's theory in relation with that of Lamarck: "The resort to an internal principle of direction which M. Bergson considers indispensable appears to have suggested a return to the position of Lamarck, who somewhat naively attributed to the living being the faculty of modifying its organs by use or disuse, and of transmitting to its offspring the variations thus induced. But in the first place, this hypothesis leaves the variations of plants quite unexplained; in the second, the inheritance of acquired characters, if it ever occurs, must clearly be very exceptional. Moreover, granted its occurrence, the question at once arises, Was the new habit of purely somatic origin, or was it not based on an inborn tendency of germinal origin?" In this criticism of Lamarck the reviewer betrays a lamentable misapprehension of his theory. In the first place, Lamarck made a broad distinction between the modifying factors in plants and animals. As regards the former, he stated that the direct influences of the changing environment had a directly modifying influence, since plants become modified through their nutritive processes. That such is the case has been amply proved by Professor Henslow and many other eminent botanists, and again recently by Prince Krapotkin in the *Nineteenth Century and After*, his facts being drawn from the observations of experimenters in several different countries.

As regards animal life Lamarck *never* stated that animals have the power of modifying their organs directly through willing or desiring for such changes, leading to use or disuse of organs, as is maintained by biologists. What Lamarck did state was this: Owing to changes, climatic and otherwise, affecting their needs, animals, in order to sustain life, are forced to adopt new habits, to adopt new methods of satisfying their wants of food, &c. These new habits being forced through need on all the animals alike, and the new habits being voluntary in those with a nervous system, the results are registered on the germ-plasm and its developed stages, germ, sperm, zygote, and embryo. Hence the gradually acquired new habits, being permanent, and being forced on all, young and old, male and female, the organism is also gradually modified to suit the new conditions of life until full or relatively full adaptation is reached. Weismann, although at first basing his whole theory of evolution on the inviolability of the germ-plasm, was soon forced to recognise that no progress could be made thereby, since there could be nothing additionally acquired by which evolution could proceed; hence he was forced to admit the influence of the environment on the germ-plasm in order to account for adaptation. That is the position of Weismannism, on which Neo-Darwinism is based. But Lamarckians also recognise the influence of the environment on the germ-plasm, but whereas Weismann limits the influence solely to the germ-plasm, Lamarckians maintain that the influence is not so limited, that the same process by which the influence is made on the germ-plasm is extended, so that not alone is the germ-plasm modified but its various stages of development—the germ, sperm, zygote, and embryo—are similarly modified, and that the modifications produced appear at birth as innate characters or variations. Since the environment includes everything to which the organism can react, and since change in environment means change of reaction on the organism, it must be plain that when through unfavourable changes organisms are forced to adopt new methods of feeding—as when the giraffe, unable to procure nourishment through gradual failure of surface vegetation, is forced to take on the habit of eating the leaves of trees—it must be plain that the effects of new habits affect the organism, so that through transmission of the effect the various parts affected become more and more adapted to the new mode of life until full adaptation is reached. And the changes effected are in coördination with each other, since the effects of the new mode of procuring food, seeking protection, &c., are brought about through the nervous system.

That modification of function relatively quickly modifies the organ is well seen in John Hunter's experiment with a seagull. He took a gull accustomed to feed on soft food and fed it on grain for a year. At the expiration of the year he killed it, and found that the muscular structure of the stomach had been so markedly modified as to assume the appearance and consistency of a gizzard. Under the necessary circumstances such a change in character would be transmitted. Now what Lamarckians claim is this: When gradually climatic and other changes occur in the environment of animals (and there is clear evidence that such changes have continually taken place all over the surface of the earth) so as to affect unfavourably their needs for food, protection, &c., the animals must either (1) die out, (2) migrate to a more favourable environment, or (3) adopt new habits as regards feeding, &c., as in the case of the giraffe already mentioned. Now these new habits being gradually acquired, and being forced on all alike, the young and old, and on both sexes, and being voluntary—i.e., through the need or desire for food, &c.—the nervous system, governing not alone the germ-plasm but its developments, is also modified. As a result the various parts affected in the satisfaction of the needs become coördinated and correlated, as in the giraffe, in which not only are the head and neck elongated, but also the fore-quarters and to some extent the hind-quarters, as the result of the new habit of feeding on the leaves of trees. As it must be plain that the effects of the new habits are innate characters and thus capable of transmission, in process of time the parts involved in the new habits must gradually more and more approximate to full adaptation as we see them, so as to answer satisfactorily the needs of the animals. By that means of modification we are able to understand how slight gradations are brought about, since a new habit may at times only partially modify an organ.

The above explanation is altogether different from that held by biologists as regards Lamarckism and is one capable of making clear the whole *modus operandi* of organic evolution.

A fact which has evidently been lost sight of in postulating a creative force acting upwards and definitely, is that there are certain organisms living in the present day that have existed in their present forms from the very earliest periods, thus demonstrating that in their case at least the creative energy or *vis a tergo* did not work upwards in any direction. To postulate a force acting extrinsically on matter is to lose the full significance of evolution. This world is a physical one, but within its potentialities, I claim as my belief, is that of the evolution from physical conditions of a form of energy called "mind." Just as from the 32 pieces of the chess board games requiring the highest mentality may be evolved according to the correlation of the pieces on the board, so from the correlation of sensory impressions on the higher cerebral centres, mind or consciousness may be and is gradually evolved. Instinct is the result of the transmission of accumulated habit—mind or consciousness is the correlation of instincts; and in the process of evolution it is the gradual evolution of the nervous system crowned by the brain which renders possible, not alone the organism with its various organs subserving the needful functions, but the evolution from a minute mass of living protoplasm of man, with a mind capable of pronouncing an opinion on work which must have been designed by another and a higher yet similar mind.

In the above criticism of M. Bergson's theory I have not taken into consideration his differentiation of intellect as exhibited in man, from intuition in man and instinct as exhibited in the hymenoptera, since structural conditions through the nervous development can be made to account therefor.

I am, Sir, yours faithfully,

Bridgetown, Barbados, Nov. 29th, 1911. R. F. LICORISH, M.D.

SECURITY OF TENURE FOR THE MEDICAL OFFICER OF HEALTH.

To the Editor of THE LANCET.

SIR,—I was glad to read the sentiments expressed in your leading article on this subject in THE LANCET of Feb. 3rd. What has happened to members of the Public Health Service since the issue of "The Sanitary Officers (outside London) Order, 1910," has proved that I was none too pessimistic as to its benefits when I wrote an article thereon which was published in THE LANCET of Feb. 25th, 1911, p. 542.

Cases such as those at Claypole and Edmonton do not occur with sufficient frequency to attract the attention of the lay papers and their readers, although one case is enough to dishearten *all* medical officers of health subject to three months' notice, and quite sufficient to discourage them from displaying any energy or honesty in their work. If the general body of ratepayers only perfectly understood what the present chaotic state of the law means to the detriment of their families and themselves, there would soon be an insistent and persistent demand that the Local Government Board should without delay amend the Order so that the tenure of office of the medical officer of health should be the same as that of the doctors who attend sick paupers.

Of course, everyone interested in the public welfare welcomes the recent instances of the Board's firmness in dealing with corrupt councils, which firmness is more effectual in the case of a whole-time officer, because in his case the half salary repayable to his council is a considerable sum and not a mere trifle (say £10 to £25) as in Claypole, Yorks. But an amended or new Order giving security of tenure to medical officers of health *whose whole time is engaged in public health work* would relieve the Local Government Board of this unpleasant duty.

Loss of office is sad but not serious for a part-time officer, for he has his private practice still for maintenance of himself and family, whereas to a man whose livelihood is entirely dependent on his official salary dismissal (although without just cause) brings about his complete ruin, especially if he is (as at Edmonton) over 50 years of age and therefore shut out by age-limit from applying for 90 per cent. of the appointments that may fall vacant.

I am, Sir, yours faithfully,

Feb. 6th, 1912. ENERGY.

THE MEDICAL PROFESSION AND THE NATIONAL INSURANCE ACT.

To the Editor of THE LANCET.

SIR,—In a letter published in THE LANCET of Jan. 20th I expressed an opinion that the present executive of the Association was too much in favour of the National Insurance Act, and only demurred to some of the medical provisions of that measure. I consider that opinion largely strengthened by the recent report of the Council to the members of the Association. Many of those who read carefully that—in my opinion—inaccurate and misleading document will have forced upon them a conviction that they who drafted and approved it must have views, to say the least, very different to those of a large number of the profession. There is no acknowledgment of error with regard to the Whitaker incident, although it has been so universally condemned by the profession that not even a representative meeting will be able to whitewash it. I do not wish, however, to re-open this subject. The sooner it is dead and buried the better, but I may instance its treatment in the report as evidence of how little the present executive care for outside professional opinion. No reasons are put forward stronger than those advanced in the inaccurate circular issued at the time, and approved at the last Council meeting. It would seem to be thought that weak and insufficient reasoning acquires strength and validity by frequent repetition.

Take, again, that portion of the report that the *Times* did us the honour to publish in its issue of the 3rd inst. The whole is a kind of appeal to the profession to accept the Act and work it for what it is worth, in spite of its admitted injustice to the profession. At the same time it suggests that if, notwithstanding the Council's good feelings towards it, certain conditions are not granted under the Act, it will itself advise the course it here condemns.

I take strong exception to some of the inaccurate and misleading statements. Speaking of the "suspension of medical benefit" (32): "It is only too probable that the great bulk of the insured would be quite content to receive a cash allowance which would enable them to join medical clubs of their own outside the Act, while the Friendly Societies would welcome it as practically restoring to them that full and complete control of their doctors which the Insurance Act had taken away." Not a word is said as to how many would utilise the money thus received in paying their private doctors' fees, as they do now, but it is gratuitously assumed the number would be very small. The suggestion that the "*great bulk*" would form "medical clubs of their own outside the Act" is, in my opinion, very misleading. "That the Friendly Societies would welcome it as practically restoring to them that full and complete control of their doctors which the Insurance Act had taken away" is, in addition, contradictory to previous official statements of the Association. It has over and over again been said that the Harmsworth amendment in reality gave back the control the Act was supposed to have withdrawn, and very few, with the exception of certain members of the Council, have ever regarded of the slightest good the modification of that amendment acquired by the Association at the latest stage of the measure, and which has been tabulated as one of the *gains* of the Association. There is no need to argue this point. The fact remains that in spite of this precious *gain* the representative meeting last November persisted in demanding the deletion of the Harmsworth amendment altogether, and the appeal sent up by the executive to the House of Lords amply proves this. "The last four lines of the subsection (15, 4) as finally amended in the House of Commons do, it is true, secure to a great extent free choice (?), *but in the opinion of the profession the whole subsection, even as amended, is undesirable in the public interest not less than that of the profession and should be deleted.*" If, then, the control of the doctors has been recovered by the Friendly Societies through the Harmsworth amendment, it is untrue to say that the suspension of medical benefit "would have the effect of practically restoring to them that full and complete control which the Insurance Act had taken away."

What, also, is to be thought of the following argument for the profession working the Act? "In short, suspension of medical benefit renders possible a vast extension of club practice for provident persons." If the profession accepts the working of the Act, and the panels are formed, a "vast extension of club practice" will not only be *possible*, but *certain*—a club practice far more degrading in my opinion than the present system, and far more deadly to the interests of the general practitioners of the country. After all, whatever the defects of the present system may be, it is in the hands of the profession at any time, if united, to reform it. But it will be otherwise when we have delivered ourselves up tied and bound in the meshes of this Act, to form a second-rate State Medical Service most injurious to our own interests, and of doubtful utility to the public.

I am, Sir, yours faithfully,

Feb. 3rd, 1912. MAJOR GREENWOOD.

To the Editor of THE LANCET.

SIR,—Why should a doctor be paid higher than a labourer? Each does work for the State to the limit of their abilities, and no man can do more. This is the socialistic argument. Everyone who has met Socialists has heard it scores of times, and it seems that Mr. Lloyd George has imbibed this particular idea, but he knows too much of the sturdy character of the British labourer to attempt to fix *his* income by Act of Parliament. He knows that there would at once be a strike, and that the labourers would hold together as one man, even though it meant a total suspension of income.

But that which he would never and could never have done in regard to the lower type of labour he has attempted to do to the higher, and so you have this idea not only fully carried out, but you have an extension of it, and a limit placed by Act of Parliament upon the income of the doctor which could never have been placed on the labourer The doctors have absolute power in their hands. Any man can be a labourer, but only trained men can be doctors. It takes many years to fit a doctor for his duties, but if the doctors stand shoulder to shoulder there is no Act of Parliament which can compel. It does seem absurd that all other people in the country are permitted freedom to sell their services at the highest price they can obtain according to the laws of supply and demand, but the doctors only should be specially selected to be excluded from this freedom.

If the medical profession know their own interests they will neither accept this Bill nor any amendment of it. There is one thing to fear, and that is, that if some new conditions beneficial to them are conceded they will be undermined gradually in the operation of the Bill, and that unless a determined stand is taken against it now we shall have the State

employing a staff of doctors at say, £150 to £200 a year, and the profession will sink to a lower level in Great Britain than in any other part of the world.

I am, Sir, yours faithfully,

ARTHUR E. BECK

King's Norton, Feb. 2nd, 1912. (Prospective candidate for Derby).

To the Editor of THE LANCET.

SIR,—The following views on the Recommendations of the Council of the British Medical Association, especially as regards the formation of an English Medical Insurance Council and of a National Medical Insurance Council, are shared by many medical men in Brighton and other districts. It is held that Recommendations 1, 2, and 3 should be omitted and that the following resolution be substituted:—

That the Council be instructed to notify H.M. Government through the Insurance Commissioners that the medical profession can take no share in the working of the Act until the six cardinal points are granted by law.

Recommendation 4 should be altered as follows:—

That the Council be instructed to make all necessary arrangements for assisting the Divisions and Branches in the appointment of provisional Medical Committees in every insurance area to safeguard the interests of the profession and to organise a national medical service under medical control.

Recommendation 5 should read:—

That the Council be instructed to take steps to organise the profession so as to secure that on and after July 1st, 1912, no person shall be able to secure medical attendance under a contract practice appointment held at lower rates than those which may be agreed upon as adequate by the Representatives for attendance upon insured persons.

Recommendation 6 should be altered to—

That an English Medical Insurance Council be formed from the British Medical Association and other medical bodies and a Joint National Medical Insurance Council for England, Scotland, Ireland, and Wales.

In conclusion, it is of vital importance that a meeting of English Representatives of the British Medical Association be held at once to exchange and focus opinions on their future action at the special Representative meeting on Feb. 20th. A similar course obtains in the groups and committees of M.P.'s in the House of Commons, and is perfectly fair and proper. It may be held that Recommendation 5 may mean the use of the "strike" weapon. Are we prepared for this? Is it humanly possible to call everyone out for such a purpose? What would be the consequences of failure? Would our *first* strike be likely to be successful? I think with good organisation we should win, and then we could present the public with a really efficient public medical service.

I am, Sir, yours faithfully,

Worthing, Feb. 6th, 1912. F. G. BUSHNELL.

To the Editor of THE LANCET.

SIR,—I have read all your leading articles on the Insurance Bill, and have been much impressed by the attitude of dignity and reserve you have taken up. For this reason I call your attention to a point which concerns more especially men like myself, the rank and file of country practitioners. My practice, and there are many others like it, is a very poor one, composed largely of club patients, the men being mostly in Friendly Societies, the women and children in personal medical clubs. Now, the Insurance Act cannot hurt us financially; it would probably benefit us. I am not a member of the British Medical Association; I have signed no pledge exploited by a journal, and have no intention of doing so. What line the best members of the profession decide is to be taken, that line I shall take—i.e., I shall stand by the profession. This remark was, however, made to me only yesterday by a large landowner and officer on the retired list: "It will be a great pity surely if 29½ thousand men try to wreck a measure designed for the national good because their pockets are touched." Now, Sir, the point I want to draw your attention to is this. Men like myself, who are trying under adverse circumstances to keep up the dignity of the practice of medicine and surgery, look to those above who have constituted themselves the champions of the profession to take their stand not only from a financial point. The fees of the consulting world are paid mostly as a matter of course; it is often the country practitioner who sees that they are paid promptly and without question. I think that consultants are hardly aware how difficult it is for the man in the country to maintain the professional standard. I express myself haltingly, I fear. What I am aiming at is, that in our differences with the Chancellor and his advisers we are making too much of the financial side, not enough of the fact that we are professional men like himself (only that the nation pays him a good salary and he has not to worry about ways and means), and that our services are no more to be exploited as the Government think fit than those of, say, members of the Bar. I am, Sir, yours faithfully,

EDWARD T. JONES, M.R.C.S. Eng.

Eastmeon, Hants, Feb. 5th, 1912.

To the Editor of THE LANCET.

SIR,—Is it not waste of time and money to hold a Representative meeting of the British Medical Association while we are in the dark as to the Commissioners' intentions, unless the intention of the meeting is to declare finally that we will not work the Act as it stands? Does the Council of the Association realise this? If the funds are so limited that the Commissioners cannot accede to our vital demand for adequate remuneration, why temporise further on side issues?

The Commissioners can, however, and conceivably would, suspend medical benefits in refractory areas or altogether, a result the Council appears to dread, as they consider this result would be extremely serious to the profession by rendering possible a vast extension of club practice for provident persons, and bad debts in the case of the improvident. To my mind this is a delusion. Some six million insurables are already in clubs, and it is practically certain that, as at present worked, this is not far from the clubable limit. Most of the medical officers would be unable, even if willing, to cope with a huge and sudden increase of membership.

At a crisis like this, with the state of feeling evidenced by the 26,000 signatures to the Association pledges, a large number of them would, I feel sure, be willing to fall in with the desires of the profession, as voiced by the Council, even to the extent of resigning their appointments. But this would not be necessary. They would simply be required to raise their terms to those declared equitable by the Council for working the Act. And does anyone believe they would hesitate to do so? Two or three thousand new medical officers might possibly be procured to work the Act at 4*s.* 6*d.* per head per annum, or at less than the Association rate, but to me it is quite clear that it would be utterly impossible to officer a vast extension of club practice, and there are nine millions to provide for. The bad debts of the improvident could be evaded by a refusal to attend except on a cash basis. Those unable to pay would, as at present, be cared for by the guardians, who would recover the costs later in the courts or from the rates.

If the Commissioners attempted to work the specially refractory areas this could be thwarted by a general refusal of the profession to work the other areas, not to mention financial aid to those locally hard hit. But the whole scheme is so much more than the mere provision of ordinary medical attendance, so interwoven with hospital treatment, for example, that the Commissioners, however tempted, would not be likely to force a deadlock. It is much more probable that they would report to the Government their inability to satisfy the profession.

If the Council really considers that the Commissioners can offer acceptable terms, why not wait until they are offered? Most of us consider they cannot, and will stand by our pledges.—I am, Sir, yours faithfully,

A HULL PRACTITIONER AND CLUB SURGEON.

Feb. 5th, 1912.

OXFORD OPHTHALMOLOGICAL CONGRESS.—This Congress will assemble at Keble College, Oxford, on Wednesday, July 17th next, and the meeting will be held on Thursday and Friday, July 18th and 19th. Members are reminded that cases and specimens will be welcomed. Mr. Sydney Stephenson, honorary secretary to the Congress, should be notified at 33, Welbeck-street, London, W., by any member willing to give any exhibition or demonstrate any operation. It is hoped that an "opaque projector" will be at the disposal of members for purposes of demonstration.

THE WAR AGAINST TUBERCULOSIS IN THE UNITED STATES.

(FROM OUR SPECIAL SANITARY COMMISSIONER.)

The War Budget.

THE National Association for the Study and Prevention of Tuberculosis in the United States is justly proud of the work it has accomplished. The third annual statement of the expenditure incurred has just been published and deals with the year 1911. The total outlay for the erection of new hospitals and sanatoriums as well as for the treatment of patients slightly exceeded the sum of £2,360,000. The examination and treatment of patients at dispensaries account for only £170,000. The work of propaganda carried out by numerous local associations and committees cost £100,000, and £260,000 were spent in discovering and treating cases in schools, prisons, asylums, and for the cost of special work against tuberculosis undertaken by the public sanitary authorities. Some other small details bring up the grand total for the year's outlay to £2,900,000. This expenditure, while not much larger than that of the previous year, is equal to nearly double what was spent in 1909. It must be borne in mind that a sensational agitation has been organised in the States. This has its merits and its accompanying defects. Anti-tuberculous travelling exhibitions were sent round the country and lecturers accompanied these shows. Thus a number of persons were attracted who otherwise would not have given the subject a thought. A great mass of people, ignorant of medical questions, were familiarised with some of the leading principles of ventilation, cleanliness, the danger of sputum, and other simple rules of health for the prevention of tuberculosis. At the same time, among those who were thus taught there were here and there a few persons who had at once the kindliness of heart and the financial means to give monetary assistance to the movement. But it is necessary to bear in mind that this is a new movement, a new revelation to the great mass of the population showing what could and should be done. Under the spur of surprise and the charm of novelty generous enthusiasm was evoked, organisers and lecturers gave their services gratuitously, and voluntary subscriptions poured in from all quarters.

State and Municipal Help.

Wisely it has been foreseen that this enthusiasm could not be expected to last. The novelty would wear out, the enthusiasts would tire of giving voluntary service, other agitations would arise, and other calls would be made on the purses of generous subscribers. A well-organised sensation is very fruitful but short-lived. Once the mass of people are familiarised with the benefits of open-air treatment and with the fact that tuberculosis can to a large extent be prevented, they will attend other lectures, go to other museums, and subscribe money to some more novel form of agitation. Therefore to secure permanent benefit, the movement, while it lasts, must be directed upon the central and local authorities. Pressure must be brought to bear to compel them to establish permanent institutions that will continue to exist when the attention of the public is diverted in some other direction. Thus it comes about that to-day the National Association for the Study and Prevention of Tuberculosis is better pleased by the increase in grants which the State legislatures and the local or municipal authorities have made than by the increase of voluntary subscriptions. Also it must be borne in mind that the prevention of tuberculosis is a matter that concerns individually every inhabitant. The cost of prevention should, therefore, not be left to a few public-spirited and generous individuals, but form part of the local and national burdens. Consequently, the National Association is particularly careful to point out that the percentage of money contributed by the public authorities is greater in 1911 than before. It then amounted to 66·2 per cent. of the total, while in 1910 the money spent from the public funds was 62·6, and in 1909 only 52·5 per cent. of the total. For the present year large grants or subsidies out of the public funds have already been voted, and this money will be employed in dealing with tuberculosis. Of these sums, £940,000 are "from State appropriations" and about £1,140,000 for county or local purposes. The Federal Government, over and above this State and local expenditure, devotes about £200,000 a year to maintain several special sanatoriums for treatment of tuberculosis.

The States that have Done Best.

Of course there is a very great difference in the attitude of the various State legislatures, just as in England we find the county councils widely differ from each other in enlightenment and enterprise. In expenditure for the prevention of tuberculosis the New York State comes first, having spent last year for this purpose £710,000. Of this sum £211,000 were derived from voluntary subscriptions and the rest came from the public funds—that is, from the tax-payer. Pennsylvania comes next with an anti-tuberculous budget of £451,000, of which £109,000 were due to voluntary gifts. In Massachusetts the outlay for last year—and all the following figures are for 1911—was £221,600, of which £58,800 were voluntarily subscribed. The fourth on the list is Colorado, but here the situation is entirely reversed. Denver is the capital of Colorado, and its delightful climate has attracted many phthisical patients. Nevertheless, the public authorities have done little or nothing for these sufferers. Certainly there is the excuse that it is a new city and a new State. In 1880 there were only 35,630 inhabitants at Denver. Ten years later this number had increased to 133,859, and by that time the inhabitants were able to afford £500,000 to build their State house, but after a further 11 years of increasing prosperity they could not be persuaded to spend more than £13,100 for the war against tuberculosis. On the other hand the voluntary subscriptions exceeded that of all the other States except the State of New York, for it amounted to £136,000. The contrast given by the next on the list is in precisely the opposite direction; the proportion of voluntary subscriptions is lower in Ohio than in any of the other leading States; it amounts to only £15,000 out of a total of £144,400. In Connecticut the total is £119,400, the voluntary share of this being £25,900. In New Mexico, again a new State, the voluntary share is very high, £69,100 out of £118,100. Illinois, which is becoming an old State—in any case it is middle West and not far West—has barely a quarter of its tuberculosis budget from private subscriptions—namely £20,719 out of £94,885. Finally, Maryland, one of the oldest States, is indebted to private subscriptions for only £14,800 out of £78,000.

Municipalities and Dispensaries for Tuberculosis.

Such is the list of honour showing the total amounts spent by the nine States which are in the forefront of the war against tuberculosis. The older the State, the more experienced in legislative work, the greater the proportion of the expenditure borne by the public purse. In the raw new States there is less organisation, and much more depends on the initiative and enterprise of private individuals. In the older States the law is more likely to insist that the whole community shall pay for public services, and that such services shall be organised. Thus last year the State of Massachusetts enacted a law that every town with a population of 10,000 or more must establish and maintain a dispensary for the discovery and treatment of poor people suffering from tuberculosis. The towns are to be fined each time they are called upon to establish such dispensaries and fail to do so. Those towns that also establish a special hospital for the treatment of tuberculosis can obtain from the Commonwealth £1 per week for every patient they treat, who cannot pay for himself.

In Chicago there is the same tendency. Up to September, 1910, there were seven private dispensaries served by 25 physicians and employing 10 trained nurses, and they discovered and assisted a large number of cases. Now, however, the municipality has taken over these dispensaries, and are building a municipal sanatorium for the reception of 350 curable cases. The dispensaries will discover suitable cases for sanatorium treatment and will control the patients after their discharge from the sanatorium. Two new dispensaries and two new night clinics have been opened and the nursing staff doubled. The number of patients seen at the dispensaries was 20,139 in 1910 and 25,263 in 1911. The visits made to the homes of the patients increased from 18,500 to 27,174 in the last two years. 35 per cent. of the patients examined at the dispensaries were found to be tuberculous. In all, 7697 cases of tuberculosis were reported to the Chicago Health Department in 1911 and 5149 in 1910. Out of the total 12,846 cases of tuberculosis notified during the last two

years 20 per cent. were reported by the tuberculosis dispensaries.

The Campaign in Pennsylvania.

One of the leading authorities on the question in the United States, Dr. Lawrence F. Flick, has recently issued a report on the progress of the campaign in Pennsylvania, which, it appears, began in 1892 by the formation of a Society for the Prevention of Tuberculosis. Before that time the harbouring of patients in the general hospitals and almshouses had helped to isolate advanced cases and thus prevent the spread of the disease. Dr. William Webb, however, taught that tuberculosis was contagious early in the "eighties," and Koch discovered the tubercle bacillus in 1882. As these new doctrines spread, doubts arose as to whether tuberculous patients should be admitted in general hospitals and almshouses, and in the course of time many special institutions were created. There are now in the State 14 charitable institutions with 600 beds, two public institutions with 1100 beds, and six run for profit with 100 beds. Then there are 125 dispensaries, and most of them give free milk and eggs to poor patients. Since the commencement of the campaign and up to 1911 Dr. Flick estimates that about £1,200,000 have been spent in Pennsylvania in the crusade against tuberculosis. Of this the amount contributed by private societies was a little over £400,000. The Commonwealth of Pennsylvania spent £600,000 and the city of Philadelphia £200,000; nearly two-thirds of the entire amount has been spent since 1907, and there are now about 1800 beds available for tuberculous cases.

Effect of Tuberculosis on the General Death-rate.

The statistics show, for instance, that whereas in 1870 at Philadelphia 3·42 and in Pennsylvania 2·13 per 1000 of the population died from tuberculosis of the lungs, these figures were reduced to 1·85 and 1·15 per 1000 respectively in 1910. Dr. Flick, however, insists that what with the change of views as to tuberculosis and the acceptance of the theory of contagion, there have been some suppression and change of nomenclature as to the cause of death, which must slightly affect the accuracy or comparative value of the statistics. Indeed, the word tuberculosis was not officially introduced in the nomenclature of the State before 1904, though it had been used unofficially some time previously. Then, again, many patients went away to a better climate who would now have spared themselves this trouble. The reduction in the death-rate from this disease has been greater in the towns than in the rural districts. Outside of Philadelphia and throughout the State the reduction since 1870 is estimated approximately at 48 per cent.

For the city of Philadelphia Dr. Flick has drawn up three tables. The first table contains the deaths which by common consent are undoubtedly due to tuberculosis. The third table contains deaths attributed to a great variety of diseases which are sufficiently similar to tuberculosis as to serve as a cloak to conceal the truth. Then there is an intermediary or second table where many names are also used, but which can with less hesitation be earmarked as tuberculosis. These three tables are so comprehensive as to include every death that has occurred during the 40 years which may be due to tuberculosis. The reduction in the "tuberculosis" table in the 40 years was equal to 41·6 per cent., and the "probably tuberculosis" 89 per cent., the mean being 68·7 per cent. More than one half of the reduction has occurred within the last ten years, but there has been no corresponding reduction in the death-rate from other diseases. On the contrary, excluding the "tuberculosis" and "probably tuberculosis" the death-rate was 14·31 per 1000 in 1870, 13·93 in 1880, 14·82 in 1890, 14·80 in 1900, and 13·50 per 1000 in 1910. By also excluding the "possibly tuberculosis" the death-rates during the same five years mentioned above are 8·04, 8·18, 8·11, 9·0, and 8·42 per 1000.

Isolation and Sanitation.

From his observations Dr. Flick concludes that the reduction in the death-rate largely depends on the isolation of "open, ulcerative, pulmonary tuberculosis." He therefore argues that in the campaign against this disease much simpler means might be employed. Before the scare about the contagious character of tuberculosis the open ulcerative cases were accepted in the general hospitals, especially during the final, and for the public the most dangerous, stages. Dr. Flick insists that isolation is the most effective preventive, but that it is not necessary to have special hospitals for this purpose. "It has been found," he says, "that advanced cases can be treated in any hospital with entire safety to other inmates of the hospital provided certain simple rules of cleanliness are strictly lived up to." If the sputum is properly disposed of the moment it is given off the patient can be made "non-contagious and be safely kept in any locality." Also the general hospitals are usually nearer to the homes of the people, so that less objection is raised to the separation caused by isolation.

It is strange that in all this, and while recording the great reduction achieved in the prevalence of tuberculosis, Dr. Flick has not a word to say about the general sanitary improvement which assuredly must have been accomplished during the last 40 years. One of the great advantages of the campaign against tuberculosis is that it touches on so many other matters besides the one disease. Poverty, filth, overcrowding, bad drainage, the pollution of air, the adulteration of food, the contamination of water, and the consequent reduction of human vitality—these are the conditions that favour disease and that prevail where tuberculosis claims the largest number of victims. As sanitation has improved so has the frequency of tuberculosis declined, and the same may be said of many other diseases. At the same time everyone will recognise that the more overcrowded and insanitary a district the more necessary it is to remove cases of tuberculosis that are so far advanced as to become centres of contagion.

MOTORING NOTES.

(FROM A SPECIAL CORRESPONDENT.)

Noisy Cars at Night.

THE Commissioner of Police for the metropolis has issued a most reasonable and courteous circular in which he points out the seriousness of needless use of sirens, open cut-outs, and multiple horns, especially at night time, and he appeals to all drivers to assist in diminishing this nuisance. The disturbance to all residents in London is undoubted, and it is certainly to be hoped that his appeal will have the desired effect.

The New Bosch Dual Ignition.

For the medical motorist it is an advantage to have a dual method of exploding the mixture of a petrol motor. To start off, possibly to a most urgent case, and to be delayed perhaps miles from a repair shop on account of ignition faults, is more than annoying. Of course, it can be argued that the modern magneto rarely gives trouble, and I quite admit it; but it may. In motoring, as well as in other affairs, the nnexpected occasionally takes place. It is thus as well to have, if possible, a dual ignition, and a very good one has been put on the market by the Bosch Magneto Co., Limited, of Newman-street, London, W. The apparatus consists of either a vertical or horizontal coil, the winding of which is similar in design to the armature of the Bosch arc-light magneto, and the spark produced is in every way as effective. The switch and coil are combined in one, so that external connexions between them are entirely dispensed with. A compound cable consisting of four differently coloured and highly insulated conductors is supplied, and most of the Bosch magnetos can now be converted to this dual system at a moderate cost. The device is provided with a locking arrangement guarding against the improper use of the car. This is important, for many medical men on their rounds leave no one to guard their automobiles while they are inside a patient's house, and it is a satisfaction to know that the "young fry" cannot start the car in addition to blowing the horn.

An Electric Car Cleaner.

In these days of cloth upholstery it is rather difficult to keep the interior of a landaulette clean, and therefore the "suction" cleaner, which dislodges dust that an ordinary brush will not reach, is useful. A suction cleaner, which is known as the "Nuway," is sold by the London Motor Garage Co., of Wardour-street, London, W., which is easily

attached to any electric light holder, and is, I understand, not extravagant.

Cost of Motor v. Brougham.

We have referred above to the experience of "F.R.C.S. Eng.," who now sends us the following additional details:—"*Cost of running a 15·9 h.p. Daimler limousine motor-car in 1911:*—

Total mileage	5650 miles.
For pleasure, about	1300 ,,
For professional purposes, about	4350 ,,
Total cost for year (including depreciation)	£306 9s. 7d.
Chauffeur	90 14s. 0d.
All other costs	110 0s 0d.
Depreciation 20 per cent. of £523 18s. 2d. (initial cost)	105 15s. 7d.
Total cost per mile, nearly	1s. 1d.
Chauffeur, per mile nearly	3·9d.
All other costs per mile	4·6d.
Depreciation per mile	4·5d.
Petrol used, approximately	280 gallons.
Miles per gallon, approximately	20 miles.
Car unavailable on account of re-varnishing and repairs	21 days.

The car was bought in June, 1910.

The *former cost of brougham and two horses* (one in morning, the other in afternoon) was:—

Total cost, including depreciation	£210 0s. 0d.
Mileage (all for professional purposes) about	4000 miles.
Cost per mile	1s. 0½d.

The limousine exceeds the brougham in appearance, readiness, speed, comfort, convenience, and exhilarates the mind, whilst driving in a brougham dulls it. I should not like to go back to the latter. Thanks to the chauffeur, the car looks almost like a new one."

BIRMINGHAM.

(FROM OUR OWN CORRESPONDENT.)

Tuberculosis Exhibition.

AT a meeting of persons interested in the campaign against tuberculosis, presided over by the Lord Mayor, it has been decided to hold an exhibition in June to demonstrate to the poorer classes how tuberculosis may be prevented. A large and influential general committee has been formed, containing representatives of the medical profession, the health committee, boards of guardians, city aid society, and the other agencies interested in the public health, with the Lord Mayor as president, to make the necessary arrangements for the success of the exhibition.

General Hospital.

The vacancy created by the resignation of Professor Robert Saundby as physician to the General Hospital has been filled by the election of Dr. J. W. Russell, the senior assistant physician. Dr. Russell has had a very long period of service in the out-patient department, and his appointment to the post of full physician will be a very popular one. He recently met with a severe accident, the motor-car in which he was riding colliding with a tramcar during a dense fog, but is now making good progress towards complete recovery.

Feb. 6th.

LIVERPOOL.

(FROM OUR OWN CORRESPONDENT.)

Liverpool Royal Infirmary.

AT the annual meeting of the Royal Infirmary held on Feb. 5th a highly satisfactory report of the year's work was presented. The fact was deplored that there was a debt of upwards of £8000 hanging over the institution, and an appeal was made for increased public support. Mr. Ralph Brocklebank was elected president for the ensuing year. Mr. Brocklebank is one of those public men who support the charities of the city, not only with their substance, but also with their personal services. He has been a member of the committee of the "Royal" for upwards of 35 years. For 30 years he discharged the onerous duties of honorary treasurer, and for five years he has been chairman of the committee. His practical knowledge of both the policy and administrative details of the infirmary is very extensive. It may be safely asserted that no Liverpool citizen is worthier of the honour conferred upon him by the trustees of the hospital. The Liverpool School of Tropical Medicine attached to the University of Liverpool, having felt that their important work could be carried on in a more satisfactory way if they had ward accommodation near to the University to enable the students to watch the constant changes in patients suffering from those diseases, approached the committee to see if such accommodation could be provided. Negotiations were now in progress, and it was hoped that they would result in the making of satisfactory arrangements. The value of the new out-patient department was amply demonstrated at the time of the great strike riot on Sunday, August 13th, when some 200 cases were brought to the hospital for treatment in about two hours. The sudden rush of so many surgical cases depleted the stock of dressings, &c., thereby putting the hospital to very considerable expense in replacing those articles. During the year electric lighting had been extended throughout the hospital and residential blocks, and the three lifts were also being electrified with a view to economy in working.

Liverpool Infirmary for Children.

At the annual meeting of this charity, held on Jan. 30th under the presidency of the Earl of Derby (Lord Mayor of Liverpool), the report showed that the number of patients treated during the year were: in-patients, 1338; out-patients (new cases), 15,590; attendances, comprising old and new cases, 55,308. Lord Derby, in noting that cognisance was taken in the report of the question as to whether the Insurance Act when it came into actual operation would affect adversely the finances of the hospital, said that he had not the slightest doubt that it would mean the withdrawal of a certain number of subscriptions; possibly not quite so many as people thought, but there was certain to be a reduction. He did not want to enter into political matters, but the question was whether when the Act came to be amended, as amended it must be, as nearly every Act was, by having the rough corners knocked off it, it would not be found that some contributions paid under it would find their way from the State through the individual to the hospitals. He should vehemently oppose the State or the municipality having anything to do with the management of voluntary hospitals because, in the first place, it would kill voluntary effort, which was the essence of the good work of those institutions; and, secondly, from what he knew of Government departments it would certainly mean increased expense.

The Lancashire County Council and the Danger of Vaccination Exemptions.

At the quarterly meeting of the Lancashire county council held on Feb. 1st, on the motion of Mr. Robert Sephton, the chairman of the public health committee, it was resolved to support the Cumberland county council in drawing the attention of the Local Government Board to the grave menace to public health disclosed by the large increase of exemptions obtained from vaccinations since the year 1903, the increase in the administrative county being about 600 per cent., or from 3 per cent. to 21 per cent. of the births.

Runcorn Sanitation.

Mr. Tulloch, Local Government Board inspector, held an inquiry last week into the application of the Runcorn urban council to borrow £8000 for sanitary works in the town and £2000 for water-main extensions. Considerable opposition was forthcoming to the first part of the application from property owners. The authority proposed to serve notices on the owners of a large number of houses, compelling them to convert the existing ashpit privies to the water-carriage system. If the notices were not complied with the council would do the work and bear half the cost. There were 2600 ashpits in the town. The property owners urged that the cost of the conversions was excessive. The inspector said that property owners who did the work themselves and paid the whole cost need not confine themselves absolutely to the specifications, but were bound to do the work to the satisfaction of the council. There was no opposition to the application for a loan for water purposes.

Feb. 6th.

NEWCASTLE-ON-TYNE.

(FROM OUR OWN CORRESPONDENT.)

The Insurance Act: A Local Member's Views on the Profession.

DURING January Mr. J. M. Robertson, M.P., Parliamentary Secretary to the Board of Trade, held several meetings in his constituency, the Tyneside Division. His first meeting was held on Jan. 15th, and dealing with the opposition to the Insurance Act he remarked "that the measure was perhaps a little ahead of public opinion. They could not change society without pinches and wrenches somewhere. The healing profession had shown more readiness to cry before it was hurt than any other section of the community. It was an unfortunate fact that the bulk of the profession were Tories, the reason being that they had to give so much time to the laborious training needed for their own profession that they knew very little about anything else—he meant in a public way. They were the worst set of politicians in the country and never seemed to find time to make themselves good politicians. The majority of them were probably Tariff Reformers, and it was on that ground, he was afraid, that they had been so ready to set up all that violent and furious opposition to the Insurance Act. If it had been a proposal to levy a tax to make the people's food and boots dearer there would have been no meeting of doctors to protest. They would have said nothing."

This quotation is from the local press, and the effect of this account of the meeting was what might have been expected. Members of the medical profession wrote to the press controverting the various statements, one of the most prominent of such letter-writers being Dr. Mears, of North Shields, who dealt with the points of Mr. Robertson seriatim, and denied the statement that most doctors were Tories and Tariff Reformers,

A day or two later at another meeting, Dr. T. L. Bunting being in the chair, Mr. Robertson said: "He thought that medical men had been strangely ready to cry before they were hurt. If here and there the position of the doctors was found to be a little worse measures would promptly be taken to remedy the evil. His own belief was that the income of the profession would be considerably added to." At the end of Mr. Robertson's address Dr. Bunting observed he was sorry that Mr. Robertson had made an attack on the profession, adding, "Honestly, I do not think he understands it." The chairman went on to point out that if the way of living of any other section of the community, say the miners, had been altered by a Bill without any previous consultation there would have been a great ferment. He did not think the attitude of the profession was dictated by their politics, except in the case of a few extremists. He was quite sure that a number of doctors were going to suffer heavily, and he wished to protest against what he thought was to some extent an attack on the honour of the profession to which he belonged. Mr. Robertson, replying to this criticism, considered that it was the generosity of the chairman which made him take a chivalrous stand. He repeated that those who were concerned about the Act did not believe that the doctors would suffer, and that if here and there under special circumstances the doctors were worse off, remedies would be applied.

Further letters have appeared in the press concerning Mr. Robertson's views, and in one of his speeches Mr. Robertson described the medical criticisms as "childish," based on Tory feeling against a Liberal measure, and that he did not propose to deal with them in the press but to leave himself to the judgment of his constituents.

The net result of the remarks of the honourable member has been to create a feeling among the profession that no medical man should in the future support Mr. Robertson by taking the chair at his meetings. Mr. Robertson has had three medical chairmen, which ought to have proved to him that medical opposition to the measure is not founded upon party politics.

Proposed Tuberculosis Dispensary in Newcastle.

A conference of representatives from the city sanitary authority, the board of guardians, the Royal Victoria Infirmary, the Dispensary, the Hospital for Sick Children, the Northern Counties Hospital for Consumption and Diseases of the Chest, and the Northumberland and Stannington Sanatoria, was held on Jan. 19th in the council chamber at the Town-hall, Newcastle-on-Tyne. Sir Henry Newton presided. A statement was submitted from the medical officer of health, containing an estimate for the requirements of a tuberculosis dispensary to be established in the centre of the town. The cost was estimated at £1500 per annum. Sir George Hare Philipson proposed, and Dr. T. Beattie seconded, the adoption of the draft scheme, with the substitution of three advisory medical officers at £50 per annum each for the proposed two officers of the scheme. An amendment was moved by Dr. T. M. Allison, seconded by Dr. A. T. Wear, that instead of three advisory officers there should be six honorary officers. The amendment was lost and the original motion carried by a large majority. The further procedure in this business will be the submission of the scheme to the sanitary committee and then to the city council for confirmation. No doubt should the matter be confirmed there will be more details of the scheme set forth than have been given to the public up to the present.

The Scourge of Phthisis: Workmen and the Barrasford Sanatorium.

A meeting has recently been held between representatives of the committee of the Newcastle and Northumberland Sanatorium (Barrasford) and the representatives of the Medical Charities Fund of the various works on Mid-Tyne, for the purpose of the provision of maintenance of patients from the Mid-Tyne district requiring sanatorium treatment. Up to the present the sanatorium has not been one of the charities benefiting under the Medical Charities Fund, and the object of the meeting was to awaken interest in the efforts made at Barrasford to combat the disease of tuberculosis. Sir George Hare Philipson occupied the chair, and there were representatives from the great works on Tyneside. Councillor Smith (of the Newcastle corporation), in the course of his remarks, explained that to some extent the Newcastle corporation had led the way locally in the campaign against the disease by taking 20 beds in the sanatorium at a total cost of about £2000 per annum. After the discussion which followed it was considered that the best way to raise money for this particular purpose was that of a small levy among the workmen, and the meeting concluded with a discussion as to ways and means.

Feb. 6th.

WALES.

(FROM OUR OWN CORRESPONDENTS.)

The Welsh National Memorial.

THE promoters of the Welsh National Memorial to King Edward VII. set themselves the task of obtaining the sum of £300,000, and proposed to capitalise that amount and use the income in carrying out measures having for their object the prevention of, and they hoped the extermination of, tuberculosis within the Principality. The fund now amounts to nearly £200,000, and £178,000 have been invested. The introduction of the National Insurance Bill, including as it did provision for the treatment of tuberculosis, had the effect of diminishing very largely the number and amount of public subscriptions, but now that Insurance Commissioners for Wales have been appointed, and the distribution of grants for sanatoriums and other institutions will be largely in their hands, it is anticipated that further subscriptions to the Memorial Fund will be forthcoming, especially as it is understood that grants under the Insurance Act will be dependent upon the amount of local support obtained for sanatorium and other purposes. Active steps are being taken to incorporate the National Memorial Association by Royal charter. The work already carried on by the association includes an educational campaign by means of lectures, the distribution of literature, and by a travelling tuberculosis exhibition. Arrangements have been made to take over the West Wales Sanatorium at Alltymynydd in Carmarthenshire, which was opened in 1905, and the Penhesgyn Open-air Home in Anglesey. Twenty-five nurses are to be specially trained in tuberculosis work to act under the auspices of the association in different parts of the country.

The Classification of Paupers.

A further step has been taken by the Poor-law authorities in the three West Wales counties of Carmarthen, Cardigan,

and Pembroke in the direction of classifying on an extended scale the occupants of workhouses. At a conference of delegates from the various boards of guardians held at Carmarthen on Jan. 27th the Poor-law inspector of the Local Government Board, Mr. Hugh R. Williams, said that unless the guardians tackled the question of the feeble-minded it was probable that some other authority would be entrusted with it. In the 13 unions in the three counties there are 212 imbeciles and feeble-minded, 76 being in workhouses. The asylum authorities, in Mr. Williams's opinion, should deal with dangerous lunatics and the Poor-law authorities with the harmless and incurable, and of the two last-named there are a sufficient number in West Wales to justify the provision of a common home. He suggested that the Lampeter and the Tregaron workhouses might be used entirely for special purposes, the latter possibly for consumptives. With more general and complete classification he considered it would be possible to do away with half a dozen of the existing workhouses. The members of the conference passed a resolution to the effect that the time was ripe for the serious consideration of the condition of harmless lunatics and of the feeble-minded, and a committee was formed to draw up a scheme for more complete classification.

Infantile Mortality in Brynmawr.

In his annual report for 1911 the medical officer of health of Brynmawr, Mr. J. L. Thomas, states that the high death-rate among young children, which was equal to 145 per 1000 births, was due in great measure to the prevalence of diarrhœa during the summer months. Having in mind the important part played by improper feeding in this disease he adopted the novel method of distributing information as to the right method of feeding and rearing infants through the school children. But instead of giving them printed circulars to take home he caused appropriate instructions to be dictated to them. They then made a fair copy and took this to their homes, and it was hoped that this course would be more likely to impress both the children and the parents than if printed matter was distributed.

Feb. 6th.

SCOTLAND.

(FROM OUR OWN CORRESPONDENTS.)

The Edinburgh Royal Colleges and the Conference.

A MEETING of the Royal College of Surgeons of Edinburgh was held on Wednesday, Jan. 31st, to consider the invitation which had been received to attend a conference with the Insurance Commissioners. The meeting decided not to appoint representatives to attend the conference, but while declining the invitation, agreed that the Commissioners should be informed that some time ago intimation was made by the College to the Chancellor of the Exchequer that the medical provisions in the Insurance Bill were so unsatisfactory both to the interests of the public and the medical profession that, in its view, this part of the Bill should be withdrawn. To this opinion the College still adhered. The Royal College of Surgeons of Edinburgh was, however, willing to render any assistance in its power to the Commissioners should they determine to exercise their statutory powers in altering the terms contained in the Act, or to aid the Government in drafting an amending Bill, which would safeguard the health of the public and preserve the educational and professional interests of those whom the College represented.

A meeting, called for a similar purpose, was held by the Royal College of Physicians on Thursday, Feb. 1st, but some minutes before the hour of meeting a telegram was received from the secretary to the Commission intimating that the conference was "postponed." On the President taking the chair, he intimated the receiving of the telegram, and left it to the College to determine what their action should be under the circumstances. The College decided not to discuss the matter, but to pass from the special business for which the College had been called to meet. So, for the present at least, the question of a conference has ceased to trouble the mind of the profession in Scotland. How much opinion in Edinburgh may have been influenced by the strong lead given by the Royal College of Physicians of London, which met on Tuesday, Jan. 30th, it is impossible to estimate accurately, but the honour of priority lies with the London physicians, and they have the satisfaction of having had their action endorsed.

The Scottish Medical Insurance Council.

The Executive Committee which was appointed to take steps for the calling together of this body has issued to every practitioner in Scotland a copy of the statement. The statement indicates the steps by which combined action was arrived at and the constitution of the council which it is proposed to set up in Scotland. The council is to consist of one or more representatives from the insurance areas, as these are already defined in the Act; of the Scottish Committee of the British Medical Association; of representatives of the Universities; and of representatives of the Scottish medical corporations. This council when it meets will have to determine what policy is to be followed, and will select an executive to carry out its policy. The practitioners in the areas are requested to nominate suitable men from their respective areas, and to facilitate this being done each practitioner has been supplied with a nomination form; each person nominated must have both a proposer and seconder. The nomination papers have to be sent in to the secretary of the British Medical Association division in which the area is situated, and to facilitate this being done by those who are not members of the British Medical Association there is a list of the insurance areas showing the division in which each area is placed and giving the name and address of the divisional secretary. Every endeavour has thus been made to make the arrangements as simple as possible. After the nominations have been received voting papers will be sent out.

Measles at Inverallochy.

The public school at Inverallochy has been closed on account of an epidemic of measles. Over 30 per cent. of the pupils were absent, principally from the younger classes, the infant department being practically without pupils.

Contaminated Water at East Wemyss.

At a meeting of the Kirkcaldy district committee held on Jan. 27th, Dr. A. L. Currie, medical officer, reported on three deaths which took place at East Wemyss some time previously. The deaths took place after a dance, at which seven people had drunk water from a burn running through the village, which had been brought in for the purpose of washing dishes. Three of the seven had died, and Dr. Currie believed that their deaths were caused by the contaminated water they had drunk. There was a water famine in the district at the time. It was ultimately remitted to the clerk to consider who was responsible for the cleaning of the burn.

Honour to Dr. W. Simpson, of Buckie.

In presence of a large and representative gathering in the Masonic Hall, Buckie, on Feb. 2nd, Dr. W. Simpson was presented with a pony and trap and a silver salver in recognition of 40 years' service in the district. Ex-Provost Webster made the presentation, and in doing so said that it had arisen from a spontaneous desire on the part of Dr. Simpson's many friends to mark in some way their respect and esteem for him and their appreciation of his long period of service, over 40 years, in the community. Forty years was a long period in the life of any man, and in Dr. Simpson's case it represented 40 years of the best part of his life spent in their midst. Dr. Simpson's reply was an eloquent *résumé* of 40 years of country practice.

Dr. Thomas Wright, of Wick, has been appointed one of the medical referees under the Workmen's Compensation Act, 1906, for the sheriffdom of Caithness, Orkney, and Shetland.

The death occurred on Jan. 21st, at Tannadice, of Dr. David Kydd, at one time a well-known medical practitioner in Forfarshire.

Feb. 6th.

IRELAND.

(FROM OUR OWN CORRESPONDENTS.)

The National Insurance Act.

THE Conjoint Committee of the British and Irish Medical Associations has issued a circular to members of the profession calling attention to the position of Ireland under the Act. It is remarked that under the Act, which comes into force on July 15th, no work will be required of the profession until January, 1913, and then only certificates. The question of remuneration for these will require careful consideration.

The compulsory section which was in the original Bill is *not* in the Act. Owing to the elimination of "medical benefit" there is outside the Act a great danger of a widespread and immediate introduction of contract practice absolutely under the control of Friendly Societies with enormously augmented membership. Later on approved societies with sufficient funds may introduce "medical benefit" as an "additional benefit." This may be administered under the same conditions as "medical benefit" in Great Britain, but the Irish Commissioners have power to leave the administration in the hands of the Friendly Societies, which, of course, would be directly opposed to the interests of the profession. For the present no arrangements of any sort should be made with Friendly Societies without first communicating with this committee. Further, the profession in Ireland has no voice in the selection of the medical men who are to serve on the Insurance Committees, as is conceded in Great Britain.

The Irish sense of humour has been tickled by the appearance in the Irish papers of advertisements by the Insurance Commissioners for applications from friendly societies, trade unions, public bodies, or other bodies desiring to become approved societies under the Act for the service of lecturers on the Act. It is proposed to form classes in Dublin and Belfast and other large centres where officials of existing organisations may receive special instruction. The Parliamentary Committee of the Irish Trades Congress has passed a resolution requiring the extension to Ireland of medical benefits under the Insurance Act. Mr. John Dillon, M.P., defending the Nationalist Members of Parliament for not allowing medical benefits to extend to Ireland in a letter published on Jan. 31st, says the Old Age Pensions and the Insurance Act have laid the basis for the abolition of the Poor-law system in Ireland; and that, in all probability, the decision of the Irish people will be to apply medical benefit in conjunction with a reform of the dispensary system.

The Women's National Health Association and the Insurance Act.

The proposed Irish Health Society under the Insurance Act was brought before a special meeting of the Enniskillen branch of the Women's National Health Association on Jan. 31st, Mrs. E. M. Archdale presiding. After Mr. Alexander Irwin, LL.D., of Coleraine, who had been specially sent, had explained fully the working of the Act, the lady who presided said she would not like to advise anyone to join this proposed Irish Health Society without being able to tell them its advantages over other societies. With one dissentient the committee decided not to undertake as a branch the working up of the Irish Health Society.

Esperanto and Medical Study.

At a meeting of the Dublin University Biological Association last week Mr. G. Jameson Johnston gave an address on the Use of Esperanto in Medical Study. He pointed out that it was not intended as a universal language but merely an auxiliary language. The Provost of Trinity College, who was present, joined in recommending the study to medical students. The next British Esperanto Congress is to be held at Portrush at Whitsuntide.

Association of Fellows of the Royal College of Surgeons.

The annual dinner of the Association of Fellows of the Royal College of Surgeons was held last week at the Dolphin Hotel, Dublin, under the presidency of Lieutenant-Colonel F. G. Adye-Curran, R.A.M.C. (retired). The principal speaker was Mr. Frederick Spicer, of London. Discussing the reasons why more Fellows of the College did not join their association, he said it was due to either ignorance or inability to appreciate the objects for which they had been working. There might be some exception taken to their original founders, and it seemed to be feared that they were a discontented lot of revolutionists, ready to pull down everything in order to get something out of the ruins. On the contrary, they claimed to be equal members of an ancient and honourable College, of whose name they were justly proud and jealous. They were banded to aid and assist the College in every way and to promote her interests. But financially the state of affairs was rotten. Professors were underpaid, and work was starved for want of money. Fellows of the Royal College of Surgeons in Ireland, however eminent they might be, were insulted and flouted in England, and were not eligible for, and were shut out from, surgical appointments in that country, which were kept for a little clique of the Royal College of Surgeons of England. Certain English hospitals made it a condition of appointment that the applicant be a Fellow of the Royal College of Surgeons of England, which debarred the Irish and Scotch diplomates. The Association of Fellows of the Royal College of Surgeons in Ireland protested against such invidious distinctions, and pointed to the fact that some of the most eminent surgeons in England at present were Fellows of the Irish College. The chairman called attention to the National Insurance Act, and expressed the hope that the Government might see its way to introduce during the coming session some sort of an amending Bill which would render it more acceptable to the profession at large. Speeches were also made by Professor J. A. Scott, Mr. Andrew Smith, J.P., Mr. John O'C. Delahoyde, Mr. Andrew Charles, and Mr. Shepherd Boyd.

Health of Belfast.

The report presented to the city council of Belfast on Feb. 1st, regarding the health of that city between Dec. 17th, 1911, and Jan. 13th, 1912, showed that the death-rate from all causes had risen to 17·9, while the zymotic rate was 1·2 and the mortality from chest affections was 5·2. The notifications of all infectious diseases except erysipelas, of which 20 cases were notified, had diminished. There is a marked decrease in the reported cases of scarlet fever and diphtheria. Two cases of typhus fever were also notified.

Infantile Paralysis to be a Notifiable Disease.

At a meeting of the city corporation of Belfast on Feb. 1st it was decided to add infantile paralysis to the list of notifiable diseases.

Forster Green Hospital for Consumption.

At the sixteenth annual meeting of this hospital, held in Belfast on Jan. 31st, the medical report showed that at the beginning of the year there were 49 patients in the hospital, and that 297 were admitted, thus making a total of 346 treated during the year. On an average the patients remained between 10 and 11 weeks in hospital, a period shorter than in former years, chiefly owing to the fact that the corporation patients are admitted for only three months, at the expiration of which they are discharged. The idea of the health committee of Belfast in making the time of residence in hospital so short is to give the benefit of sanatorium treatment to a larger number of consumptives, but in the case of hopeful patients making good progress the time is much too short to ensure a permanent arrest of the disease, and in many such cases the physicians of the Forster Green Hospital report that they have witnessed a relapse of the disease after discharge in cases which might have been permanently cured. During the 12 months the amount received in subscriptions had fallen off, while owing to the increased price of provisions ordinary expenditure had increased, as well as special expenditure in repairing the buildings.

Feb. 6th.

NOTES FROM SOUTH AFRICA.

(FROM OUR OWN CORRESPONDENT.)

The Squatters Bill.

IN connexion with the labour shortage both mine-owners and farmers have been agitating for legislation that will increase the present labour supply in South Africa, and the result of the agitation is now seen in a Government Bill published a few days ago—the Squatters (Native) Bill. At the present time there are many thousands of native families occupying portions of farms and earning a living by tilling the soil and paying rent to the owners. It is true that in many cases exacting landlords demand a rental which renders it well-nigh impossible for the native tenants to subsist, and that a number of other abuses have crept in, but still there is no justification whatever for some of the proposals in the measure, and particularly for the main principle which appears to aim at driving native tenants off the lands into native locations with the object apparently of forcing them to work in the mines or on the farms. In the former case they have to work under the unhealthy conditions of labour prevailing in the gold mines, or in the latter for farmers—who include some of the greatest sweaters of labour in South

Africa. This Bill may drive into pauperisation and misery many thousands of natives, yet it will probably be passed.

White Nurses for Natives.

At a meeting of the board of the Kimberley Hospital the other day the Mayor of Beaconsfield moved a resolution protesting against the employment of European female nurses in wards where male natives are under treatment. Dr. J. E. Mackenzie offered a spirited opposition to the proposal, and made it clear that there was no proof whatever that what is called "the Black Peril" is affected in any way by the professional contact of white nurses with coloured men. He showed, indeed, that the record of this class of crime is all against the idea. The proposal did not find a seconder, and the discussion, owing to Dr. Mackenzie's attitude, quickly fizzled out. Unfortunately, the lay press seems inclined to take the matter up.

Rabies in Rhodesia.

At the present time there is occurring what threatens to be one of the most serious outbreaks of rabies in Rhodesia which the Government of that country has had to face. Since the epidemic some years ago, when the whole country was practically swept by the disease, a few cases have appeared here and there, but confined for the most part to the Victoria district. Now, however, the disease appears to be spreading throughout the adjoining districts. Quite a considerable number of persons have had to be sent to the Government bacteriologist at Salisbury to undergo inoculation after being bitten by dogs which have been proved, or are believed, to have been rabid. The Government Veterinary Department now adopts the plan, upon an outbreak of rabies, of compelling owners of dogs in an infected district to tie their animals up, and the police and private citizens are empowered to shoot on sight any dog found at large. Despite this step, however, the disease appears to be spreading, and if it is to be stamped out more stringent steps will have to be taken.

Whaling on the South African Coast.

During the past two years it has apparently been realised that there is a rich living to be made in connexion with whaling operations on the coast of South Africa, for a number of whaling stations have been established, and numerous applications for fresh sites on which to establish new stations have been made to the Government. Unfortunately, the existing stations have been under no sort of supervision, and most of the structures that have been erected are wooden ones. The process apparently consists in boiling down by steam the whale blubber, bones, and meat. The stations have become saturated with oil and grease and emit a stench that is apparent for miles around. As a result local authorities have opposed most of the recent applications for sites and industrial enterprise is driven away. If it were recognised that a factory, built of reinforced concrete and with a modern automatic plant, could be worked even in the warm climate of South Africa without becoming a nuisance, it is probable that those who are responsible for the antiwhaling movement along the coast would change their attitude and welcome the establishment of the same. It is understood that a modern factory is to be established at Luderitzbucht, in German South-West Africa, and perhaps this will provide the necessary object-lesson.

Death of Mr. H. C. Keilly-Flynn.

Mr. H. C. Keilly-Flynn passed away in Pretoria a few days ago after a short illness. He was generally believed to be a medical man, but as a matter of fact was unqualified, though he had studied medicine in Dublin in 1838. He appears to have been originally appointed surgeon, in the free and easy method prevalent at the time, to the 17th Lancers, and came out to South Africa in that capacity, and on the return of his regiment he relinquished his commission and remained in the country. In 1877 he was in practice in Rustenburg, and hoisted the first Union Jack which proclaimed the annexation of the Transvaal in 1877. In 1881 Mr. Flynn brought this flag into Pretoria, and on August 2nd buried it in the presence of the garrison after a coroner's verdict had been returned of "Death due to a wrong diagnosis of Boer character and general bungling of one man at home." A wooden tablet with an inscription ending with the word "Resurgam" was placed over the grave. When the British troops entered Pretoria on Sept. 25th, 1900, the deceased was elected by the English inhabitants to present an address to Lord Roberts, and the flag was dug up and presented to the colonel of the 21st Lancers. Deceased had at one time many patients, but he was better known for his literary attainments. He was a patriot in the true sense of the term, and suffered for his patriotism. The news of his death has been received with genuine regret by a host of friends and by many erstwhile enemies, who have come to realise the sterling worth of his somewhat rugged character.

A Sanatorium for Miners' Phthisis.

The sanatorium for miners suffering from miners' phthisis, which has been erected at a cost of £52,000 at Modderfontein, was opened recently by the Administrator of the Transvaal. The sanatorium is a two-storeyed building, built in the shape of a crescent, facing north. There are four six-bedded wards on each floor and a number of smaller wards. The buildings are admirably suited for the purpose for which they are intended to be used, but it should have been possible for more accommodation to be provided for the money. The medical superintendent is Dr. J. C. Mitchell, late Government bacteriologist and pathologist of the Transvaal.

South African Medical Congress, 1912.

The preliminary arrangements have been completed for the next South African Medical Congress, which is to be held in Johannesburg during Easter week next. An entertainment committee is busily engaged in arranging a programme of entertainments, but it is sincerely to be hoped that festivities will not be permitted, as is so often the case at these gatherings, to interfere with the real business of the Congress.

Dec. 27th, 1911.

NOTES FROM INDIA.

(FROM OUR OWN CORRESPONDENTS.)

Sanitary Administration in Bengal.

FROM the report of the Sanitary Commissioner for the Province of Bengal we learn that in 1910 the birth-rate was 39·72 per 1000, an increase of 1·93 over the rate for the previous year, due to an improvement in the health of the population and a greater abundance of food-supply. The death-rate, however, was also higher, 33·10 compared with 30·55 per 1000, owing to the prevalence of cholera and plague. These ratios are based on the figures of the 1901 Census—viz., 50,521,604. According to the 1911 Census the population amounted to 52,457,011, but the figures are not yet available for statistical calculations.

Among the populations of India there is a natural increase in their numbers with favouring conditions of the food-supply and of health, which under the peaceful Government of the British *raj* would soon produce a state of overcrowding were it not for occasional epidemic visitations. Bengal, however, has by no means the most prolific population, as in the Central Provinces the birth-rate was as high as 55·42 per 1000, the highest recorded during the last 30 years, and the result of a healthy and prosperous season in 1909. In the United Kingdom the years are nowadays always healthy and prosperous in regard to essentials, yet the birth-rate has fallen to 25 per 1000 in 1910. The statistical figures indicate the point of view of the people; the poorest Bengali considers it a disgrace not to have a family, and has no anxiety as to its maintenance after the period of childhood, a matter which he entrusts to Providence and the Government.

The higher mortality in Bengal during 1910 was due to the prevalence of fever, cholera, and plague in some districts. The town of Jamalpur had a death-rate of 62·82 per 1000, 41 per 1000 being due to these three diseases. Monghyr lost 60·53 per 1000, the deaths from plague amounting to the very high proportion of 28·51. Throughout the province generally the agricultural out-turn was satisfactory, food was cheap, and a further rise in the birth-rate may be expected. Cholera prevailed throughout the province in 1910, especially in Bihar, the death-rate from this cause being 3·21 for Bengal as a whole, and 9·15 for the district of Shahabad. Patna and Muzaffarpur suffered nearly as badly; deficiency of proper water-supply and fouling of surface wells are the principal causes. Treatment of the wells with permanganate of potash is getting to be adopted and appreciated. The death-rate from small-pox showed a great decrease, the mortality

being only 0·14 per 1000, compared with 0·52 for the preceding five-year average. There was, unfortunately, an increase in plague, which caused 46,584 deaths, or a mortality of 0·92 per 1000, compared with 0·23 in the previous year. This increase was chiefly due to a limited prevalence in the Tirhut and Patna divisions, the rest of the province suffering but slightly. Evacuation is stated to have been the most popular means of prevention, disinfection and rat destruction being also carried out. The heading of fevers accounts for more deaths than all other causes put together—namely, 20·42 out of a total mortality of 33·10; this was, however, the lowest ratio for many years past, and well below the quinquennial mean of 22·79. A special malarial committee has been constituted to deal with the problems connected with fever prevalence in the province, and a medical officer and assistant surgeon have been selected to make a particular study of the subject.

Sanitary works in the way of improved water-supplies and drainage schemes are being carried out as funds permit. It is very satisfactory to learn that septic tank installations have proved a success; it is stated that these sanitary appliances are extremely efficient and, speaking generally, very well looked after. This excellent result is, no doubt, largely due to the good work that has been done in this branch of sanitary science by Major W. W. Clemesha, I.M.S., the Sanitary Commissioner, who has made it his especial study, and who is to be congratulated on the issue of this, his first, annual report.

Plague in India.

The plague statistics for the whole of British India for the week ending Dec. 23rd last show 8643 seizures, resulting in 7189 deaths. The provincial figures were: Bombay, 1886 deaths; Madras, 261; Bengal, 329; the United Provinces, 1934; the Punjab, 37; Burma, 41; and the Central Provinces, 830. There were 317 fatal cases in Mysore, 1504 in Hyderabad, and 44 in Rajputana. No cases of plague occurred in Eastern Bengal, Assam, or the North-Western Frontier Province. For the week ending Dec. 30th there were 9932 seizures and 7903 deaths from plague in all India, of which Bombay returned 1816 deaths; Madras, 302; Bengal, 947; the United Provinces, 1798; the Punjab, 141; Burma, 31; the Central Provinces, 822; Central India, 312; Mysore, 299; Hyderabad, 1378; and Rajputana, 50. No cases occurred in Eastern Bengal, Assam, the North-Western Frontier Province, or Baluchistan.

St. John Ambulance Association at the Durbar.

His Majesty the King Emperor has been pleased to bestow his Coronation Durbar medal on Major R. J. Blackham, R.A.M.C., in recognition of special services at the Coronation Durbar at Delhi. Major Blackham was commandant of a Coronation Durbar Contingent of the St. John Ambulance Brigade, consisting of nearly one hundred of all ranks, which served at Delhi throughout the Durbar period—i.e., nearly a fortnight. The contingent was well equipped in every respect and had the following transport establishment—viz., 3 transport carts, 15 ambulance carts, 36 transport ponies, and 30 riding ponies, specially provided for the occasion by His Highness the Maharaja of Jaipur. The St. John men were officially recognised by the Durbar authorities and were attached to the Civil Ambulances, under the command of Colonel C. J. Bamber, C.V.O., I.M.S. They rendered valuable services to many hundreds of cases and were fortunate enough to be on the scene at the only two serious accidents which occurred in the immediate vicinity of Their Majesties. This is the first occasion on which voluntary ambulance workers have been officially employed in India.

Jan. 10th.

AUSTRALIA.

(FROM OUR OWN CORRESPONDENT.)

Health of Queensland.

THE annual report of the Government statistician for Queensland states that the total population on Dec. 31st, 1910, was 599,131. The general prosperity of the past few years was reflected in the marriage-rate, which was the highest for 30 years. The recent State-aided immigration probably contributed to raise the rate. The birth-rate, 27·3, was satisfactory, and illegitimacy shows no increasing ratio, although Queensland and New South Wales show higher rates in this respect than the southern States. The infant mortality figure was the lowest on record. The deaths from phthisis totalled 308, and 75 per cent. of the victims had lived 20 years or over in Queensland. The most common cause of death was organic heart disease, and tuberculosis ranks fourth, the second place being occupied by cancer. The report shows clearly that the Queensland climate has nothing about it to preclude the well-being of a white population, and its mineral and pastoral resources are unbounded. Unquestionably it will be the treasure-house of the Australian continent when its millions of acres are populated.

Venereal Prophylaxis.

Practical measures for the limitation of spread of venereal disease in Victoria are slow in taking shape, although some stir was recently made by the press and the medical profession. An advisory committee was nominated to assist the Government in introducing legislation, but so far nothing has been forthcoming. It was recently announced that this committee had secured lock wards at the Alfred and the Women's Hospitals, but this is now denied. The Minister for Public Health recently stated that the Government were anxious and willing to do anything in reason and that the matter must not be allowed to drop.

State Purchase of Radium.

The acting State Premier of Victoria recently asked the President of the Victoria Branch of the British Medical Association to report upon the advisability of a State purchase of radium, for use either at hospitals or on loan. An expression of opinion was asked from the honorary staffs of the Melbourne, St. Vincent's, Alfred, Women's, Children's, and Eye and Ear hospitals, and they have, through representatives, signed a joint report. In this they point out that radium is still on trial, and that so far as is known its curative power has not been established in any deep-seated disease. It is stated that certain superficial skin affections are curable by radium and that some forms of epithelioma have apparently been cured. The report advises against any large purchase of radium, but suggests that comparatively small amounts (worth, say £1000) might be kept at one or more hospitals for special cases. The report considers that the establishment of a radium bank for loan of specimens would be a great mistake and open to grave abuses.

Weather in Victoria.

The present year in Melbourne is the wettest on record. The rainfall to date (Dec. 23rd) is 37 inches, which is nearly double the average. The total in 1908 over the same period was 17·8 inches. The highest figures are 40 inches recorded in 1840, but there is some question of their accuracy. No particular detriment to the public health is so far observable as a result of the heavy rainfall.

Medical Practitioners Bill.

The medical profession of Queensland are at variance with the Government over some new legislation affecting the registration of medical men in that State. The Government insists on including provisions for registering herbalists and hydropathists, and recognising opticians. The members of the Queensland Medical Board have stated that if the Bill is passed in its present form they will at once resign their positions. One very remarkable clause in the Bill is as follows:—

> But no person shall be deemed to practise medicine or surgery who attempts or endeavours to cure or heal the sick or to restore others to health by prayers, faith, or religious methods, or by mental treatment, provided that no drug, medicine, or instrument is thereby prescribed or used whether directly or indirectly or whether internally or externally.

Health Act.

The Queensland Government has introduced a Bill giving much wider powers to the Board of Public Health and providing for the registration of nurses by the State.

Complimentary Dinner.

A complimentary dinner was tendered to Dr. F. Antill Pockley by a number of colleagues on Nov. 30th at the University Club, Sydney. The chair was taken by Sir Philip Sydney Jones, and the occasion was to mark the appreciation of the manner in which Dr. Pockley had directed the affairs

of the Ninth Australasian Medical Congress in his capacity of President.

Personal Items.

Dr. J. F. Wilkinson has been elected President of the Victorian Branch of the British Medical Association for 1912.—Dr. Judah Iona, who is an assistant demonstrator of physiology in the University of Melbourne, has been awarded a research scholarship of £250 for three years at the London University for his work on the toxins of puerperal infection. Dr. Iona has done some original work on the effect of adrenalin in delaying the action of certain poisons.—Professor H. B. Allen, dean of the faculty of medicine in Melbourne University, will leave for London early in January and will be absent for a year.

Dec. 27th, 1911.

Obituary.

JAMES SNOWDEN-SMITH, L.R.C.P. & L.M. EDIN., M.R.C.S. ENG.

HONORARY SURGEON TO THE TAVISTOCK (DEVON) COTTAGE HOSPITAL.

Mr. J. Snowden-Smith died suddenly on Jan. 30th, from syncope, whilst going over Portland Convict Prison with Captain Johnstone, deputy-governor of the prison, with whom he was staying on a visit for the benefit of his health. The deceased, who was 57 years of age, received his medical education at Guy's Hospital, London, and qualified M.R.C.S. Eng. in 1880; the year following he was admitted L.R.C.P. of Edinburgh. After holding the post of house surgeon at the Salisbury General Infirmary, he went to Tavistock, succeeding to the practice of the late Mr. Gilbert Northey. He soon became very popular in Tavistock and had an extensive connexion. He was honorary surgeon to the local cottage hospital, certifying factory surgeon, district and workhouse medical officer, and public vaccinator. He was held in high esteem at Tavistock, where he had practised for over 20 years, and much sympathy is felt there for his widow, daughter, and son, Lieutenant Snowden-Smith, who has done good work as an army aviator. The funeral, which took place at Tavistock, was largely attended.

ALLEN ABRAHAM DUKE, M.D. EDIN., L.R.C.S. & L.M. EDIN., L.S.A. LOND.

THE death occurred at Southwick, Sussex, on Jan. 30th, of Dr. Allen Abraham Duke, who formerly was a well-known Brighton medical practitioner. Seventy-five years of age, he had resided practically in retirement at Southwick for some years. Studying at the University of Edinburgh, he took the L.R.C.S. and L.M. diplomas as far back as 1858, and that of L.S.A. in London in the same year. He became Doctor of Medicine of the University of Edinburgh in 1859. For some time he was a surgeon in the Peninsular and Oriental Steam Navigation Company's service, assistant surgeon at H.M. Convict Prison at Portsmouth, and surgeon at the North Surrey Schools, Anerley.

DEATHS OF EMINENT FOREIGN MEDICAL MEN.—The deaths of the following eminent foreign medical men are announced:—Dr. Max Salomon, of Berlin, whose labours in the cause of obtaining sea-coast hospitals for consumptive cases, together with his frequent publications on the question of combating tuberculosis, have done great service, especially to the German working classes. He was in early professional life a military surgeon and served in the Franco-German war. Afterwards he practised in Hamburg and later in Berlin. He was much interested in the history of medicine, and published some 40 years ago a "History of Glycosuria." His manual of "Special Internal Therapeutics," too, went through three editions, and was translated into Italian. He was 74 years of age.—Dr. Theodor Piderit, of Detmold, author of a well-known work on mimicry, practised for several years in Valparaiso, Chili, but after his return to Germany gave himself up to literary work and teaching. He was 86 years of age.—Dr. Don Jose Maria Esquerdo, an eminent Spanish alienist physician and politician. He was several times elected Member of Parliament for Madrid.

THE NATIONAL INSURANCE ACT.

OUR correspondents in Scotland, Ireland, and Newcastle detail the present position of affairs in their localities.

THE WELSH MEDICAL COUNCIL.

The proposal to form a Welsh Medical Committee or Council to organise and conduct future discussions as to medical benefit under the Insurance Act with the Welsh Commissioners has met with general approval in Wales. At a meeting of the South Wales and Monmouthshire Branch of the British Medical Association on Feb. 2nd a resolution was unanimously passed in favour of constituting for Wales and Monmouthshire a Welsh Medical Council representing both members and non-members of the Association for the purpose indicated. It was further resolved that no offer from the Welsh Commissioners should be accepted until after the Representative meeting of the British Medical Association in London on Feb. 20th and 21st. In consequence of the approval with which the proposal has been received it has been resolved to postpone the meeting at Shrewsbury arranged for Friday, Feb. 9th, until Thursday, Feb. 15th, so as to allow time for the divisions in Wales and Monmouthshire to meet to discuss the resolutions it is proposed to submit to the Shrewsbury meeting, and to elect delegates to attend it. It has been suggested to officers of divisions that eligible non-members should be invited to the division meetings so as to ensure unanimity in the profession throughout Wales and Monmouthshire. The resolutions to be submitted to the Shrewsbury meeting, which will assemble at the Raven Hotel in that city at 2 P.M. on Thursday next, Feb. 15th, will include the reaffirmation of the six cardinal principles, and the appointment of a Welsh Medical Committee or Council to convey to the Board of Insurance Commissioners in Wales the decisions of the medical profession. The postponement of the Shrewsbury meeting has been rendered possible by the very general approval of the course proposed to be taken, which has done away with the necessity of holding the suggested preliminary meeting on Feb. 9th. The meeting on Feb. 15th will, it is anticipated, be able at once to proceed to the constitution of the Committee for Wales and Monmouthshire, and the election of an Executive Committee.

THE REFORM COMMITTEE'S PROPOSAL FOR AN AMENDING ACT.

Mr. Percy C. Raiment, honorary secretary of the British Medical Association Reform Committee, has forwarded to us the following copy of the principal headings of the Bill to Amend the National Insurance Act, 1911, which is being prepared by counsel for that committee. He wishes it to be understood that the points given only embody the barest outlines of the Reform Committee's proposals, and are necessarily incomplete as to details. The broad principles underlying the "Six Point Programme" have been loyally adhered to.

Principal Headings of Proposed Bill to Amend the National Insurance Act, 1911, now in preparation by the British Medical Association Reform Committee.

1. No person with income exceeding £104 per annum to be entitled to medical benefit under the Act.
2. No person with income not exceeding £65 per annum to be excluded from medical benefit under the Act.
3. Local Medical Committees to be constituted in every administrative area with administrative powers.
4. The Local Medical Committee instead of the Insurance Committee to be the authority under Section 15 (3) for fixing and varying the income limit within the above-mentioned amounts.
5. Statutory minimum capitation fee of 10*s.* per insured person per annum, or at the option of the Local Medical Committee, an equivalent minimum payment per visit and consultation.
6. The representatives of medical practitioners to be elected under Section 59 (2) (*c*) of the Act to be not less than one-sixth of the whole number of members of each Insurance Committee.
7. No person suffering from any injury or disease in respect of which compensation or damages may be payable or recoverable under any statute or at common law or who is deprived of sick benefit for misconduct under Section 14 (4) of the Act to be entitled to medical benefit under the Act.
8. The General Medical Council to be substituted for the Insurance Commissioners for the purpose of removing a medical practitioner from the panel under Section 15 (2) (*b*) of the Act.

THE NATIONAL MEDICAL UNION.

The executive of the National Medical Union met in Manchester on Feb. 6th to discuss the Insurance Act, and passed four resolutions, copies of which have been forwarded to each division of the British Medical Association.

The first was a vote of censure on the Council of the Association and a demand for its resignation. The second was a refusal to accept the report of the Council, because it does not embody insistence upon the six cardinal points being guaranteed by statute. The third was a renewal of the pledge not to go on any panel or medical committee until the six cardinal points are unreservedly conceded in such a manner that they cannot be altered or withdrawn in future, except by Act of Parliament. The fourth resolution recommended each division of the British Medical Association to instruct the Council not to enter into further negotiations with, or hold further interviews with, the Committee of the Insurance Commissioners. The various divisions of the Association are urged by the National Medical Union to support the above policy, and to instruct their Representatives to vote in accordance with it at the Representative meeting on Feb. 20th and 21st.

A SPECIAL MEETING OF THE CARDIFF MEDICAL SOCIETY.

A SPECIAL meeting of the Cardiff Medical Society was held on Tuesday, Jan. 16th, Mr. H. E. SKYRME, the President, being in the chair. There were considerably over 100 members and medical friends present.

The PRESIDENT, with a few remarks, introduced Dr. T. A. HELME, of Manchester, who gave his address. This consisted of a detailed justification of his own attitude towards the British Medical Association during the past 12 years. He refuted the charges of inconsistency and hostility to the Association which had been raised against him, and made a long and searching criticism of the policy pursued by the leaders of the Association in the matter of the National Insurance scheme. Dr. Helme retraced the course of the negotiations between the Executive of the Association and the Government, and condemned in detail the behaviour of the Council both towards the scheme and towards their constituencies. As Dr. E. J. Maclean, chairman of Representative meetings, was present, Dr. Helme felt at liberty to speak openly on these matters and to press home various damaging points in recent history. His concluding words were as follows: Now is the time to act. The National Insurance Act must be so amended as to secure the six cardinal points, either by an amending Act or possibly by regulations on the part of the Commissioners, regulations which shall secure unreservedly and permanently our cardinal points and which shall be alterable only by Act of Parliament or by regulations issued with the expressed consent of the profession. Our present position, then, is that we are dissatisfied with the weakness of the attitude of the officials of the British Medical Association, and we think the time has arrived for firmer and stronger action.

After a vote of thanks to the speaker, the following resolution was moved by Dr. W. MITCHELL STEVENS and seconded by Mr. E. TENISON COLLINS:—

That in the opinion of this meeting the National Insurance Act does not meet the just demands of the medical profession as formulated in the six cardinal points; that it is detrimental to the public interest; and that the situation thus created can only be adequately met by a refusal on the part of the profession to undertake any duties which the Act proposes to assign to its members.

Dr. MACLEAN then addressed the meeting. He avoided for the most part the personal indictment and allegations of Dr. Helme, confining himself to the broader aspects of the resolution before the meeting. He suggested that the proper tribunal for trying the issues raised by Dr. Helme was the forthcoming Representative meeting. He deplored the ventilation of such matters in such a manner as fatal to the interests of the profession. He strongly advised the meeting not to take up the line indicated by the resolution. The result of that course being followed would be that the regulations of the Commissioners would be formed irrespective of the policy of the profession. Dr. Maclean characterised this course as foolish, ridiculous, and mischievous, and insisted that the profession should band itself together to present its case to the Commissioners, the committees, and the public, and continue up to the point of refusing to form a panel unless its conditions were fulfilled.

An amendment was proposed by Dr. W. B. CRAWFORD TREASURE, seconded by Dr. LLEWELLYN, as follows:—

That the National Insurance Act does not meet the just demands of the medical profession as formulated in the six cardinal points of policy, and that in the opinion of this meeting no member of the profession shall undertake the treatment of insured persons until the six cardinal points have been conceded.

After Dr. W. E. THOMAS, Dr. T. H. MORRIS, Mr. W. J. GREER, Dr. MARTIN, and Dr. D. A. PATERSON had taken part in a discussion the amendment was put to the meeting and lost, and the original resolution was then carried. Only members of the society took part in the vote.

THE LONDON HOSPITALS AND THE ACT.

A meeting of chairmen of the metropolitan hospitals to which medical schools are affiliated, convened by Mr. Sydney Holland, took place on Friday, Feb. 2nd, when the conclusion was arrived at that for the present no change should be recommended in the admission of either in- or out-patients or in the supply of materials for treatment. It was resolved:—

That a committee be formed of the secretaries of the following hospitals:—The London, St. Bartholomew's, Guy's, St. Thomas's, the Middlesex, and the Seamen's (Greenwich), to collect information during the year and to report to a further meeting to be then held.

It is expected that the hospitals will come to some general agreement as to payments from insured patients or approved societies; and it was decided that steps should be taken to explain to subscribers that the Act did not propose to help patients needing serious operations, lengthy nursing, or special treatment, so that the claims on the voluntary hospitals would remain as great as before.

THE NATIONAL INSURANCE ACT AND THE MEDICAL PROFESSION.

A correspondent has sent us the following tabulated list of clauses in the Act affecting the medical profession:—

Section.	
1	Those entitled to insure.
Schedule 1, part 2 ...	Those not entitled to insure.
8 (1) (*a*)	Medical benefits, definition of.
14 (1) and 15...	,, ,, administration of.
15 (6) and 42 (*d*)	,, ,, original grants for.
15 (7)	,, ,, supplementary grants for.
15 (6) and 42 (*e*)	,, ,, administrative expenses of.
8 (8) (*a*)	,, ,, commencement of.
10 (1)	,, ,, suspension of.
Schedule 4, part 2 ...	,, ,, extension of.
8 (1) (*b*)	Sanatorium benefits, definition of.
16	,, ,, administration of.
16 (2) and 42 (*c*)	,, ,, original grants for.
61 (3) and 64 (1)	,, ,, supplementary grants for.
61 (2)	,, ,, administrative expenses of.
10 (1)	,, ,, suspension of.
17 (1)	,, ,, extension of.
14 (4)	Suspension from certain benefits because of misconduct.
37 (1) (*a*)	Additional benefits.
Schedule 4, Part 2.	
11	Compensation claims.
8 (1) (*c*)	Maternity benefits, definition of.
20	,, ,, re-insurance of.
18 (1)	,, ,, administration of.
18 (1)	,, ,, call on advice of midwife
19	,, ,, duty of husband.
46 (2) (*ii*)	State medical services (Naval, Marine, and Army).
46 (3) (*h*)...	State medical services, Sea Fishing Service.
48 (12)	Charitable medical service, contributions to hospitals.
12	(*a*) by insured persons.
21	(*b*) by approved societies.
21	(*c*) by insurance committees.
51	Charitable medical service, institutions and homes.
21	Charitable medical service, dispensaries.
60 (1) (*b*)	,, ,, ,, lectures on health.
21	Nurses for insured persons (district; specially appointed).
45 (1) (*d*)...	Aliens.
69 (1); 71	False declarations by insured persons.
57 (1); 80 (1); 81 (1); 82 (1); 83 (1)	Machinery for conduct of Act—Commissioners.
58	,, ,, ,, Advisory Committees.
59	,, ,, ,, Insurance Committees.
62	,, ,, ,, Local Health Committees.
65; 78	Amendment of Act.

Our correspondent has been officially engaged in working upon the Act, and his indication where to find particular things in a complicated document may be of service.

THE IMPERIAL MEDICAL REFORM UNION.

A special meeting of the council of the Imperial Medical Reform Union was held on Thursday, Feb. 1st, to consider an

invitation from the National Health Insurance Commissioners to appoint two delegates to attend the conference convened for Friday, Feb. 2nd. There was a full attendance of members, the president, Mr. M. C. Corner, being in the chair. Mr. George Brown, general secretary, said that he had just received a telegram from the National Health Insurance Joint Committee stating that the proposed conference had been postponed. He presumed that the postponement was due to the refusal of the Royal College of Physicians of London and other medical corporations to take part in the conference. Hence it would not be necessary to appoint delegates. The council could, however, if deemed desirable, nominate two delegates to represent the union should a conference be convened before the next ordinary meeting of the council. After some discussion it was unanimously resolved, on the motion of Dr. J. B. Cook, that at present no action be taken which might in any way be regarded as antagonistic to any other representative medical organisation.

Medical News.

ROYAL COLLEGES OF PHYSICIANS OF LONDON AND SURGEONS OF ENGLAND.—At a meeting of the Comitia of the Royal College of Physicians of London on Jan. 25th and of the Council of the Royal College of Surgeons of England on Feb. 1st Diplomas of L.R.C.P. and M.R.C.S. were respectively conferred upon the undermentioned candidates, who have passed the Final Examination of the Conjoint Examining Board and have complied with the necessary by-laws:—

Thomas Stevens Allen, Guy's Hospital; Soliman Azmy, Cairo and University College Hospital; George Victor Bakewell, B.A. Cantab., Cambridge University and London Hospital; *Grantley Barratt, London Hospital; Dougan Bird, M.B., B.S. Melb., Melbourne University and St. Mary's Hospital; Claude Hebden Barker Booth, Cambridge University and London Hospital; Arthur Vincent Boyall, B.A. Cantab., Cambridge University and Charing Cross Hospital; Terence Campbell Butler, King's College and Westminster Hospital; Colin Guy Hirst Campbell, Cambridge University and Westminster Hospital; Arthur Barrett Cardew, Middlesex Hospital; Eric Edmund Chipp, St. Bartholomew's Hospital; Thomas Clarke, Leeds University; Hugh Gregan Crawford, Guy's Hospital; Campbell William de Morgan, St. Mary's Hospital; George de Swietochowski, M.D. Munich, Munich University and London Hospital; Edward Percy Drabble, London Hospital; Christopher Robson Dudgeon, King's College and Westminster Hospital; Norman Duggan, M.B., Ch.B. Manch., Manchester University and St. Bartholomew's Hospital; Philip Vanner Early, University College Hospital; Macormack Charles Farrell Easmon, St. Mary's Hospital; Wilfred Marlow Ecclestone, M.B. Toronto, Toronto University and University College Hospital; Gordon Ernest Dormer Ellis, St. Bartholomew's Hospital; Abel Evans, University College, Cardiff, and Charing Cross Hospital; Arthur Geoffrey Evans, B.A. Cantab., Cambridge University and St. Bartholomew's Hospital; David Benjamin Evans, University College, Cardiff, and St. Bartholomew's Hospital; George Arthur Ewart, B.A. Cantab., St. George's Hospital; Ibrahim Fahmy-Elminyawi, Cairo and University College Hospital; Montague Albert Farr, Charing Cross Hospital; Archibald Ferguson, St. Bartholomew's Hospital; Charles Michael Forster, B.A. Cantab., Cambridge University and Charing Cross Hospital; Andrew Alexander Fyffe, Sheffield University and University College Hospital; Alfred Linton Gardner, Guy's Hospital; George Herbert Garlick and John Torbet Smith Gibson, St. Mary's Hospital; Cyril Ernest Ambrose Goddard and Thomas Chivers Graves, M.R.C.V.S., B.Sc. Lond., University College Hospital; John Cecil Hallinan, Charing Cross Hospital; Ernest Ravensworth Hart, Guy's Hospital; Sidney Martin Hattersley, B.A. Cantab., Cambridge University and St. Bartholomew's Hospital; Gordon Victor Hobbs, St. Mary's Hospital; Robert Hamer Hodges, King's College Hospital; Bernard Whitchurch Howell, St. Bartholomew's Hospital; Frederick James Humphrys, St. Thomas's Hospital; Reuben Levi Hurst, M.B. Toronto, Toronto University, University College and Middlesex Hospitals; Christopher Martin Ingoldby, London Hospital; Howel Gabriel Gwyn Jeffreys, B.A. Cantab., Cambridge University and St. George's Hospital; Nagubai Moreshwar Joshi, L.M.S. Bombay, Bombay University and Royal Free Hospital; Bhagat Ram Khanna, Punjab University and London Hospital; Leon Levene and Robert Henry Liscombe, University College Hospital; *Ernest Millington Livesey, M.B., Ch.B. Otago, Otago University; Andrew Carey McAllister, King's College Hospital; Maurice Mackenzie, London Hospital; Avenell Frederick Cleeve Martyn, St. Mary's Hospital; Philip Henry Mitchiner, St. Thomas's Hospital; Kavasji Cursetji Mulla-Feroze, L.M.S. Bombay, Bombay University and London Hospital; Francis Leslie Nash-Wortham, St. Bartholomew's Hospital; Percy Alfred Newton, M.B., Ch.B. Birm., Birmingham University; Burford Noel Norman, University College Hospital; William David Owen and Donovan Blaise Pascall, St. Bartholomew's Hospital; William Baly Peacock, L.D.S. Eng., King's College Hospital; George Harold Pearson, London Hospital; John Hawkes Pendered, B.A. Cantab., and Walter Sydney Perrin, M.A. Cantab., Cambridge University and London Hospital; Reginald Arthur Pittard, University College, Cardiff and London Hospital; John McFarlane William Pollard, Guy's Hospital; Herbert Barrett Pope, B.A. Cantab., Cambridge and Leeds Universities; George Lionel Preston, Guy's Hospital; Arthur Joseph Rae, B.A. Cantab., Cambridge University and St. Thomas's Hospital; Peter Warwick Ransom, B.A. Cantab., Cambridge University and St. Bartholomew's Hospital; Richard Bancroft Nevil Reade, St. Mary's Hospital; Evan David Richards, University College, Cardiff, and St. Bartholomew's Hospital; Edmund Uniacke Russell, King's College Hospital; Reginald Sherman, B.A. Cantab., Cambridge University and St. Bartholomew's Hospital; Frederic Batttinson Smith, B.A. Cantab., Cambridge University and University College Hospital; Philip Smith, Guy's Hospital; Henry Kenneth Victor Soltau, St. Bartholomew's Hospital; Geoffrey Sparrow, B.A. Cantab., Cambridge University and St. Bartholomew's Hospital; James Lennox Stewart, Guy's Hospital; Claude William Treherne, St. Thomas's Hospital; Henri Rene Guillaume Van der Beken, London Hospital; Victor Vesselovsky, St. Thomas's Hospital; Ronald Herbert Vicary, Cambridge University and St. Mary's Hospital; Victor David Collins Wakeford, St. Bartholomew's Hospital; Lionel Charles Watkins-Baker, Bristol University; Arthur John Waugh, B.A. Cantab., Cambridge University and St. Bartholomew's Hospital; Ernest White, L.D.S. Eng., Guy's Hospital and Sheffield University; Cyril Guy Whorlow, St. Thomas's Hospital; James Buckley Aquilla Wigmore, B.A. Cantab., Cambridge University and St. Thomas's Hospital; Robert Waller Willcocks, B.A. Cantab., Cambridge University and St. Bartholomew's Hospital; John Winterbotham, B.A. Cantab., Cambridge University and University College Hospital; and Percy Arthur With, St. Bartholomew's Hospital.

* M.R.C.S. Diploma previously conferred.

Diplomas in Public Health were also conferred (in conjunction with the Royal College of Surgeons) upon the following 18 candidates:—

Arthur George Atkinson, M.B., B.C. Cantab., L.R.C.P., M.R.C.S., St. George's Hospital; Robert Vickers Clayton, M.B., B.S. Durh., Durham University and Portsmouth Municipal College; Francis Gerrard Hamilton Cooke, L.R.C.P., M.R.C.S., L.S.A., University College; Maneckjee Merwanjee Cowasjee, L.R.C.P., M.R.C.S., Guy's Hospital and Royal Institute of Public Health; Frank Elton Cox, M.B., B.S. Melb., L.R.C.P., M.R.C.S., Melbourne University and St. Bartholomew's Hospital; George Henry Dupont, M.D., Ch.B. Edin., Edinburgh University and University College; Josephine Letitia Denny Fairfield, M.D., Ch.B. Edin., Edinburgh University and University College; William Miller Fairlie, M.B., Ch.B. Glasg., University College; William Robert Gibson, L.R.C.P., F.R.C.S., Guy's Hospital and King's College; John Andrew Hagerty, M.B., Ch.B. Glasg., Glasgow University; George Crichton Jackson, M.B., B.C. Cantab., L.S.A., Cambridge University, St. Mary's and St. George's Hospitals; Satyaranjan Maitra, L.M.S. Calcutta, Calcutta Medical College and Middlesex Hospital; Manmatha Nath Mitra, L.M.S. Punjab, Punjab University and University College; John George Owen, L.R.C.P., M.R.C.S., King's College; Henry Christian Ernest Quin, L.R.C.P. & S. Edin., L.F.P.S. Glasg., University College; Jessie Anne Scott, M.B., Ch.B. Edin., Edinburgh University and University College; Frederick Meadows Turner, M.D., B.C. Cantab., Cambridge University and Guy's Hospital; and Arthur Christopher Watkin, L.R.C.P., M.R.C.S., University College.

ROYAL COLLEGE OF SURGEONS OF ENGLAND.—Licences in Dental Surgery have been conferred upon the following gentlemen, who have complied with the necessary by-laws:—

William Reginald Brandon, Manchester University; and Sidney William Ingram, Guy's Hospital.

FOREIGN UNIVERSITY INTELLIGENCE.—*Albany:* Dr. Elting has been appointed Professor of Surgery.—*Indianapolis (Medical College of Indiana):* Dr. Willis D. Gatch, of Baltimore, has been appointed Professor of Surgery.—*Montreal (McGill University):* Dr. Donald T. MacTaggart has been appointed Professor of Forensic Medicine.—*Naples:* Dr. G. Severino has been recognised as *privat-docent* of Medical Pathology.—*Odessa:* Dr. Uskoff has been appointed Professor of Medical Pathology and Therapeutics.—*Palermo:* Dr. A. Zancia has been recognised as *privat-docent* of Otology and Laryngology.—*Pisa:* Dr. Marcantoni has been recognised as *privat-docent* of Medical Pathology.—*Prague (Bohemian University):* Dr. R. Kimler has been promoted to be Ordinary Professor of Pathological Anatomy.

CENTRAL MIDWIVES BOARD.—A special meeting of the Central Midwives Board was held on Jan. 26th at Caxton House, Westminster, with Sir Francis H. Champneys in the chair. The Board considered the following charges, amongst others, against the midwives whose names are given below, and ordered them to be struck off the Roll:—Mary Ann Carr, that while herself in a condition liable to be a source of infection, owing to a discharging whitlow on the thumb, she attended as a midwife at a confinement and delivered the patient of a child, contrary to the provisions of Rule E, 5. Ellen Gaskell, that being in attendance as a midwife at a confinement, the case being one of abortion, she did not explain that it was one in which the attendance of a registered medical practitioner was required, nor did she hand to the husband

or the nearest relative or friend present the form of sending for medical help, properly filled up and signed by her, in order that this might be immediately forwarded to the medical practitioner, as required by Rule E, 19. Ellen Gould, that being in attendance as a midwife at a confinement she failed to adopt the antiseptic precautions required by Rules E, 3 and 7, and having been sent for on account of the illness of the patient, and advising that a registered medical practitioner should be sent for. she did not hand to the husband or the nearest relative or friend present the form of sending for medical help, properly filled up and signed by her, in order that this might be immediately forwarded to the medical practitioner, as required by Rule E, 19. Elizabeth Hodgkinson, that being in attendance as a midwife at a confinement, the child's right eye being inflamed and discharging on August 13th, and the left eye being similarly affected on August 15th, she did not explain that the case was one in which the attendance of a registered medical practitioner was required, nor did she hand to the husband or the nearest relative or friend present the form of sending for medical help, properly filled up and signed by her, in order that this might be immediately forwarded to the medical practitioner, as required by Rule E, 20 (5). Ann Hole, that when attending to her patients she did not wear a clean dress of washable material as required by Rule E, 1, did not adopt antiseptic precautions, could not read a clinical thermometer, and that she did not keep a register of cases as required by Rule E, 23. Florence Matilda Magor, that being in attendance as a midwife at three successive confinements, the child in each case suffering from inflammation of, and discharge from, the eyes, she did not explain that the case was one in which the attendance of a registered medical practitioner was required, nor did she hand to the husband or the nearest relative or friend present the form of sending for medical help, properly filled up and signed by her, in order that this might be immediately forwarded to the medical practitioner, as required by Rule E, 19 (5) of the rules then in force. Margaret Morgan, that she was not cleanly in her person and house, as required by Rule E, 1, and that she did not comply with Rule E, 13, being unable to use a clinical thermometer. Marie Ozun, that on Sept. 11th, 1911, she was convicted at the Lowestoft petty sessions of feloniously stealing 31 canvas deck chair seats, and was thereupon sentenced to a fine of 4 guineas with costs, or in default one month's imprisonment. Emily Susannah Plumb, that being in attendance as a midwife at a confinement, the patient suffering from excessive bleeding, she did not explain that the case was one in which the attendance of a registered medical practitioner was required, nor did she hand to the husband or the nearest relative or friend present the form of sending for medical help, properly filled up and signed by her, in order that this might be immediately forwarded to the medical practitioner, as required by Rule E, 20 (3). Sarah Reed, that being in attendance as a midwife at a confinement, she did not adopt the antiseptic precautions required by Rules E, 3 and 7, and she did not take the patient's temperature at any time. The following midwives were censured after charges against them had been considered: Mary Jane Haines and Eliza Mercer. Grace Lingard and Mary O'Callaghan were cautioned after charges against them had been considered.

DONATIONS AND BEQUESTS.—The late Mr. Montague G. Jessett has left the residue of his property, after making certain bequests, to King Edward's Hospital Fund. It is expected that the residue will amount to about £40,000. The secretaries of King Edward's Hospital Fund have received an annual subscription of £5000 from Mr. Walter Morrison and £1000 from Mr. W. Waldorf Astor. —Several generous bequests to the Leicester Infirmary are announced. The principal one arises under the will of the late Mr. Alfred Adderly, J.P., of Woodhouse Grange, Leicester. After bequeathing several legacies and an annuity to his niece, Mr. Adderly bequeaths the whole of his estate to his wife for life, upon her death to his daughter for life, and subject thereto he bequeaths the whole upon trust for the Leicester General Infirmary. It is estimated that the infirmary may eventually receive a sum of about £80,000 under this bequest. Mr. Adderly was a life governor of the infirmary and a generous contributor to the fund for the reconstruction of the infirmary. A second legacy arises under the will of the late Mrs. Ellen Dyke Frost, whereby the infirmary has received £1000 for the general fund and £1000 for the children's hospital. A third bequest is under the will of the late Mr. Charles Turner, who died some four or five years ago, and from whose estate a sum of £1400 has already been received. The estate has now been finally wound up and a further sum of £933 8*s.* 1*d.* (being two-thirds of the residue) has been paid by the executors to the infirmary.

THE MORISON LECTURES OF THE ROYAL COLLEGE OF PHYSICIANS OF EDINBURGH.—These lectures on Certain Aspects of Ataxia will be delivered by Dr. J. J. Graham Brown on Monday, Wednesday, and Friday, March 4th, 6th, and 8th, at 5 o'clock.

BRIGHTON WORKHOUSE AND AN OPERATING SURGEON.—The decision of the Brighton guardians to appoint a consulting and operating surgeon to the workhouse at an honorarium of 50 guineas per annum having been found distasteful to the local profession, the special committee dealing with the subject has expressed the opinion that the whole question of the medical organisation of the workhouse should be submitted to a thorough investigation with a view to secure the highest attainable standard of work. In order to obtain advice as to further proceedings, the committee is seeking an interview with the Local Government Board.

PRESENTATION TO DR. P. W. LATHAM.—It is proposed that a presentation be made to Dr. P. W. Latham by the medical men of Cambridge and district on his retirement from active work. He has for many years held a leading position as physician to Addenbrooke's Hospital, as Downing professor of medicine, and as a consultant for a very wide area. It is hoped that a meeting of subscribers may be convened to show the regard in which his fellow practitioners hold him. The honorary secretaries are Dr. J. Aldren Wright, honorary secretary of the Cambridge Medical Society, and Dr. H. Buckley Roderick, honorary secretary of the Cambridgeshire and Huntingdonshire Branch of the British Medical Association.

BOOKS, ETC., RECEIVED.

BAILLIÈRE, TINDALL, AND COX, London. (For the Department of Education, Sudan Government, Khartoum.)

Fourth Report of the Wellcome Tropical Research Laboratories at the Gordon Memorial College, Khartoum. Volume B: General Science. Andrew Balfour, M.D., B.Sc., F.R.C.P. Edin., D.P.H. Camb., Director. Price 18*s.* net.

CHURCHILL, J. AND A., London.

Manual of Pathology, including Bacteriology, the Technic of Post-mortems, and Methods of Pathologic Research. By W. M. Late Coplin, M.D., Professor of Pathology, Jefferson Medical College, Philadelphia. Fifth edition, rewritten and enlarged. Price 21*s.* net.

DAVIS (F. A.) COMPANY, Philadelphia. PHILLIPS, STANLEY, 23, Creighton-road, Queen's Park, London, N.W.

A Text-book of Practical Gynecology. For Practitioners and Students. By D. Tod Gilliam, M.D., Emeritus Professor of Gynecology in Starling-Ohio Medical College. Fourth revised edition. Price 21*s.* net.

Diseases of Infancy and Childhood; Their Dietetic, Hygienic, and Medical Treatment. A Text-book designed for Practitioners and Students in Medicine. By Louis Fischer, M.D., Attending Physician to the Willard Parker and Riverside Hospitals of New York City. Fourth edition. Price 27*s.* 6*d.* net.

LIPPINCOTT (J. B.) COMPANY, Philadelphia and London.

International Clinics. Edited by Henry W. Cattell, A.M., M.D., Philadelphia, U.S.A., with Collaboration. Volume IV. Twenty-first Series. 1911. Price not stated.

LONGMANS, GREEN, AND CO., London, New York, Bombay, and Calcutta.

A Manual of Surgical Treatment. By Sir W. Watson Cheyne, Bart., C.B., D.Sc., LL.D., F.R.C.S., F.R.S., and F. F. Burghard, M.S. Lond., F.R.C.S. New edition, entirely revised and largely rewritten, with the assistance of T. P. Legg, M.S. Lond., F.R.C.S., and Arthur Edmunds, M.S. Lond., F.R.C.S. In Five Volumes. Vol. I.: The Treatment of General Surgical Diseases. Price 21*s.* net.

NISBET, JAMES, AND CO., LIMITED, 22, Berners-street, London, W.

Nisbet's Medical Directory, 1912. In Two Parts. Part I.: Directory of Medical Practitioners. Part II.: The Local Directory. Price 8*s.* 6*d.* net.

Tuberculin in the Diagnosis and Treatment of Tuberculosis. Weber-Parkes Prize Essay, 1909. with Additions. By W. Camac Wilkinson, B.A. Syd., M.D. Lond., F.R.C.P., Late Lecturer in

Pathology (1884-1901) and Medicine (1901-1910), University of Sydney. Price 21*s.* net.

STEINHEIL, G., Paris.

Anatomie Topographique et Chirurgie du Thymus. Par M. le Dr. Eugène Olivier, Ancien Interne des Hôpitaux de Paris, Aide d'Anatomie à la Faculté de Médecine. Price not stated.

TAYLOR AND FRANCIS, Red Lion-court, Fleet-street, London.

A Guide to the Series of Pathological Specimens illustrating Injuries and Diseases of the Organs of Generation in the Female (including such as are incidental to Gestation and Parturition) in the Museum of the Royal College of Surgeons of England. By Alban H. G. Doran, Fellow of the College. Issued by Order of the Council of the College. Price 6*d.*

THACKER, SPINK, AND CO., Calcutta and Simla. THACKER, W., AND CO., 2, Creed-lane, London, E.C

The Indian Medical Service. Being a Synopsis of the Rules and Regulations regarding Pay, Promotion, Pension, Leave, Examination, &c., in the Indian Medical Service, both Military and Civil. By Major B. G. Seton, V.H.S., I.M.S., Secretary to the Director-General, Indian Medical Service; and Major J. Gould, M.B., I.M.S., Staff Officer, Medical Mobilisation Stores, 3rd Division. Price 7*s.* 6*d.*

TRUTH PUBLISHING CO., LIMITED, 10, Bolt-court, Fleet-street, London, E.C.

Truth Cautionary List for 1912. Price 1*s.* By post, 1*s.* 2*d.*

UNIVERSITY COLLEGE, London.

Institute of Physiology, University College, London. Collected Papers. Vol. XVI. Edited by Ernest H. Starling, M.D., F.R.S., F.R.C.P., Jodrell Professor of Physiology. Price not stated.

UNWIN, T. FISHER, Adelphi-terrace, London; Inselstrasse, 20, Leipsic.

James Hutchison Stirling, His Life and Work. By Amelia Hutchison Stirling, M.A., Joint Translator of Spinoza's "Ethic," Author of "Torchbearers of History," &c. With Preface by the Right Hon. Viscount Haldane of Cloan. Price 10*s.* 6*d.* net.

WILEY, JOHN, AND SONS, New York. CHAPMAN AND HALL, LIMITED, London.

Nephritis: An Experimental and Critical Study of its Nature, Cause, and the Principles of its Relief. By Dr. Martin H. Fischer, Eichberg Professor of Physiology in the University of Cincinnati. The 1911 Cartwright Prize Essay of the Association of the Alumni of the College of Physicians and Surgeons, Medical Department of Columbia University, New York. First edition. First thousand. Price $2.50 net.

Appointments.

Successful applicants for Vacancies, Secretaries of Public Institutions, and others possessing information suitable for this column, are invited to forward to THE LANCET *Office, directed to the Sub-Editor, not later than 9 o'clock on the Thursday morning of each week, such information for gratuitous publication.*

KIRWAN, FREDERICK MICHAEL, M.R.C.S. Irel., L.R.C.P. Irel., has been appointed Third Assistant Medical Officer at the East Sussex Asylum.

O'CONNOR, J. P., M.B., B.S. N.U.I., has been appointed Certifying Surgeon under the Factory and Workshop Acts for the Kingstown District of the county of Dublin.

WARD, A., has been appointed Certifying Surgeon under the Factory and Workshop Acts for the Crondall District of the county of Hants.

Vacancies.

For further information regarding each vacancy reference should be made to the advertisement (see Index).

BANBURY, HORTON INFIRMARY.—House Surgeon. Salary £80 per annum, with board and residence.

BARROW-IN-FURNESS, NORTH LONSDALE HOSPITAL.—House Surgeon. Salary £100 per annum, with board and lodging.

BIRMINGHAM AND MIDLAND EYE HOSPITAL.—Resident Surgical Officer. Salary £100 per annum, with apartments, board, and attendance.

BIRMINGHAM GENERAL HOSPITAL.—Assistant Physician. Salary £50 per annum.

BIRMINGHAM UNIVERSITY.—Lecturer in Physiology. Salary £150 per annum.

BRISTOL GENERAL HOSPITAL.—Senior House Surgeon. Salary £120 per annum, with board, residence, &c.

BRISTOL UNIVERSITY.—Lecturer on Surgery to Dental Students.

BURY ST. EDMUNDS, WEST SUFFOLK GENERAL HOSPITAL.—House Surgeon, unmarried. Salary £100 per annum, with board, lodging, and laundry

CAMBRIDGE, ADDENBROOKE'S HOSPITAL.—Second House Surgeon. Salary £80 per annum, with board, residence, and laundry.

CANCER HOSPITAL (FREE), Fulham-road, S.W.—Assistant Pathologist. Salary £350 per annum.

CATERHAM ASYLUM.—Third Assistant Medical Officer, unmarried. Salary £150 per annum, with board, lodging, and washing.

CHARING CROSS HOSPITAL MEDICAL SCHOOL.—Lectureship in Hygiene and Public Health.

CITY OF LONDON HOSPITAL FOR DISEASES OF THE CHEST, Victoria Park, E.—Resident Medical Officer. Salary £150 per annum, with board, &c.

DERBY COUNTY ASYLUM, Mickleover.—Junior Assistant Medical Officer. Salary £120 per annum, with apartments, board, washing, and attendance.

DUMFRIES AND GALLOWAY ROYAL INFIRMARY.—Assistant House Surgeon. Salary £55 per annum, with board and washing.

DUNDEE DISTRICT ASYLUM.—Junior Resident Medical Officer. Salary £110 per annum, with board and apartments.

EASTBOURNE, COUNTY BOROUGH OF.—Assistant School Medical Officer and Assistant Medical Officer of Health. Salary £250 per annum.

EXMINSTER, DEVON COUNTY ASYLUM.—Fourth Assistant Medical Officer. Salary £130 per annum.

HAMPSTEAD GENERAL AND NORTH-WEST LONDON HOSPITAL.—House Physician and House Surgeon, each for six months. Salaries at rate of £70 per annum, with board and residence.

HOSPITAL FOR SICK CHILDREN, Great Ormond-street, W.C.—Clinical Pathologist and Bacteriologist. Salary £200 per annum.

LARBERT, STIRLING DISTRICT ASYLUM.—Junior Assistant Medical Officer. Salary £130 per annum, with board, &c.

LEICESTER PARISH POOR-LAW INFIRMARY.—First Resident Assistant Medical Officer. Salary £140 per annum, with rations, apartments, and washing.

LIVERPOOL, DAVID LEWIS NORTHERN HOSPITAL.—Two House Physicians and Three House Surgeons, all for six months. Salaries at rate of £60 per annum, with residence and maintenance.

LIVERPOOL, ROYAL SOUTHERN HOSPITAL.—Two House Physicians and Three House Surgeons, all for six months. Salary at rate of £60 per annum, with board and residence.

LIVERPOOL UNIVERSITY.—Obstetric Assistant. Salary £100 per annum, with residence.

MACCLESFIELD GENERAL INFIRMARY.—Junior House Surgeon. Salary £60 per annum, with board and residence.

MIDDLESEX HOSPITAL MEDICAL SCHOOL.—Lecturer on Mental Diseases.

NEWCASTLE-UPON-TYNE UNION INFIRMARY AND WORKHOUSE.—Medical Superintendent. Salary at rate of £450 per annum.

NOTTINGHAM GENERAL DISPENSARY.—Assistant Resident Surgeon, unmarried. Salary £160 per annum, with apartments, attendance, light, and fuel.

OXFORD COUNTY ASYLUM, Littlemore, near Oxford.—Junior Assistant Medical Officer, unmarried. Salary £150 per annum, with quarters, board, and laundry.

OXFORD, RADCLIFFE INFIRMARY AND COUNTY HOSPITAL.—House Surgeon and Casualty House Surgeon, unmarried, each for six months. Salaries at rate of £80 per annum, with board, &c.

PORTSMOUTH, ROYAL PORTSMOUTH HOSPITAL.—House Physician for six months. Salary £75 per annum, with board, &c.

ROYAL NATIONAL ORTHOPÆDIC HOSPITAL, 234, Great Portland-street, W.—Honorary Assistant Surgeon. Also Surgical Registrar. Salary £105 per annum.

ROYAL NAVAL MEDICAL SERVICE.—Fifteen Appointments.

ST. MARY'S HOSPITAL FOR WOMEN AND CHILDREN, Plaistow, E.—Senior Resident Medical Officer, unmarried. Salary at rate of £100 per annum, with board, residence, and laundry.

SALFORD ROYAL HOSPITAL.—Casualty House Surgeon. Salary at rate of £50 per annum, with board and residence.

SALISBURY, FISHERTON HOUSE.—Junior Assistant Medical Officer, unmarried. Salary £120 per annum, with board, apartments, &c.

SHEFFIELD UNIVERSITY.—Demonstrator in Experimental Physiology and Pharmacology. Salary £200 per annum.

STAFFORD, COTON HILL LUNATIC HOSPITAL.—Assistant Medical Officer. Salary £150 per annum, with residence, board, and laundry.

SOUTHAMPTON COUNTY BOROUGH.—Assistant Medical Officer of Health. Salary £250 per annum.

SOUTHAMPTON WORKHOUSE INFIRMARY, Shirley Warren.—Resident Assistant Medical Officer. Salary £100 per annum, with apartments, rations, washing, and attendance.

STOKE-ON-TRENT, NORTH STAFFORDSHIRE INFIRMARY, Hartshill.—House Surgeon. Salary £100 per annum, with apartments, board, and washing.

WALSALL AND DISTRICT HOSPITAL.—House Surgeon. Salary £100 per annum, with board, residence, and laundry. Also House Physician. Salary £90 per annum, with board, residence, and laundry.

WEST AFRICAN MEDICAL STAFF.—Number of Appointments. Salary £400 per annum.

WINCHESTER, ROYAL HAMPSHIRE COUNTY HOSPITAL.—House Surgeon. Salary £80 per annum.

WINDSOR, KING EDWARD VII HOSPITAL FOR WINDSOR, ETON, AND DISTRICT.—Senior House Surgeon. Salary £80 per annum, with residence, board, laundry, and attendance.

WOLVERHAMPTON AND STAFFORDSHIRE GENERAL HOSPITAL.—Resident Medical Officer. Salary at rate of £100 per annum, with board, rooms, and laundry.

THE Chief Inspector of Factories, Home Office, London, S.W., gives notice of vacancies as Certifying Surgeons under the Factory and Workshop Act at Bangor, in the county of Down; at Yarmouth, in the county of the Isle of Wight; at Tavistock, in the county of Devon; and at Oxted, in the county of Surrey.

Births, Marriages, and Deaths.

MARRIAGES.

BLACKMORE—MARTIN.—On Jan. 30th, at St. Marylebone Parish Church, Mr. H. Stuart Blackmore, R.A.M.C., to Norah, elder daughter of Dr. Sidney Martin.

DEATHS.

JACKSON.—On Feb. 4th, at 15, Huntingdon-street, Barnsbury, London, N., James Jackson, M.R.C.S., L.S.A., aged 70 years.

MACKINDER.—On Jan. 28th, at Hove, Draper Mackinder, M.D., F.R.C.S. Edin., aged 93 years.

PURKIS.—On Feb. 2nd, at Sekondi, West Africa, Dennis Woodley Purkis, L.R.C.P., L.R.C.S. Edin., L.F.P.S. Glasg., in his 37th year.

N.B.—A fee of 5s. is charged for the insertion of Notices of Births, Marriages, and Deaths.

Notes, Short Comments, and Answers to Correspondents.

PUBLIC HEALTH IN JAMAICA.

IN his report for 1910–11 on the Colony of Jamaica, the Governor, Sir Sydney Ollivier, K.C.M.G., states that the total population of the island, as shown by the census taken on April 2nd, 1911, was 831,383 (males, 397,439; females, 433,944). This is an increase of 30 per cent. over the figures of 20 years ago. The marriage-rate per 1000 continues to fall. The percentage of illegitimate births amounted to 62·4, as against 60·0 in 1909–10. The total births registered numbered 31,918, as against 32,402 in the previous year, the birth-rate being 38·6 per 1000 of estimated population, as against 39·7 in 1909–10. The deaths registered numbered 19,119, the rate per 1000 of estimated population being 23·1, as compared with 22·8 in 1909–10. Infantile mortality was accountable for 8871 deaths (46·3 per cent.) during the year. These figures represent deaths of children under five years of age, and of this number 7743 (or 40·4 per cent. of the total deaths) were those of children under two years of age. This is 24·36 per cent. of the number of births recorded for the year.

The total number of patients treated in the hospitals of the island during the year was 26,338, of whom 7542, or 28½ per cent., suffered from malarial fever. The total of deaths from malarial fever, malarial poisoning, and undistinguished fever was 3433, or 324 less than in 1909–10. There seems, therefore, some ground for the belief that the measures taken for the abatement of malaria are beginning to have effect, and that if they are steadily maintained, and filling and drainage works are undertaken from year to year, the mortality from this cause will rapidly decrease. An account of these measures was given in our columns on May 20th last year (p. 1370).

A vigorous campaign against yaws has been pursued as a result of the passing of Law 23 of 1910. The difficulties which are attendant on dealing with the matter are considerable, and different systems have been adopted in various West Indian islands. Much has been expected from a policy of compulsory segregation instituted in certain of the colonies, but it has not been attended with such success as might have been attained had the circumstances been more favourable. The initial expense of building asylums, and the recurring expenditure on maintenance of a large number of patients, usually created so great a financial strain that in some cases the attempt had either to be abandoned or the stringency of the segregation laws relaxed. Many of the people believed that the disease was inevitable, and that it was better for the children to contract it when young so as to become immune in later life, and it is said that they were directly exposed to contagion with that object in view. The confinement in asylums was, moreover, so distasteful to those who had contracted the disease that they frequently hid themselves and were screened from the authorities by their friends.

The system now in force in Jamaica is that of affording out-door treatment at the expense of the Government, and employing rural constables to discover and to report cases occurring in their districts, to persuade them to present themselves for treatment, and to return to the medical officer and continue doing so until cured. The reports received from the various district medical officers are, on the whole, very encouraging. In some districts there is a considerable decrease in the number of cases and a breaking down of the prejudice against medical treatment, as well as an increased willingness to present themselves voluntarily. The number of cases treated in 1910–11 was 7313, and in 1909–10 4555. The district medical officer at Port Antonio, Dr. C. A. Moseley, specially brings to notice the very satisfactory results obtained by him in the treatment of certain cases of yaws with the remedy known as "606." He used this remedy in four cases of several years' standing, and in each case the persons treated have to all outward appearances entirely recovered from the disease, and are now practically well. He recommends that the drug should be supplied to every hospital for the treatment of this disease, with a view to its being given a further trial.

The surgeon of the General Penitentiary called attention to the large percentage of prisoners admitted into the institution who were found to be suffering from hookworm disease, and stated that as a result of examinations it was shown that out of 71 persons admitted 51, or over 70 per cent., were found to harbour the worm. Reports from several district medical officers go to show that the disease is much more prevalent than has generally been supposed, not only among the East Indians, but also among the native population, and that many cases which might be attributed to malaria will in future be found to be due to hookworm. 50 per cent. of the prisoners admitted into the St. Catherine District Prison are reported to harbour the worm.

One of the points brought to notice by the commission which was appointed to report on the distress in certain portions of the parishes of Manchester and St. Elizabeth in 1909 was that the prevalence of syphilis was a cause of much suffering and inefficiency, and a vote was taken to enable the disease to be dealt with in these districts. As a result 346 cases have been treated at Government expense.

During the year it was decided to undertake an investigation into the causes of the mysterious malady locally known by the generic title of "vomiting sickness," which breaks out in certain districts in the cold season amongst the poorer classes, and, while maintaining a constancy of general characteristics, has hitherto displayed, when subjected to specific examination, a similitude to various forms of vegetable poisoning, to the effect of worms, meningitis, bronchitis, gastritis, and other more familiar diseases. Identified by one district medical officer as the result of poison, it has been speedily proved by another to be due to worms, and as quickly passed on by another as meningitis, and so on through the category. The Secretary of State, on being applied to, appointed, on the advice of the Tropical Diseases Research Committee, Captain T. J. Potter, R.A.M.C., to conduct the investigation. Captain Potter's report has not yet been received. With the view also of tracing the means by which enteric fever is disseminated, a committee has been appointed, consisting of Dr. A. G. Macdonald, the health officer of Kingston, where the greatest number of cases in any one locality in the island occur, and Mr. R. S. Turton, of Stony Hill, St. Andrew.

"CONSULTANTS."

To the Editor of THE LANCET.

SIR,—For the last 35 years I have worked as a general practitioner in a town about two hours' journey from London. Some of my patients when they are in town take the opportunity of going to see some "consulting" physician or surgeon about their health. The great man sees them, not in consultation with me, but by himself; and says to the patient: "Ah, I know Dr. X in your town. I will write to him and tell him what I think of your case, and will ask him to call on you and take charge of you." So the patient returns home and sends for Dr. X, and I never see the patient again, though I may have attended him or her and the family for many years. This sort of thing is frequently happening.

My object in writing to you is to ask why these great men in Harley-street, F.R.C.P. or F.R.C.S., are looked up to by general practitioners with honour and respect for behaving in a way which would stamp a general practitioner as a cad and a blackguard? Are good manners and professional courtesy to be reserved only for general practitioners?

I am, Sir, yours faithfully,

Jan. 31st, 1912. G.P.

*** The conduct described by "G.P." is universally condemned. Consultants would welcome the exposure of the offenders.—ED. L.

SOUTHWARK GUARDIANS AND THE DISSECTION QUESTION.

THE Southwark board of guardians, at their meeting on Thursday, Jan. 25th, were asked by Mr. F. G. Parsons, secretary to the Anatomical Committee, St. Thomas's Hospital, to reconsider their decision to refuse to allow unclaimed bodies to be sent to the London schools of anatomy. Mr. Parsons, in a letter addressed to the chairman, wrote as follows: "I am writing in the hope that you, as chairman, will be broad-minded enough to look on both sides of this question, and realise how absolutely impossible it is to turn out doctors fitted to operate upon and attend the sick (poor as well as rich) without being able to study the body and to practise the operations. I can assure you that the state of affairs is really very grave at St. Bartholomew's Hospital. They are starting their session with only one body. Here at St. Thomas's I have only three, and the other schools are in the same plight. The action of the Southwark guardians has been the most serious blow which medical education has received for several years, because it represents such a large and important union. I do wish you would come and see for yourself how carefully we treat the bodies committed to our charge, and let me bring you into touch with some of our leading medical men, from whom you may get any information you desire. Other guardians have done this and have gone away fully satisfied." Mr. C. W. Matkin, vice-chairman, inquired whether the St. Thomas's school of anatomy was dependent solely on the Southwark Union for bodies. The chairman, Mr. W. Savage, replied that he was unable to say. Mr. G. Hills, in proposing that the board adhere to the previous resolution not to allow any more bodies to be sent to the school of anatomy, said he was glad to learn that other boards of guardians, especially in the North of England, were following the example of the Southwark board of guardians. The resolution was carried without further discussion.

THE TYPEWRITING MACHINE IN MEDICINE.

IN a neat little pamphlet recently issued the Yost Typewriter Co., Limited, of 50, Holborn Viaduct, London, E.C., draw attention to the advantages of the typewriter to the medical man. The company has introduced machines specially adapted for the use of professional men in, for example, the writing of prescriptions and reports, records of diagnosis, and the preparation of articles for the press. The medical signs used in prescriptions are fitted to the Yost typewriter. A facsimile of a handwritten prescription, which is hard to beat for its illegibility, is illustrated, facing an elegant reproduction of it in the neat and clear typewriting of the Yost typewriter. Similar examples of elegant typewriting are given applied to making therapeutical records.

HEALTH MATTERS IN MAURITIUS.

ONE of the latest papers presented to Parliament before the prorogation in December was the report on the Mauritius 'Blue-book for the year 1910. From this it appears that the population of the colony (excluding the military and non-resident shipping population) is about 370,000, whilst the estimated population in the dependencies and outlying islands is 6289. The total number of births in the year was 13,338, giving a proportion of 35·7 infants born to 1000 persons living. The deaths registered numbered 12,488, giving a proportion of 33·4 deaths to 1000 persons living, the lowest since the year 1904. The birth-rate showed an increase of 1·4 per 1000 as compared with 1909, and the death-rate a decrease of 3·3 per 1000. The number of patients who were admitted to the public hospitals fell from 27,751 in 1908 to 23,205 in 1909, and 18,128 in 1910. The case mortality, however, showed a further rise, that for 1909 being 5·83 per cent., the highest recorded since 1906, and that for 1910 being 6·03 per cent., the highest since 1896. The number of deaths attributed to diseases classified as specific, febrile, or zymotic was 6369, or 51 per cent. of the total, of which 4593 were due to malarial diseases, 732 to diarrhœal diseases (dysentery 582 and diarrhœa 150), 385 to miasmic diseases, and 519 to bubonic plague. There were 1094 deaths from constitutional diseases, of which 105 were due to phthisis and 775 to tuberculosis, the figures for these two diseases in 1909 having been 182 and 809 respectively. There were 3382 deaths attributed to local diseases, of which 1522 were due to diseases of the respiratory system.

There was a severe outbreak of plague, the total number of cases being 731—a greater number than in any year since 1903, when 1395 cases were recorded. The first outbreak of plague occurred in 1899, when 1416 cases were registered. From 1903 onward each year, with the exception of 1906, showed a decrease in the number, and in 1908 there were only 167 cases. The following year showed a large increase, which was continued in 1910. In 1908 the cases were confined to Port Louis and the district of Plaines Wilhelms; in 1909 the outbreak spread to Pamplemousses, Rivière du Rempart, Moka, and Savanne; and in 1910 every district in the island was attacked. The disease assumed principally the bubonic form, 615 cases being of that type. There were 25 cases of pneumonic and 2 of septicæmic plague, all of which proved fatal. Of the total number of 731 cases, 553 proved fatal, giving a case mortality of 75·6 per cent. Gratuitous vaccination with Haffkine's antiplague vaccine was offered to the public and the fluid was issued free to those who applied for it; 1218 persons availed themselves of this means of protection, of whom one contracted the disease and died.

Malarial fever accounted for 2338 admissions to public hospitals, as compared with 3674 in 1906, 4272 in 1907, 5071 in 1908, and 3929 in 1909. The case mortality was 0·8 per cent., as compared with 0·91 per cent. in the previous year. The death-rate for malarial diseases fell to 12·3 per 1000 of the population, as compared with 14 per 1000 in 1909 and 15·5 per 1000 in 1908. Corresponding to the decrease in the number of malarial patients admitted to the hospitals, there was a decrease in the number of admissions for splenic hypertrophy, the figures being 1193 in 1908, 886 in 1909, and 561 in 1910.

In the Government and aided schools 12,724 children were examined for enlarged spleen, 24 per cent. of the children being found to be affected. The examination of children on the estates had not proved successful owing to the disinclination of the labourers to allow their children to be submitted to a spleen examination. The free distribution of quinine from depôts and at schools has been continued, the amount of the drug so distributed being 2151 lb. In April, 1910, malaria broke out in an epidemic form at La Dagotière and Valetta in the district of Moka, and a vigorous campaign was at once undertaken, in which ready assistance and coöperation was afforded by the proprietor of Valetta estate. The streams, canals, drains, and other places suited to the breeding of mosquitoes were cleared and cleaned, and quinine was distributed free by house-to-house visitation. As a result of these measures, the number of deaths at La Dagotière fell from 21 in the first half of the year to 6 in the second half, and at Valetta from 14 in the first half to 6 in the second half of the year. The number of children presented for vaccination at the public vaccine stations was 10,312, as compared with 9709 in 1909. Of this number 10,097 were successful.

THE "ALBAR" BREATHING APPARATUS.

WE have received from the Rev. Allan Barratt a little instrument, which he has invented for the purpose of expanding the alæ nasi and thus allowing the maximum quantity of air to reach the lungs through the nose. The instrument is made either of silver or of gold, and consists of a short length of stiff wire with a small forceps-like attachment hinged at each end. The forceps are fastened to the sides of the nose by means of a small screw, and the alæ are thus stretched apart. The apparatus is comfortable to wear, and is certainly in suitable cases an aid in overcoming mouth-breathing. An instrument of this kind might prove of use after operations for adenoids and polypus. The agents are the Albar Sales Company, 46, Holborn Viaduct, London, E.C., and the price of the instrument is 7*s.* 6*d.* in silver and £1 1*s.* in gold.

THE MINN-SLING.

Dr. G. V. Hewland has sent us for notice a new form of arm sling. The Minn-sling is really an adaptation of the triangular bandage made of a silk material, in black or colours. A broad piece of fabric is gathered at each end for the arm rest, and a band, with a buckle for adjustment, is attached to the gathered part and passed round the neck to suspend the sling. It is reversible, so that it can be used for either the right or the left arm, and is suitable for the whole limb, the forearm, or the hand. It seems to us that it should be light and comfortable to wear, while it grips the elbow quite firmly, and after the first adjustment the sling can be used again without alteration. The band can be worn under the coat collar, and there is no pressure on the neck from the buckle which comes at the side. We think the inventor can fairly claim that the Minn-sling possesses several advantages over the old handkerchief sling. It can be obtained in different sizes suitable from Messrs. Maw, Son, and Sons, of Aldersgate-street, London, E.C.

THE MODERN CATALOGUE OF THE MANUFACTURING CHEMIST.

THE advances made in pharmacy and pharmacology in recent years are well illustrated in the modern price list. It is, in fact, no longer a mere price list; it is very often a suggestive therapeutic guide. Apart from pure drugs and synthetic remedies there have now to be included the various metallo-organic preparations and those of organo-therapy. The call for control over the purity, constancy, and potency of modern remedies is urgent, and this is well illustrated in a general price list which has recently been issued by Messrs. Duncan, Flockhart, and Co., of South Canongate, Edinburgh, and 143, Farringdon-road, London, E.C. The list contains those standard drugs and combinations for which the firm is well known, and a section is devoted to the description of primary and secondary vaccines, tuberculins, and so forth.

"FOOD REFORM."

WE have received from the National Food Association, which numbers among its vice-presidents Sir Lauder Brunton, Professor Sims Woodhead, M.D., Professor Howard Marsh, F.R.C.S., and Professor Irving Fisher, of Yale, a copy of the new and revised edition of "Hints Towards Diet Reform," with 24 simple recipes. Copies can be obtained, price 2*d.*, or post free 3*d.*, from the secretary of the association, 178, St. Stephen's House, Victoria Embankment, London.

Enquirer would be glad if any reader of THE LANCET would inform him, through the medium of our columns, where he could find details regarding the technique of examination of the fæces for tubercle bacilli and deviation of complement in tuberculous individuals.

COMMUNICATIONS not noticed in our present issue will receive attention in our next.

A DIARY OF CONGRESSES.

WE shall publish this diary from time to time that our readers may have under their hands the dates of the approaching scientific Congresses. It is unnecessary to issue the lists of all these functions week by week, and we propose to make only such gatherings as will occur in the immediate future the subject of regular announcement. The following Congresses, Conferences, and Exhibitions are announced for the next few months:—

Feb. 13th–14th (London).—Central Poor-Law Conference.
March 7th–11th (Berlin).—Thirty-third Balneological Congress.
March 23rd–April 4th (London, Royal Agricultural Hall).—International Smoke Abatement Exhibition.
April 1st and 2nd (Milan).—Italian National Convention upon the Sexual Question.
" (London).—First Congress of Pure Food and Health Society of Great Britain.
" 1st–7th (Tunis).—Twenty-second Congress of French-speaking Alienists and Neurologists.
" 8th–13th (Rome).—Seventh International Congress of Dermatology and Syphilology.
" 8th–15th (Johannesburg).—Thirteenth South African Medical Congress.

METEOROLOGICAL READINGS.

(Taken daily at 8.30 a.m. by Steward's Instruments.)

THE LANCET Office, Feb. 7th, 1912.

Date.		Barometer reduced to Sea Level and 32° F.	Direction of Wind.	Rain fall.	Solar Radio in Vacuo.	Maximum Temp. Shade.	Min. Temp.	Wet Bulb.	Dry Bulb.	Remarks.
Feb.	1	29·73	W.	...	45	40	34	34	35	Overcast
"	2	29·34	N.	...	43	32	26	...	27	Fine
"	3	29·53	W.	...	49	33	21	...	23	Fine
"	4	29·56	N.E.	...	39	28	23	...	24	Snowing
"	5	29·29	S.E.	0·03	44	37	23	...	25	Overcast
"	6	29·17	E.	0·05	56	47	25	37	37	Foggy
"	7	29·36	S.	0·02	74	50	37	41	42	Fine

Medical Diary for the ensuing Week.

SOCIETIES.

ROYAL SOCIETY OF MEDICINE, 15, Cavendish-square, W. (temporary address during building of new house).

TUESDAY.

SURGICAL SECTION (Hon. Secretaries—L. A. Dunn, James Berry): at 5.30 P.M.

Joint Meeting with the
MEDICAL SECTION and
SECTION OF ANÆSTHETICS.

Debate:

On a Paper by Mr. T. P. Dunhill of Melbourne: Partial Thyroidectomy under Local Anæsthesia, with Special Reference to Exophthalmic Goitre.

The Debate will be opened by Sir Victor Horsley, F.R.S. The following will take part in the Debate:—Mr. Charters Symonds, Mr. Leedham Green (Birmingham), Mr. Walter Edmunds, Mr. Wilfred Trotter, Mr. Lynn Thomas (Cardiff), Mr. Rupert Farrant, Dr. Hector Mackenzie, Dr. George Murray, Dr. Hale White, Dr. Herbert Scharlieb, Dr. Blumfeld, Dr. G. A. H. Barton, Dr. Albert Kocher (Berne), and Mr. James Berry.

The Debate will be continued on February 27th.

THURSDAY.

DERMATOLOGICAL SECTION (Hon. Secretaries—J. H. Sequeira, Wilfrid Fox), at 11, Chandos-street, W.: at 5 P.M.

Demonstration of Cases.

NEUROLOGICAL SECTION (Hon. Secretaries—Wilfred Harris, T. Grainger Stewart): at 8.30 P.M.

Dr. W. Harris: Two Cases of Hæmato-rhachis, one Cured by Laminectomy after 18 months.

Dr. F. L. Golla: The Vestibule and the Perception of Space.

FRIDAY.

OTOLOGICAL SECTION (Hon. Secretaries—Sydney Scott, A. Logan Turner), at 11, Chandos-street, W.: at 5 P.M.

Dr. W. A. Milligan: (1) A Case of Severe Vertigo (Menière's Disease?), Operation, Recovery; (2) A Case of Suppurative Labyrinthitis Complicated with Suppurative Basal Meningitis, Operation, Trans-labyrinthine Drainage, Death, Post-mortem Records.

Mr. Hugh E. Jones: Three Cases of Operation on the Labyrinth for Vertigo (Non-suppurative).

Mr. Macleod Yearsley: Yankauer's New Speculum for the Direct Examination of the Naso-pharynx and Eustachian Tube.

Mr. George N. Biggs: Short Notes of a Very Severe Case of Streptococcal Infection of Both Ears.

Dr. P. Watson-Williams: Three Cases of Lateral Sinus Thrombosis.

ELECTRO-THERAPEUTICAL SECTION (Hon. Secretaries—G. Harrison Orton, Cecil R. C. Lyster): at 8.30 P.M.

Papers:

Dr. F. Hernaman-Johnson: Secondary X-radiations, their Uses and Possibilities in Medicine.

Mr. William Hampson: A Method of Reducing Excessive Frequency of the Heart Beat by Means of Rhythmical Muscle Contractions Electrically Stimulated.

MEDICAL SOCIETY OF LONDON, 11, Chandos-street, Cavendish-square, W.

MONDAY.—8.30 P.M., Dr. StClair Thomson: Cancer of the Larynx Treated by Larynx-fissure, with 80 per cent. of Lasting Cures.—Dr. W. H. Kelson: Aching Throat.

PHARMACEUTICAL SOCIETY OF GREAT BRITAIN, 17, Bloomsbury-square, W.C.

TUESDAY.—8 P.M., Prof. H. G. Greenish and Miss D. J. Bartlett: The Powdered Gentian, Nux Vomica, and Ipecacuanha of Commerce.

HUNTERIAN SOCIETY, London Institution, Finsbury-circus, E.C.

WEDNESDAY.—8.30 P.M., Council Meeting. 9 P.M., Dr. G. Lyon: The Cure of Consumption, a Review and a Forecast.

UNITED SERVICES MEDICAL SOCIETY, Royal Army Medical College, Grosvenor-road, S.W.

WEDNESDAY.—5 P.M., Lieut.-Col. C. H. Melville, R.A.M.C.: Boots.—Mr. A. H. Tubby: Foot Deformities Acquired in Adult Life.—Lieut. Col. J. F. Donegan, R.A.M.C.: Demonstration of a Field Operating Table and of a Method of Attaching the First Field Dressing.

LECTURES, ADDRESSES, DEMONSTRATIONS, &c.

MEDICAL GRADUATES' COLLEGE AND POLYCLINIC, 22, Chenies-street, W.C.

MONDAY.—4 P.M., Dr. A. M. H. Gray: Clinique (Skin). 5.15 P.M. Lecture:—Mr. C. H. Fagge: On the Selection for Operation of Fractures of the Long Bones.

TUESDAY.—4 P.M., Dr. H. Campbell: Clinique (Medical). 5.15 P.M., Lecture:—Dr. D. Forsyth: Coma and its Differential Diagnosis.

WEDNESDAY.—4 P.M., Mr. R. Milne (jun.): Clinique (Surgical). 5.15 P.M., Lecture:—Dr. F. J. McCann: Some Common Mistakes in the Diagnosis of the Diseases of Women.

THURSDAY.—4 P.M., Dr. E. Pritchard: Clinique (Medical). 5.15 P.M., Lecture:—Dr. J. L. Bunch: Some Tubercular Affections of the Skin.

FRIDAY.—4 P.M., Dr. J. G. French: Clinique (Ear, Nose, and Throat).

POST-GRADUATE COLLEGE, West London Hospital, Hammersmith-road, W.

MONDAY.—10 A.M., Dr. Simson: Diseases of Women. 10.30 A.M., Surgical Registrar: Demonstration of Cases in Wards. 12 noon, Dr. Bernstein: Pathological Demonstration. 2 P.M., Medical and Surgical Clinics. X Rays. Operations. 2.30 P.M., Mr. Dunn: Diseases of the Eye. 5 P.M., Lecture:—Mr. Edwards: Rectal Surgery.

TUESDAY.—10 A.M., Dr. Robinson: Gynæcological Operations. 11.30 A.M., Mr. Etherington-Smith: Demonstration of Minor Operations. 2 P.M., Medical and Surgical Clinics. X Rays. Operations. Dr. Davis: Diseases of the Throat, Nose, and Ear. 2.30 P.M., Dr. Abraham: Diseases of the Skin. 5 P.M., Lecture:—Dr. Morton: The Principles and Applications of Radio-Therapeutics.

WEDNESDAY.—10 A.M., Dr. Saunders: Diseases of Children. Dr. Davis: Operations of the Throat, Nose, and Ear. 10.30 A.M., Surgical Registrar: Demonstration of Cases in Wards. 2 P.M., Medical and Surgical Clinics. X Rays. Operations. Mr. B. Harman: Diseases of the Eye. 2.30 P.M., Dr. Simson: Diseases of Women. 5 P.M., Lecture:—Mr. Etherington-Smith: Clinical. (Lecture I.)

THURSDAY.—10 A.M., Dr. Simson: Gynæcological Demonstration. 12.15 P.M., Lecture:—Dr. G. Stewart: Practical Medicine. 2 P.M., Medical and Surgical Clinics. X Rays. Operations. 2.30 P.M., Mr. Dunn: Diseases of the Eye. 5 P.M., Lecture:—Mr. Baldwin: Practical Surgery. (Lecture IV.)

FRIDAY.—10 A.M., Dr. Robinson: Gynæcological Operations. 12.15 P.M., Lecture:—Dr. Pritchard: Practical Medicine. 2 P.M., Medical and Surgical Clinics. X Rays. Operations. Dr. Davis: Diseases of the Throat, Nose, and Ear. 2.30 P.M., Dr. Abraham: Diseases of the Skin. 5 P.M., Lecture:—Dr. Abraham: Cases of Skin Disease.

SATURDAY.—10 A.M., Dr. Saunders: Diseases of Children. Dr. Davis: Operations of the Throat, Nose, and Ear. Mr. Bishop Harman: Diseases of the Eye. 10.30 A.M., Medical Registrar: Demonstration of Cases in Wards. 2 P.M., Medical and Surgical Clinics. X Rays. Operations.

NORTH-EAST LONDON POST-GRADUATE COLLEGE, Prince of Wales's General Hospital, Tottenham, N.

MONDAY.—Clinics:—10.30 A.M., Surgical Out-patient (Mr. H. Gillespie). 2.30 P.M., Medical Out-patient (Dr. T. R. Whipham): Nose, Throat, and Ear (Mr. H. D. Gillies). 3 P.M., Clinical Pathology and Pathological Demonstration (Dr. W. H. Duncan).

TUESDAY.—Clinic: 2.30 P.M., Operations. Clinics:—Medical Out-patient (Dr. A. G. Auld).; Surgical (Mr. Howell Evans); Gynæcological (Dr. A. H. Giles). 3.30 P.M., Medical In-patient (Dr. A. J. Whiting). 4.30 P.M., Lecture:—Dr. W. H. Duncan: The Diagnosis of Malignant Disease.

WEDNESDAY.—Clinics:—2 P.M., Throat Operations (Mr. Gillies). 2.30 P.M., Children's Out-patient (Dr. T. R. Whipham); Skin (Dr. G. N. Meachen); Eye (Mr. R. P. Brooks). 3 P.M., X Rays (Mr. W. Steuart); Clinical Pathology and Pathological Demonstration (Dr. W. H. Duncan). 5.30 P.M., Eye Operations (Mr. Brooks).

THURSDAY.—2.30 P.M., Gynæcological Operations (Dr. A. H. Giles). Clinics:—Medical Out-patient (Dr. A. J. Whiting); Surgical (Mr. Carson). 3 P.M., Medical In-patient (Dr. G. P. Chappel). 4.30 P.M., Lecture:—Dr. G. N. Meachen: Eczema and Allied Conditions.

FRIDAY.—2.30 P.M., Operations. Clinics:—Medical Out-patient (Dr. A. G. Auld); Surgical (Mr. H. Gillespie); Eye (Mr. R. P. Brooks). 3 P.M., Medical In-patient (Dr. R. M. Leslie), Clinical Pathology and Pathological Demonstration (Dr. W. H. Duncan).

LONDON SCHOOL OF CLINICAL MEDICINE, Dreadnought Hospital, Greenwich.

MONDAY.—2 P.M., Operations. 2.15 P.M., Mr. Turner: Surgery. 3.15 P.M., Sir Dyce Duckworth: Medicine. 4.30 P.M., Mr. R. Lake: Ear and Throat. Out-patient Demonstrations:—10 A.M., Surgical and Medical. 12 noon, Ear and Throat.

TUESDAY.—2 P.M., Operations. 3.15 P.M., Dr. R. Wells: Medicine. 2.15 P.M., Mr. R. Carling: Surgery. 4.15 P.M., Sir M. Morris: Diseases of the Skin. Out-patient Demonstrations:—10 A.M., Surgical and Medical. 12 noon, Skin. 5 P.M., Special Lecture:—Mr. McGavin: Fractures.

WEDNESDAY.—2 P.M., Operations. 2.15 P.M., Dr. F. Taylor: Medicine. 3.30 P.M., Mr. Cargill: Ophthalmology. Out-patient Demonstrations:—10 A.M., Surgical and Medical. 11 A.M., Eye. 3.30 P.M., Special Lecture:—Mr. Cargill: Squint (Concomitant and Paralytic).

THURSDAY.—2 P.M., Operations. 2.15 P.M., Dr. G. Rankin: Medicine. 3.15 P.M., Sir W. Bennett: Surgery. Out-patient Demonstrations:—10 A.M., Surgical and Medical. 12 noon, Ear and Throat. 2.15 P.M., Special Lecture:—Dr. Rankin. Enteric Fever.

FRIDAY.—2 P.M., Operations. 2.15 P.M., Sir J. Rose Bradford: Medicine. 3.15 P.M., Mr. McGavin: Surgery. Out-patient Demonstrations:—10 A.M., Surgical and Medical. 12 noon, Skin.

SATURDAY.—10 A.M., Radiography. 11 A.M., Dr. A. Davies: Pathological Demonstration. 2 P.M., Operations. Out-patient Demonstration:—10 A.M., Surgical and Medical. 11 A.M., Eye.

HOSPITAL FOR SICK CHILDREN, Great Ormond-street, W.C.

THURSDAY.—4 P.M., Lecture:—Mr. Corner: Delayed Chloroform Poisoning.

NATIONAL HOSPITAL FOR THE PARALYSED AND EPILEPTIC, Queen-square, Bloomsbury, W.C.

TUESDAY.—3.30 P.M., Clinical Lecture:—Dr. H. Tooth: Hysterical Paralysis.

FRIDAY.—3.30 P.M., Clinical Lecture:—Dr. H. Tooth: Disseminated Sclerosis.

ST. JOHN'S HOSPITAL FOR DISEASES OF THE SKIN, 49, Leicester-square, W.C.

TUESDAY.—6 P.M., Dr. W. K. Sibley: General Principles of Treatment of Diseases of the Skin.

THURSDAY.—6 P.M., Chesterfield Lecture:—Dr. M. Dockrell: Seborrhœa and Psoriasis dealt with as Stages of the Same Dermatitis in Symptoms, Diagnosis, and Treatment.

UNIVERSITY OF LONDON (UNIVERSITY COLLEGE), The Francis Galton Laboratory for National Eugenics.

TUESDAY.—8.30 P.M., Ethel M. Elderton: Infantile Mortality—the Employment of Mothers and the Occupation of Fathers. (Lecture III.)

GRESHAM LECTURES, City of London School, Victoria Embankment, E.C.

TUESDAY.—6 P.M., Dr. F. M. Sandwith: Sleeping Sickness—The Tsetse Fly Disease of Animals and the Early History of Sleeping Sickness.

WEDNESDAY.—6 P.M., Dr. F. M. Sandwith: Sleeping Sickness—How Sleeping Sickness is Conveyed to Man.

THURSDAY.—6 P.M., Dr. F. M. Sandwith: Sleeping Sickness—What We Know To-day about Sleeping Sickness.

FRIDAY.—6 P.M., Dr. F. M. Sandwith: Sleeping Sickness—Lantern Slides illustrating the Previous Lectures.

ROYAL INSTITUTION OF GREAT BRITAIN, Albemarle-street Piccadilly, W.

TUESDAY.—3 P.M., Prof. W. Bateson: The Study of Genetics. (Lecture V.)

ANCOATS HOSPITAL, Manchester.

THURSDAY.—4.15 P.M., Mr. E. S. Bishop: Gastric Surgery. (Post-Graduate Clinic.)

MANCHESTER ROYAL INFIRMARY.

TUESDAY.—4.30 P.M., Dr. Cunliffe: Exophthalmic Goitre and Myxœdema.

OPERATIONS.

METROPOLITAN HOSPITALS.

MONDAY (12th).—London (2 P.M.), St. Bartholomew's (1.30 P.M.), St. Thomas's (3.30 P.M.), St. George's (2 P.M.), St. Mary's (2.30 P.M.), Middlesex (1.30 P.M.), Westminster (2 P.M.), Chelsea (2 P.M.), Samaritan (Gynæcological, by Physicians, 2 P.M.), Soho-square (2 P.M.), Gt. Northern Central (2.30 P.M.), West London (2.30 P.M.), London Throat (9.30 A.M.), Royal Free (2 P.M.), Guy's (1.30 P.M.), Children, Gt. Ormond-street (9 A.M.), St. Mark's (2.30 P.M.), Central London Throat and Ear (Minor 9 A.M., Major 2 P.M.).

TUESDAY (13th).—London (2 P.M.), St. Bartholomew's (1.30 P.M.), St. Thomas's (3.30 P.M.), Guy's (1.30 P.M.), Middlesex (1.30 P.M.), Westminster (2 P.M.), West London, (2.30 P.M.), University College (2 P.M.), St. George's (1 P.M.), St. Mary's (1 P.M.), St. Mark's (2.30 P.M.), Cancer (2 P.M.), Metropolitan (2.30 P.M.), London Throat (9.30 A.M.), Samaritan (9.30 A.M. and 2.30 P.M.), Throat, Golden-square (9.30 A.M.), Soho-square (2 P.M.), Chelsea (2 P.M.), Children, Gt. Ormond-street (9 A.M. and 2 P.M., Ophthalmic, 2 P.M.), Tottenham (2.30 P.M.). Central London Throat and Ear (Minor, 9 A.M., Major, 2 P.M.), Royal National Orthopædic (9.30 A.M. and 4 P.M.).

WEDNESDAY (14th).—St. Bartholomew's (1.30 P.M.), University College (2 P.M.), Royal Free (2 P.M.), Middlesex (1.30 P.M.), Charing Cross (3 P.M.), St. Thomas's 2 P.M.), London (2 P.M.), King's College (2 P.M.), St. George's (Ophthalmic, 1 P.M.), St. Mary's (2 P.M.), St. Peter's (2 P.M.), Samaritan (9.30 A.M. and 2.30 P.M.), Gt. Northern Central (2.30 P.M.), Westminster (2 P.M.), Metropolitan (2.30 P.M.), London Throat (9.30 A.M.), Cancer (2 P.M.), Throat, Golden-square (9.30 A.M.), Guy's (1.30 P.M.), Royal Ear (2 P.M.), Children, Gt. Ormond-street (9 A.M. and 9.30 A.M., Dental, 2 P.M.), Tottenham (Ophthalmic, 2.30 P.M.), West London (2.30 P.M.), Central London Throat and Ear (Minor, 9 A.M., Major, 2 P.M.).

THURSDAY (15th).—St. Bartholomew's (1.30 P.M.), St. Thomas's (3.30 P.M.), University College (2 P.M.), Charing Cross (3 P.M.), St. George's (1 P.M.), London (2 P.M.), King's College (2 P.M.), Middlesex (1.30 P.M.), St. Mary's (2.30 P.M.), Soho-square (2 P.M.), North-West London (2 P.M.), Gt. Northern Central (Gynæcological, 2.30 P.M.), Metropolitan (2.30 P.M.), London Throat (9.30 A.M.), Samaritan (9.30 A.M and 2.30 P.M.), Throat, Golden-square (9.30 A.M.), Guy's (1.30 P.M.), Royal National Orthopædic (9 A.M. and 3.30 P.M.), Royal Ear (2 P.M.), Children Gt. Ormond-street (9 A.M. and 2 P.M.), Tottenham (Gynæcological, 2.30 P.M.), West London (2.30 P.M), Central London Throat and Ear (Minor, 9 A.M., Major, 2 P.M.).

FRIDAY (16th).—London (2 P.M.), St. Bartholomew's (1.30 P.M.), St. Thomas's (3.30 P.M.), Guy's (1.30 P.M.), Middlesex (1.30 P.M.), Charing Cross (3 P.M.), St. George's (1 P.M.), King's College (2 P.M.), St. Mary's (2 P.M.), Ophthalmic (10 A.M.), Cancer (2 P.M.), Chelsea (2 P.M.), Gt. Northern Central (2.30 P.M.), West London (2.30 P.M.), London Throat (9.30 A.M.), Samaritan (9.30 A.M. and 2.30 P.M.), Throat, Golden-square (9.30 A.M.), Royal National Orthopædic (3.30 P.M.), Soho-square (2 P.M.), Children, Gt. Ormond-street (9 A.M., Aural, 2 P.M.), Tottenham (2.30 P.M.), St. Peter's (2 P.M.)., Central London Throat and Ear (Minor, 9 A.M., Major, 2 P.M.).

SATURDAY (17th).—Royal Free (9A.M.), London (2 P.M.), Middlesex (1.30 P.M.), St. Thomas's (2 P.M.), University College (9.15 A.M.), Charing Cross (2 P.M.), St. George's (1 P.M.), St. Mary's (10 A.M.), Throat, Golden-square (9.30 A.M.), Guy's (1.30 P.M.), Children, Gt. Ormond-street (9 A.M. and 9.30 A.M.), West London (2.30 P.M.).

At the Royal Eye Hospital (2 P.M.), the Royal London Ophthalmic (10 A.M.), the Royal Westminster Ophthalmic (1.30 P.M.), and the Central London Ophthalmic (2 P.M.), Hospital operations are performed daily.

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A Lecture
ON
EXPERIMENTAL POLIOMYELITIS.

Delivered at the National Hospital for the Paralysed and Epileptic, Queen-square, on Feb. 6th, 1912,

BY FREDERICK E. BATTEN, M.D. CANTAB., F.R.C.P. LOND.,
PHYSICIAN FOR OUT-PATIENTS AT THE HOSPITAL, ETC.

GENTLEMEN,—The earlier experimental work on the transmission of poliomyelitis from man to monkeys is now so well known that it is not proposed in this lecture to refer to it in any detail, but the following brief summary of the facts of its transmission may well be mentioned.

EARLIER EXPERIMENTAL WORK.

In 1909 Landsteiner and Popper succeeded in transmitting poliomyelitis to two monkeys; they did not succeed in transmitting the disease to a series of monkeys. In the same year Knöpfelmacher produced the disease in a monkey by injecting into the peritoneum an emulsion of the spinal cord from a case of poliomyelitis. In the same year Strauss and Huntoon in America succeeded in producing poliomyelitis in a monkey by intraperitoneal injection.

Flexner and Lewis in 1910 produced the disease in monkeys by intracerebral injections, and were the first observers to transmit the disease through a series of monkeys. Landsteiner and Levaditi showed that the virus would pass through porcelain filters and also that glycerine did not destroy the virus. Working on the same lines and at the same time, Leiner and Wiesner in Vienna, Roemer and Joseph in Marburg, Krause and Meinicke confirmed these observations and added much to the knowledge of the nature of the virus.

NATURE OF THE VIRUS.

(*a*) *Filterability.*—It was shown by Flexner and Lewis, and Landsteiner and Levaditi that the virus would pass a porcelain filter. The latter observers noted that it would pass the Berkefeld, Chamberland, and Reichel filters, but that, after such a passage through the filter, the virus lost some of its virulence, and the incubation period was always prolonged, and the monkey either did not die or only died some days after the development of the disease.

(*b*) *Glycerine resistance.*—It has been shown by Landsteiner and Levaditi that the virus will resist the action of glycerine either concentrated or with 50 per cent. of water without impairing its virulence. The virus has been kept for 142 days in pure glycerine without affecting its virulence. In this respect the virus resembles that of rabies and vaccinia.

(*c*) *Resistance to drying.*—Flexner and Lewis, Landsteiner and Levaditi found that prolonged drying even to 24 days at a temperature of 22° C. did not diminish the virulence, and in this respect differed from rabies. Leiner and Wiesner, however, found that drying of thin films for four hours at a temperature of 37° C. did destroy the virulence. Leiner and Wiesner have shown that the virus is killed by exposure to a temperature of 55° C. for half an hour, and it is not killed by exposure to a temperature of −8° C.

(*d*) *Resistance to disinfectants.*—It has been shown by Landsteiner and Levaditi that 0·2 per cent. solution of potassium permanganate will kill the virus in one hour at a temperature of 39° C., and that 6 per cent. peroxide at the same temperature will destroy the virus in 45 minutes. The virus is not killed by ½ to 1½ per cent. of carbolic acid.

(*e*) *Cultivation of organism.*—The organism has not yet been cultivated, although Flexner and Lewis found some evidence that the organism multiplied in mixtures of broth and monkey serum.

The organism has not been stained or seen under the microscope, although Levaditi found a small round and oval corpuscle which he was able to stain by Löffler's method as modified by Borrel. Roemer made a similar observation, and examined them under the ultra-microscope.

THE RETENTION OF THE VIRUS IN THE ANIMAL BODY.

The question how long the virus remains in the body of the animal is difficult to answer. It has been found in the spinal cord 33 days after the onset of the disease. On the other hand, Leiner and Wiesner found that it had disappeared from the cord six days after the onset of the paralysis. In other parts of the body—viz., the nasal mucous membrane—it has been found six months after the onset (Osgood and Lucas).

PREPARATION OF EMULSION AND METHOD OF INFECTION.

The emulsion is prepared by pounding up 1 gramme of the infected portion of the spinal cord with 20 c.c. of normal saline solution; 0·5 c.c. of this emulsion is injected into the brain and 4–5 c.c. into the peritoneal cavity (Roemer).

The most certain method of producing infection is by injection of the virus into the brain. Injection into the peritoneal cavity, the anterior chamber of the eye, the subcutaneous tissue, and intravenous injections have all been successful in producing the disease.

Leiner and Wiesner showed that the virus could pass through the gastro-intestinal mucosa, but other observers, Levaditi and Landsteiner, failed to obtain positive results, and suggest that infection only takes place if there is a previous lesion of the intestinal walls. Leiner and Wiesner, in order to avoid the action of gastric juice, injected the virus into certain portions of the intestines after opening the abdomen. Three of the four monkeys thus operated on developed poliomyelitis. The fact that the virus can penetrate the mucous membrane of the digestive tract raises the possibility of the transmissibility of poliomyelitis by milk.

The virus will pass the nasal mucous membrane if injured (Landsteiner and Levaditi), but Leiner and Wiesner have shown that it will pass the uninjured mucous membrane. No case of natural contagion has been reported in a monkey, although infected and non-infected monkeys have been kept in close contact in the same cage.

MODE OF PROPAGATION OF VIRUS WITHIN THE BODY.

(*A*) *By the blood-stream.*—Injection into the blood-stream gives rise to poliomyelitis. This shows that the blood stream can carry the virus.

(*B*) *By the lymphatic system.*—Leiner and Wiesner produced poliomyelitis by injecting the inguinal glands with the virus. Flexner and Lewis injected a monkey subcutaneously with the virus. The animal was killed while suffering from poliomyelitis. From this monkey they then injected three monkeys: (1) with the spinal cord emulsion; (2) with the nodule formed at the place of injection; and (3) with the lymphatic gland corresponding with the inoculated region. Only the monkey that was injected with No. 2, the nodule, remained unaffected.

The virus has been obtained from the mesenteric glands of a child suffering with poliomyelitis (Flexner and Lewis). It has been shown (Flexner and Lewis, Levaditi and Landsteiner) that the virus injected into a peripheral nerve gives rise to paralysis, the disease commencing in the limb corresponding to the nerve injected.

Leiner and Wiesner found that if the nerve is divided immediately after the introduction of the virus into the peripheral end the spread of the disease is prevented. In whatever way the animal is infected, it is in the central nervous system, and especially the grey matter of the cord, that the virus tends to locate itself.

The disease cannot be transmitted by blood obtained from paralytic men and monkeys. This statement, though in the main true, is not absolutely so, for it has been shown by Flexner and Lewis—if large quantities, i.e., 25 c.c., are withdrawn from a monkey at the height of the disease, and are injected into a healthy monkey—that animal develops the disease. From human blood the disease has not been produced. The cerebro-spinal fluid also is free from the virus. In this connexion, however, Flexner and Lewis found that the cerebro-spinal fluid taken from a monkey three days after it had been given a cerebral injection and injected into a fresh monkey gave rise to poliomyelitis in six days. This shows that the virus can multiply in the cerebro-spinal fluid before the outbreak of paralytic symptoms.

INCUBATION PERIOD.

The incubation period is subject to very considerable variations. The variations depend upon (1) the *method of injection*, (2) the amount of virus given, and (3) the method of treating the virus before injection. Of 81 monkeys infected by Lewis and Flexner, 47 became paralysed between

the eighth and twelfth day, 18 became paralysed before the eighth day, and 16 after the twelfth day. Levaditi found the average incubation period from seven to ten days, and Roemer gives the incubation period as nine days.

The following factors were found to govern the incubation period. The less virulent the material, the longer was the incubation period. Filtration diminished the virulence (Levaditi and Landsteiner, Leiner and Wiesner). Thus an unfiltered emulsion produced poliomyelitis in seven days; the same quantity of filtered emulsion produced poliomyelitis in 27 days.

The quantity given also alters the incubation period. Dilution, again, has the same effect, and if diluted beyond a certain limit the virus will not produce poliomyelitis (Roemer). Thus an animal, injected intracerebrally with 0·5 c.c. of a 5 per cent. spinal cord emulsion, became paralysed on the seventh day and died on the eighth day. Another monkey, inoculated with the same quantity but ten times less concentrated, became ill on the twelfth and died on the thirteenth day. Another monkey, injected with the same quantity 100 times diluted, survived without having manifested any paralytic symptoms.

Leiner and Wiesner found that inoculation of a very concentrated virulent emulsion appeared to exercise rather an unfavourable influence on the development of poliomyelitis. The incubation period was slightly longer, and the course of the disease goes on as if in the nervous tissues there were, in addition to the acting virus, certain preventive substance which exercises a neutralising action on the virus.

WHAT HAPPENS DURING THE INCUBATION PERIOD?

Leiner and Wiesner showed that the virus spread to the nervous system before it was possible to observe any morbid manifestation in the central nervous system. Levaditi and Landsteiner found that the anatomical and pathological alterations commenced at a time very close to the outbreak of clinical signs. The virus of poliomyelitis can invade the nervous system and multiply there without causing for a time any apparent trouble or distinct lesion. The paralytic phenomena in a monkey may commence very suddenly—i.e., the monkey may be quite well in the morning and completely paralysed by the evening. It is a striking fact that in the majority of cases, in spite of the inoculation of the virus into the brain, the disease commences by paralysis localised to the lower extremities.

INFECTION OF ANIMALS OTHER THAN MONKEYS AND APES.

Most observers have failed to transmit the disease to animals other than monkeys and apes. Flexner and Lewis tried the horse, ox, pig, rat, cat, and rabbit. Levaditi and Landsteiner tried the rabbit, guinea-pig, young dog, and sheep. Leiner and Wiesner tried young dogs, fowls, pigeons, and rabbits; and Roemer rabbits, guinea-pigs, and mice. All without success.

Krause and Meinicke, Lentz and Huntemüller assert that they transmitted poliomyelitis regularly to rabbits. These rabbits succumbed with or without paralytic symptoms, and on histological examination the characteristic changes of poliomyelitis, more or less pronounced, were found. These investigators think that the inoculation into rabbits of cerebro-spinal fluid, blood, brain, or spleen obtained from human cases of poliomyelitis leads to the death of these animals, and the inoculation of similar tissues obtained from rabbits that have succumbed into other rabbits will bring about their death. When the injections were made into the blood and peritoneal cavity a greater number of positive results were made than when they were made into the brain. The effects could be produced in rabbits, not only with an emulsion of the organs mentioned, but also with Berkefeld filtrates prepared from them. Levaditi once succeeded in transmitting poliomyelitis in a rabbit, and the spinal lesion was even more marked than in a monkey.

Marks has further investigated this question. He used young rabbits; these were injected with an emulsion of the spinal cord from a poliomyelitic monkey—2·5–35 c.c. were injected intravenously and intraperitoneally. The injection had no immediate effect on the rabbit. Some of the animals injected died between the eighth and fifteenth day after injection. When death occurred the symptoms came on suddenly, the final stage being generally ushered in by convulsions and rigidity, and death took place in from 10 to 30 minutes after the onset of the symptoms. The post-mortem examination showed hyperæmia of the cortex, but no other striking lesion, and microscopical examination failed to show any further characteristic change. Other rabbits were injected with emulsions from various organs of the rabbits which died, and some of these rabbits succumbed. The virus was thus passed through a series of six rabbits. From rabbits in the second, fourth, and sixth set of the series of rabbits, monkeys were inoculated, and these monkeys all developed typical poliomyelitis.

These results leave no doubt that poliomyelitis can be propagated in certain individual rabbits, and also that the virus is not confined to the central nervous system, but occurs in equal amount in other organs. It is probable also that not all strains of the virus can be transmitted to even a small fraction of individual rabbits, and this may account for Roemer and Joseph's failure in a long series. It is thus established that the virus of poliomyelitis can survive and probably be propagated in domestic animals that do not show any of the symptoms of poliomyelitis as it occurs in man.

Roemer has observed in guinea-pigs a disease similar to poliomyelitis in man. It arose *spontaneously* in a guinea-pig, and was transmitted to a series of these animals by inoculation. All the animals were paralysed between the ninth and twenty-third day after injection. No organism was visible; the virus passed the Berkefeld filter and was well preserved in glycerine. The virus was present in the brain, spinal cord, liver, inguinal and prævertebral glands, but was not present in the blood, kidney, lungs, or urine. The cord showed the typical lesions of poliomyelitis.

IMMUNITY.

On clinical grounds there is good reason to believe that an individual who has survived an attack of poliomyelitis is immune to a second attack. Experimentally it has been shown by Flexner and Lewis, Levaditi and Landsteiner, and Roemer, that monkeys which have survived the acute period of infection are immune to a fresh dose of the virus. Roemer considers that immunity is only acquired after about the twenty-fourth day, but other observers do not confirm this observation.

In one case Leiner and Wiesner have been able to re-infect a monkey which was paralysed for 18 days. This is probably an exceptional instance. Leiner and Wiesner performed experiments to determine if the nervous system of monkeys, killed after the acute stage had passed and the refractory stage reached, contained an appreciable quantity of the active virus. They found that they could transmit the disease by using the spinal cord of a monkey killed on the twenty-fourth day of the disease. This would seem to show that the active virus and the antibodies can exist at the same time and in the same individual.

PRODUCTION OF ARTIFICIAL IMMUNITY.

Levaditi and Landsteiner used the same method for rendering a monkey immune against poliomyelitis as is used for producing immunity against rabies. To a certain extent this method was successful, but in some cases poliomyelitis has been produced by injection of the dried cords. Flexner and Lewis, by giving injections of diluted virus, were able to make monkeys immune to many times the lethal dose.

Flexner and Clark found the immunity principle to exist, both in the blood and cerebro-spinal fluid, soon after an attack of poliomyelitis. After one to two months the cerebro-spinal fluid lost its immunity principles, but it remained in the blood for years.

Hexamethylenamine given by the mouth delays, and may prevent, infection (Flexner and Clark). Kraus found that saline emulsion of brain and cord of a monkey, treated for five days with 1–1½ per cent. carbolic, is no longer infective on subcutaneous injection; 10 c.c. of virus thus sterilised, injected subcutaneously, protects animals against a subsequent subdural infection. Serum which is viricidal *in vitro* does not confer protection when injected subcutaneously.

SERUM DIAGNOSIS.

1. *Experimental method.*—Levaditi and Landsteiner, and Müller have shown that it is possible to test the serum of patients and monkeys for their viricidal properties. For this purpose a 5 per cent. emulsion of the spinal cord containing the active virus is mixed with an equal quantity of the serum to be tested. The mixture must be made at a temperature of 34° C., and stood at room temperature for several hours. It is then injected intracerebrally in quantities of 0·6–0·8 c.c.

into a normal monkey. A control monkey receives the same quantity of the virus. The control monkey becomes infected, the other monkey remains free. This experiment has been tried with the blood of patients who have had herpes zoster, but the experiments were inconclusive, as the control monkey was not affected (Müller).

Anderson and Frost found that the blood serum, in six out of nine suspected cases of abortive poliomyelitis, was viricidal against the virus of the poliomyelitis. Landsteiner, Levaditi, Leiner, and Wiesner have all shown that the serum is viricidal *in vitro*, but not *in vivo*. The serum injected into animals has no preventive or curative effect.

2. *Deviation of the complement method.* — This point has been investigated by Wollstein, Roemer, Joseph, Levaditi, and Landsteiner. All these observers agree that the use of an extract of organs containing the virus as antigen does not permit the discovery of antibodies in the serum or cerebro-spinal fluid.

"BREEDS" OF VIRUS.

It is essential before discussing "breeds" of viruses to understand how the words "breeds," "races," and "strains" should be used. The word "breed" is used to indicate a variation in character of the virus. The word "races" should be used in the same sense. Flexner and Clark have used the word "race" to indicate increased or decreased virulence of the virus as applied to monkeys and man. The word "strain" is used to indicate a variation in the source from which the virus is obtained.

Levaditi has brought forward evidence to show that there are differences between the viruses obtained from different sources. So far two breeds are known—the virus of Landsteiner, Vienna, and the virus of Flexner, America. Levaditi has shown that the virus of Flexner is neutralised *in vitro* by the serum of a monkey which has been rendered immune to the Flexner virus. It is not neutralised by the serum of a monkey rendered immune to the Landsteiner virus. On the other hand, the virus of Landsteiner is neutralised by the serum of a monkey rendered immune to the Landsteiner virus, but it is not neutralised by the serum from a monkey rendered immune to the Flexner virus.

The Flexner virus is more virulent than the Landsteiner virus. It remains to be proved if the English virus differs from the above two. No one in England has succeeded in transmitting the disease from an English strain to a monkey.

Flexner and Clark state that they have succeeded in implanting upon monkeys all the ten strains of human virus which they have examined. That is to say, monkeys have been infected from ten human cases. These authors state that other experimenters have only been able to implant about one half of the human strains of poliomyelitic virus upon monkeys. In order to succeed in all instances it is necessary to inoculate emulsions of the human spinal cord, and preferably to make double inoculation into the brain and peritoneal cavity.

The human strains of the virus not only infect monkeys less readily than do the modified or monkey strains, but the experimental disease produced by them is less severe and less fatal. After the strains have once become wholly adapted to the monkey the paralytic disease appears in a more severe form, and the degree of infectivity rises, so that exceedingly minute doses of a filtrate are capable of producing constant infection.

ELIMINATION OF THE VIRUS.

Levaditi and Landsteiner have found the virus in the salivary glands. It has not been found in the saliva. Flexner and Lewis have found the virus in the mucous membrane of the nose of a monkey killed during the acute stages of the disease. Osgood and Lucas have found it in this situation six months after the onset of the disease. Leiner and Wiesner showed that the nasal mucous membrane became infected on the second day after injection. The virus has not been found in the urine, fæces, kidney, or intestinal mucous membrane.

Flexner and Clark found the virus to be present in the tonsils and pharyngeal mucosa of a patient who had died during the acute stages of poliomyelitis. They obtained successful experimental results by preparing an emulsion of the tonsil with 0·5 per cent. solution of carbolic acid.

DISTRIBUTION OF THE VIRUS OUTSIDE THE BODY.

So far the only evidence upon this subject is that furnished by Neustaedter and Thro, who examined the dust in rooms in which cases of poliomyelitis had been nursed. After many failures they succeeded in producing poliomyelitis in a monkey with the filtrate of macerated dust in salt solution. They conclude, therefore, that poliomyelitis is propagated by dust, and that the naso-pharynx is probably the point of entry.

Flexner and Clark have shown that flies can harbour the virus in their bodies in a living and infective state for at least 48 hours.

TYPES OF EXPERIMENTAL POLIOMYELITIS.

All the usual types of poliomyelitis as seen in man have been reproduced experimentally in monkeys. There is the ordinary type with flaccid paralysis of one or more limbs, the ascending type, the cranial type, the abortive type. The "jumping" type has also been observed in monkeys, and Roemer gives the history of a monkey paralysed on the twelfth day which showed considerable amelioration at the end of the sixteenth day; but three weeks afterwards it had a relapse and died two days after being ill.

PATHOLOGICAL CHANGES FOUND IN EXPERIMENTAL POLIOMYELITIS.

The changes found in the brain and spinal cord in experimental poliomyelitis do not differ from those found in natural infection. In the spinal cord the lesions are usually more severe and widespread than in the brain. The meninges usually show a more or less diffuse infiltration with round cells. The layers immediately next to the white matter of the cord tend to show more cells than the layers next the dura mater.

The greatest accumulation of cells is about the arteries and veins, the sheaths of which are surrounded by cells. The effect of these cells on the lumina of the smaller vessels is considerable.

The meningeal cellular invasion is only interstitial, and does not give rise to an exudate upon the surface of the cord or brain such as occurs in acute exudative inflammation.

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A NEW OBSTETRICAL AND GYNÆCOLOGICAL SOCIETY.—A meeting will be held at the Grand Hotel, Birmingham, on Tuesday next, Feb. 20th, at 5.30 P.M., to found an Obstetrical and Gynæcological Society embracing the Midland, Eastern, and Western Counties of Great Britain. The meeting will have the following agenda before it: (1) To consider the name of the proposed society; (2) to form rules and by-laws; (3) to arrange time and places of meetings; (4) to elect officers and council for 1912–13; (5) to dispose of such other business as may arise. At 7 P.M., after the meeting, a dinner will take place, the price of which, exclusive of wine, will be 7*s.* 6*d.* An early reply as to intention to be present or desire to join the society should be made to Mr. H. Beckwith Whitehouse, 52, Newhall-street, Birmingham), who is acting as honorary secretary (*pro tem.*) to the movement. A letter has already been circulated, signed by Dr. Edward Malins, Dr. Christopher Martin, Dr. Thomas Wilson, Dr. C. E. Purslow, Mr. Frederick Edge, Mr. J. Furneaux Jordan, Mr. Smallwood Savage, Dr. John T. Hewetson, Dr. Ann E. Clark, Dr. Mary D. Sturge, and Mr. Beckwith Whitehouse, these representative gynæcologists practising in Birmingham believing that the time has arrived for the formation of a new Obstetrical and Gynæcological Society embracing the Midland Counties, and, if sufficient support be obtained, including also the West of England and perhaps the East. To this letter many favourable replies have already been received.

SOME FORMS OF HÆMORRHAGE WHICH ARE DIFFICULT OF EXPLANATION.[1]

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As I have been much interested in certain forms of hæmorrhage, I have taken this subject for consideration. Usually the explanation of the bleeding is easy—for example, an aneurysm ruptures, or tubercular ulceration eats into a vessel and the patient has hæmoptysis, or under the stress of a heightened blood pressure a diseased cerebral vessel gives way. It is not difficult to suggest why bleeding should follow an infarct, nor why when the vessels generally are greatly over-full it should occur in polycythæmia, nor why when they are locally over-full, as those of the portal area may be in cirrhosis, the patient should have hæmatemesis. It is easy to understand why, as the coagulation of the blood is greatly retarded in those who suffer from hæmophilia, minute injuries to vessel walls should lead to serious hæmorrhage.

When an occurrence is common we become so familiar with it that we are inclined to forget that we do not understand it. Rarely do we stop to reflect how extraordinary it is that if one ciliary muscle is paralysed as a result of diphtheria so is the other; if one anterior tibial nerve is inflamed by alcohol so will the other be. In the same way many varieties of hæmorrhage with which we are quite familiar may well cause much thought.

Let us first direct our attention to purpura. Here the bleeding is under our very eyes, and one thing is quite certain—namely, that the red cells cannot come through the walls of the vessels unless there is a solution of the continuity of those walls. No amount of talk about coagulation can explain hæmorrhage; deficient coagulation may explain why bleeding does not stop but not why it began; for it to begin there must be damage to the vessel walls sufficiently great to let blood corpuscles through. Purpura may occur as a result of giving a patient drugs—notably iodide of potassium, chlorate of potassium, and copaiba—by the mouth. It is difficult to resist the belief that these poisons, or derivatives from them, circulating in the blood lead to damage of the walls of the cutaneous vessels and consequent purpura. In the same way poisons or toxins circulating in the blood and causing local damage to minute vessels probably explain why septicæmia and some of the exanthemata are occasionally purpuric, although here it may possibly be that the micro-organisms themselves cause the bleeding either directly or by the formation of infarcts. Purpura is met with in scurvy, cirrhosis of the liver even if there is no jaundice, severe jaundice, and after the administration of serum, and in each instance it is extremely likely that there is some poison circulating in the blood which damages the minute vessels of the skin. Acute rheumatism, a common cause of purpura, is certainly a specific fever, and therefore the purpura may be toxic, as it may be in the exanthemata. Inasmuch as there must be a solution of vessel walls for the production of purpura, and several drugs cause purpura, we may assume that these drugs or their derivatives circulating in the blood act on the minute vessels so as to cause a solution of continuity and consequently hæmorrhage, and as no better explanation is forthcoming for purpuras—e.g., purpura hæmorrhagica and Henoch's purpura, in which there is no direct evidence of a toxin which damages vessels—we may, as here also there must be a solution of continuity of minute vessels, assume, without violent improbability, that in these varieties of purpura there are circulating in the blood toxins which can damage vessels in this way. It has been stated that the seat of the hæmorrhage in purpura is in the minute veins just at the point where they leave the subcutaneous tissue and enter the skin proper; they are especially weak at this point, hence when damaged they give way there.

In all purpura there must be a damage to vessels, and very often this damage extends to the vessels of other regions than the skin. Thus we have hæmorrhages into the gums and muscles in scurvy, gastro-intestinal hæmorrhages in Henoch's purpura, and epistaxis with internal hæmorrhage in many places in purpura hæmorrhagica, and internal hæmorrhages in jaundice. We have indication that some poisons damage some vessels more easily than others—for example, purpura is rare in scurvy, but hæmorrhages into the gums and muscles are common. In most cases of purpura hæmorrhagica bleeding takes place only into the skin; and in cantharides and turpentine poisoning, although the poisons must circulate in the blood to reach the kidneys, yet the damage to the vessels is usually confined to those of the kidney with consequent hæmaturia. When a poison circulating in the blood commonly selects some particular structure on which to act, we must assume that the chemical or physical nature of that structure is different from that of otherwise similar structures in such a way that the poison can produce results on it and not on them. For example, there must be some chemical or physical difference between the anterior tibial and musculo-spiral nerves, or else it could not be that if alcohol is going to cause neuritis it invariably picks out the anterior tibial most easily; on the other hand, if lead is going to cause a neuritis it almost invariably picks out the musculo-spiral before other nerves. In the same way there appear to be differences in the walls of the vessels in different parts, for some poisons circulating in the blood stream damage some vessels, and others damage others.

Having called attention to the fact that hæmorrhages under the skin may occur quite apart from any gross cause, that hæmorrhages inside the body may be associated with hæmorrhages into the skin, and that certain poisons act on particular vessels so as to cause them to rupture, let me now direct your thoughts to some mysterious internal hæmorrhages: by far the most remarkable is menstruation. The fundamental fact is that at stated periods the walls of the vessels of the uterine mucous membrane undergo some change which enables the blood to burst through. What this change is we do not know; some have spoken of it as a degeneration, but considering that the phenomena of menstruation and heat are normal it is doubtful whether degeneration is the right word; but at any rate in a few days the vessel wall undergoes an alteration which leads to a weakening, the blood ruptures into lacunæ in the uterine mucous membrane, and tearing through the epithelium passes into the uterine cavity. We know that the menstrual flow is controlled by a hormone secreted by the ovary, for excision of both ovaries is followed by a cessation of heat or menstruation, and there is considerable evidence that the transplantation of an ovary from another subject into one who has ceased to menstruate as a consequence of the loss of both ovaries will restore heat or menstruation. This function of the ovary is not derived from the corpus luteum, but it is not decided whether it is dependent upon the follicular epithelial cells or the interstitial cells. Formerly it was commonly believed that menstrual flow could take place from other organs than the uterus, and the belief has hardly died out. As recently as 1897 Oser stated that this might occur, and, indeed, it is admitted in a very recent text-book, but I think you will agree with me there is no real evidence in favour of vicarious menstruation, and therefore we must conclude that the substance secreted by the ovary which is carried by the blood to the uterus, where it causes such a change that the blood in the uterine vessels can rupture them, acts on the uterine vessels only, a fact which strongly suggests that the uterine vessels are different from other vessels, and which harmonises with the opinion expressed a few minutes ago that the most satisfactory explanation of some forms of pathological bleeding is to believe that it is caused by the circulation in the blood of toxins which act in particular on the walls of the vessels through which the blood ruptures.

I should now like to direct attention to some facts which support the belief that pathological hæmorrhage due to some substance circulating in the vessels and damaging the walls of the minute vessels may occur inside the body only. Everyone with even a moderate experience of work in the post-mortem room must be familiar with subpleural ecchymoses and those which occur in the alimentary tracts especially the stomach. Among 2246 post-mortem examinations I find them noted in 172, and of these 68 were performed upon those dead of an acute infective disease, such as pneumonia or pyæmia. In some instances these ecchymoses might be caused by obvious emboli, backward pressure, high blood pressure, or arterio-sclerosis, but a very large number remain in which no such explanation holds, and it is quite possible that some toxin damages minute vessels, but it may be that micro-organisms acting locally

[1] Abstract of an address given at the annual meeting of the past and present students of the University of Durham College o Medicine, held at Newcastle-on-Tyne on Feb. 6th, 1912.

are the cause. Let us next consider the condition to which the term gastrostaxis has been applied. Many authors have been struck with the frequency with which young women vomit blood—for example, Dr. E. W. Goodall found that out of 36 cases of hæmatemesis under 30 years old 27 were women and 9 were men. Formerly, this was ascribed to vicarious menstruation; when this explanation was discarded these bleedings were considered to be due to gastric ulcer, and accordingly we were taught that gastric ulcer was far commoner in women than in men, and it was especially seen in young women. But suspicion as to the correctness of this view was aroused by the facts that in men gastric ulcer was commoner at a considerably older age, and gastric ulcers found in the post-mortem room were no commoner in women than in men. Then several cases were operated on for hæmatemesis and no ulcer was found, and cases were published in which a careful search after death had failed to demonstrate the presence of any ulcer. When such a case was examined during life the blood was seen by several surgeons to be oozing from many minute points usually grouped together.

That there is a disease far commoner in young women than in older women or men characterised by dyspepsia, pain, vomiting, and hæmatemesis is allowed by most recent authors who have written on the subject. I have published many such cases.[2] Since I did so others have come to my notice. Dr. A. E. Boycott has given me particulars of a woman, aged 35, who had indigestion with severe hæmatemesis in 1905, and in 1906 when it was nearly fatal the stomach was opened, and all that was seen wrong was a large area of congested bleeding mucous membrane. Mr. J. S. Watson tells me of a woman, aged 25, who for many months suffered from pain in the stomach, nausea, vomiting, and hæmatemesis. She was thought to have a gastric ulcer, but on opening the stomach at an operation no trace of an ulcer or cicatrix could be found. Hæmatemesis and melæna have continued since the operation. A woman, aged 44, had been in Guy's Hospital on many occasions for pain, nausea, vomiting, and hæmatemesis; she died outside. The late Mr. W. F. Hearnden sent me the stomach. I could find no trace of any ulcer or cicatrix. A man, aged 36, seen with Mr. A. H. Card. Hæmatemesis and melæna were so severe that we thought he had a duodenal ulcer. At an operation Mr. Arbuthnot Lane examined the stomach and duodenum most carefully, but no sign of an ulcer could be seen. This condition has been called gastrostaxis and the explanation of it that has always appealed to me has been that the disease consisted in a giving way of the walls of minute vessels, that blood first effused under the gastric epithelium broke through this and hence the bleeding. If this view is correct we must suppose the weakening of the blood-vessels to be due to an endothelial toxin and then these cases are allied to the conditions previously mentioned in this paper, in some of which, e.g., purpura hæmorrhagica, hæmatemesis is by no means uncommon; we should then have purpura hæmorrhagica a disease in which an endothelial toxin acted on the vessels in several situations, and gastrostaxis a disease in which an endothelial toxin acted only on the vessels of the stomach and occasionally on those of the intestine, for sometimes the bleeding occurs also in the intestine. Thus Dr. A. G. Gullan[3] reports the case of a girl who had all the symptoms of gastric ulcer, including hæmorrhage; she died suddenly. The stomach showed numerous small hæmorrhagic erosions scattered over its surface, which was congested in certain places; similar erosions were found in the duodenum and jejunum and there were subperitoneal hæmorrhages. Dr. W. P. Herringham also records cases in which the bleeding occurred from the duodenum as well as the stomach, and I have recorded some.[4] As the blood bursts through the gastric epithelium there must be minute erosions, and Dr. C. Bolton, while he agrees that there is a condition most often seen in young women and characterised by dyspepsia, pain, vomiting, and hæmatemesis, inclines to the belief that some or all instances of gastrostaxis are really instances of minute gastric ulcers. The matter is not easy to decide, for the difference between minute ulcers and minute erosions is difficult to make out without the most careful microscopical examination; and the opportunities of this are few, for surgeons have rightly largely given up opening the stomach for gastric hæmorrhage, and the condition we are describing is rarely fatal; but at any rate it must be admitted that an endothelial toxin is quite a likely explanation for these cases, and it would perhaps best explain the cases in which the oozing of blood occurred in other parts of the alimentary tract than the stomach. Further, the possibility that a toxin causes the hæmatemesis is supported by Dr. J. J. Pringle's[5] and other cases of urticaria accompanied by hæmatemesis, for urticaria is often toxic.

Many a time it has happened that a physician or surgeon has, on account of hæmaturia, thought that a stone or new growth existed in the kidney, but a most careful exploration, or in some cases excision, of the kidney has failed to find any satisfactory explanation for the hæmaturia. These are examples of what has been called renal epistaxis, or, to use a phrase more widely employed, essential renal hæmaturia. There are so many causes for hæmaturia that scepticism as to the existence of essential renal hæmaturia is justifiable, but there is no doubt that it exists. I have recently collected several cases.[6] Senator says: "There still remains a group of cases in which nothing can be found in the kidneys to account for the hæmorrhage." Herrick gives the case of a man aged 45, who had had hæmaturia for ten months. The cystoscope showed that the blood came from the right kidney; nephrotomy revealed nothing abnormal. The kidney was healthy histologically. Klemperer describes the case of a young man aged 22, who had hæmaturia which proceeded as shown by the cystoscope from the left kidney. Nephrectomy was done and the kidney was perfectly healthy both to the naked eye and microscopically. Wulff and Schenk describe similar cases, the bleeding coming from only one kidney, which both to the naked eye and histologically was normal. I could quote other cases from medical literature; they will be found in the article on essential hæmaturia to which I have referred. I have carefully read the whole of the literature to which I have access in London, and I think there is no doubt that bleeding may take place from the kidney without there being any evidence to the naked eye or microscope that the organ is diseased. For example, a woman, aged 35, was admitted under Mr. C. J. Symonds for profuse hæmaturia; it appeared that the blood came from the right kidney. This was excised; it was healthy both to the naked eye and histologically. I wrote to the patient 27 months after the operation, and she said that her health and weight had improved greatly; she had had during this time one attack of hæmaturia presumably from the other kidney. This condition occurs both in women and men, but more often in men. The patients are usually under 30; it is very rarely fatal. I submit that the most feasible explanation of these cases is that in them a poison—analagous to the menstrual hormone—is formed somewhere at intervals, and this reaching the kidney by the blood, and having a special affinity for the minute renal vessels so damages them that they rupture and the blood escapes; if this is so these cases have the same explanation as those of bleeding from other parts of the body which we have been considering.

It is well known that hæmatemesis is an early symptom of splenic anæmia and that it occurs long before the final stage of hepatic cirrhosis. May it not be that here we have absorbed from the spleen and carried to the stomach by the blood, a toxin having the property of damaging the gastric vessels and so letting blood through and causing hæmatemesis?

I have left till last the mention of epistaxis, for I have very little experience of it unless as a complication of well-known disease, but there is a very widespread belief that it is especially common in boys at the age of puberty who are perfectly healthy. If this is so, it seems difficult to resist the explanation that the epistaxis is due to the circulation in the blood of an unknown substance which has the special property of damaging the vessels of the nasal septum so as to cause hæmorrhage from them.

I hope you will not consider this address too fanciful, but with the strong evidence we have that the menstrual flow is provoked by a hormone secreted by the ovary, it seems to me worth while to consider whether any pathological hæmorrhages might not be produced in a similar way, and I think it possible that they may, being caused by endothelial toxins which act on the walls of the vessels from which the bleeding comes.

Wimpole-street, W.

[2] Gastrostaxis, THE LANCET, Nov. 3rd, 1906, p. 1189.
[3] The General Practitioner, Dec. 8th, 1906.
[4] St. Bartholomew's Hospital Reports, vol. xliv.
[5] Transactions of the Clinical Society of London, vol. xviii., p. 143.
[6] Essential Renal Hæmaturia, Quarterly Journal of Medicine, vol. iv. No. 16.

MALIGNANT DISEASE OF THE TESTICLE AND THE TREATMENT OF IT BY RADICAL OPERATION.

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TUMOURS of the testicle, owing to their peculiar and complex pathological characteristics, have been much described and frequently and variously classified. Yet our knowledge of the morbid anatomy of malignant disease of this organ increased very slowly until Nicholson in his admirable paper, "New Growths of the Testicle,"[1] described the macroscopic and microscopic appearances of 63 specimens from the Guy's Hospital Museum and gave a lucid and comprehensible grouping of the various tumours.

It may here be said that "tumours" is used as synonymous with malignant disease, since with the rare exception of fibroma and adenoma, the existence of which is not universally recognised, all neoplasms of the testicle are malignant in a greater or less degree. The following classification of tumours is based mainly on the work of Nicholson:—

Embryoma	... ...	Solid. Cystic (dermoids).
Carcinoma	... ...	Encephaloid (Alveolar. / Non-alveolar.) Scirrhus.
Sarcoma	... ...	Round celled (lympho-sarcoma).
Endothelioma	...	Lymph-endothelioma. Hæm-endothelioma.

Apart from the endothelioma each of the three types is claimed by different authors as the commonest form of neoplasm of the testicle.

Embryomata are composite tumours containing elements derived from epiblast, mesoblast, and hypoblast, and are developed in the body of the testicle, probably in the region of the rete testis, and not in the epididymis, although this part of the organ may be included later by the growth. The origin of these tumours is not absolutely determined, but Nicholson says: "There can be no doubt that these tumours which contain derivatives of the three blastodermic layers must have originated in a cell which is analogous to an ovum (including a spermatozoon) or one of its earliest divisions—i.e., a cell which is still capable of producing the three primary layers of the embryo" (p. 308). At first benign, any or all of the component parts may undergo malignant change. When two or more layers are so affected a mixed tumour is the result; when hypoblast alone, the tumour assumes the characters of a columnar-celled carcinoma; when mesoblast alone, of a sarcoma or myxo-sarcoma; when epiblast alone, of a dermoid or of a growth closely resembling a chorion-epithelioma.

Nicholson further emphasises the fact that "not only may one layer be greatly in excess of the others, but one tissue may assume this supremacy" (p. 304). One case which he quotes in illustration "consists almost entirely of striped muscle." He continues: "To distinguish these tumours from dermoids, they are called solid embryomata, whereas dermoids are known as cystic embryomata" (p. 304). Nicholson further points out that "the chief point which distinguishes these 'cystic' from the 'solid' embryomata is the comparatively high degree of development which their structures have obtained" (p. 304).

When two only of the three layers are found in a mixed tumour the missing layer is generally the epiblast, the reason of which may be aborted development or incomplete examination. In a few cases, however, the epiblast is represented not only by areas of stratified epithelium and cell nests, but also by elements of a chorion-epitheliomatous nature. It is now generally held that the presence of syncytium and of Langhans's cells does not imply the inclusion of fœtal membranes, and that they are developed from the epitheliomatous cells of the epiblast.[1,2]

The solid embryomata may in macroscopic section appear as solid tumours, as solid tumours containing cystic spaces, or the whole body of the tumour may be converted into cysts of varying size separated by strands of fibrous tissue. In all cases the tumour is surrounded by the tunica albuginea, usually thickened, and the epididymis is to be found on the posterior aspect unaffected, compressed by the growth or occasionally incorporated into the tumour. These embryomata are classed by Bland-Sutton under the name of cystic disease of the testicle.[3]

The cystic embryomata or dermoids are very rare and differ from the preceding in that they show a highly differentiated structure; they are composed of a thick-walled cyst containing embryonic rudiments, teeth, hair, sebaceous matter, portions of the nervous system, &c. Barrington has described what is probably a unique case of a dermoid cyst associated with a new growth, and suggests that "the tumour has arisen in a teratoma from some hypoblastic structure."[4]

Foulerton[5] regards columnar carcinoma as the commonest form of malignant disease of the testicle, but Nicholson is of opinion that all the cases of columnar carcinoma are in reality teratomata, and recognises only encephaloid carcinoma which he subdivides into the alveolar and non-alveolar forms, and scirrhus carcinoma, which latter is very rare.

Sarcomata develop from the intercanalicular connective tissue, and are regarded by Aschoff[6] as the commonest variety of testicular neoplasm. They are mostly of the round-celled type known as lympho-sarcoma. Ewing states that "the disease is distinguished in the majority of cases by the involvement of both testicles, by its rapid course, by the development of multiple metastases, specially in the skin, and by its histological structure which resembles a lympho-sarcoma."[7] Sarcomata are very liable to degenerate and to increase suddenly in size as the result of hæmorrhages into the degenerated areas.

Endotheliomata do not present characteristics which differ materially from such tumours developing in other organs.

Diagnosis.

A patient with malignant disease of the testicle may present himself with all or most of the symptoms and signs distinctive of a growth of that organ, but it is by no means a rare occurrence that the clinical manifestations are so uncharacteristic that the nature of the disease, or even the seat of the primary lesion, is not recognised. It is therefore necessary to describe: A. The clinical picture characteristic of a growth of the testicle. B. Certain aberrant types in which the difficulties in diagnosis are due to: (1) the nature of the history; (2) the presence of a hydrocele; (3) the degeneration of the growth; (4) the patient seeking advice on account of symptoms produced by the secondary growths.

A. *The Clinical Picture Characteristic of a Growth of the Testicle.*

The patient seeks advice on account of a swelling which he has noticed for some months. Pain is rarely a prominent feature. There is a previous history of venereal disease in the majority of the cases and sometimes of trauma.

Physical Signs of the Tumour.

Position.—Russell Howard[8] found that 15·7 per cent. out of 57 cases of undescended testicle had malignant disease of that organ. The testicle has been more often affected when imperfectly descended than when retained in the abdomen. On the other hand, no case of malignant disease of a testicle misplaced in the perineum has been recorded. In a normally placed testicle the tumour is entirely scrotal, or fills the scrotum and reaches up to the external abdominal ring.

Size, shape, outline, surface.—The size varies from that of a hen's egg to that of a cocoanut. The characteristic shape is oval, but there may be one or more rounded bosses projecting from the surface due to the presence of degeneration in the tumour or of fluid in the tunica vaginalis. The outline is well defined, smooth, and rounded. Posteriorly the epididymis may be felt firmly attached to the growth but not involved by it; with increase in size of the tumour the epididymis becomes increasingly compressed and incorporated in the growth. In the later stages when the growth has spread through the tunica albuginea the surface of the tumour becomes irregular and the outline of this part less well defined. The surface of the growth, even when completely enclosed in the tunica albuginea, is always slightly lobulated.

Consistence.—The tumour, apart from any associated hydrocele, may give the feel of a hard or soft solid, or of an elastic or fluctuating mass. Not infrequently the consistence of the tumour varies in different parts. This is specially the case when the growth is degenerating.

Translucency.—An associated hydrocele will be translucent, but the growth is opaque. This examination is useful when there is difficulty in determining how much of a swelling is due to an overlying collection of fluid in the tunica vaginalis.

Sensibility.—Pain is rarely a predominant feature unless the scrotum is implicated. There is a surprising absence even of tenderness. Testicular sensation may occasionally be obtained from the posterior part of the swelling.

Attachments.—Except when the growth has ulcerated through the tunica albuginea the tumour is freely moveable.

Weight.—Much importance is laid in text-books on the weight of a testicular tumour; "as heavy as a stone," &c. Any dependent swelling feels heavy and a tumour weighs more than an equal bulk of water, but not necessarily more than any other solid enlargement of the testicle, and too much reliance should not be placed on this sign as of diagnostic value.

Cord.—The vas is rarely affected, but an irregular lobulated thickening due to extension of the growth may sometimes be felt occupying the lower part of the cord. The vessels of the cord may be enlarged or increased in number, and this can be recognised clinically by a uniform increase in the size of the cord and occasionally by an exaggeration of the pulse in the artery of the vas on the affected side.

Scrotum.—This shows no abnormal change except in very advanced cases when the growth has become adherent to the skin.

Rectal examination.—No change, the result of the neoplasm, is to be detected by palpation of the lower end of the vas and the vesiculæ seminales.

Glands and secondary deposits.—The lymphatics of the testicle run to the lumbar glands round the aorta and vena cava, and it is therefore the upper part of the abdomen that must be particularly examined for evidences of glandular involvement. In the later stages glands in the posterior triangles of the neck or in the inguinal region may become implicated. The inguinal glands are not affected primarily except when the scrotal tissues are invaded by the growth. In cases of sarcoma the metastases are probably disseminated by the blood stream; deposits may therefore be found in any part of the body.

B. *Aberrant Types.*

1. *The nature of the history.*—An embryoma may not develop malignant characteristics for many years. The length of the history, dating it may be even from early childhood, must not be regarded as a point against malignant disease; indeed, if there has been any increase in the size of the swelling other than that due to hydrocele, or if the tumour has become painful, the length of the history should directly suggest that the testicle is the seat of an embryoma. When there is a history that the increase in size was first noticed after an injury, and specially when the swelling has been subsequently tapped and clear or blood-stained fluid withdrawn, the condition may be mistaken for a hæmatoma.

2. *The presence of a hydrocele.*—Hydrocele complicates growth in the great majority of cases. The hydrocele may exist at one pole of the tumour only. There may be a collection at either pole united by an isthmus, or the tunica vaginalis contains a small quantity of fluid evenly distributed. None of these cases should present any difficulty as the result of the fluid; but when the tumour is comparatively small and the hydrocele sufficiently large to envelop the testicle the increase in size of the latter may be very difficult to detect.

3. *The degeneration of the tumour.*—Degeneration of the growth when slight causes one or more areas of softening in the tumour, but when a large part of the growth has broken down that part acquires the characters of an opaque elastic cyst. It occasionally happens that the whole anterior part of the tumour is thus affected, while the posterior part retains its former irregular outline. The appearance produced then closely resembles that seen in advanced tuberculous disease of the testicle, with the hard, irregular epididymis lying behind, and the body, enlarged by extension of the disease, in front. In such cases the real nature of the condition may not be suspected until the operation. Syphilis produces a lobulated tumour with areas of softening, but the lobulation is in these cases much more pronounced and the softening due to the breaking-down gumma is more precisely confined to one or more lobule. The softened areas of a degenerated growth do not become adherent to the overlying parts; a breaking-down gumma does.

4. *The patient seeking advice on account of symptoms produced by secondary growths.*—In certain cases the symptoms complained of are those due to the enlargement of the lumbar glands which, pressing on the aorta and vena cava, their branches and tributaries, or on the organs which lie in contact with the affected glands, specially the duodenum and stomach, give rise to a train of symptoms quite unsuggestive of any lesion of the testicle. The patient may not call attention to the primary growth for one of two reasons: either the testicle and tumour have been removed some time previously and the possibility of any association between the present and past illness does not occur to the man, or the enlargement of the testicle, being painless and of long standing, does not cause sufficient disturbance to impress the patient with the necessity of directing attention to the condition. In all cases, therefore, where abdominal symptoms are associated with a tumour of an obscure nature the possibility of a neoplasm of the testicle must be kept in mind.

Prognosis.

Malignant growth of the testicle is a most fatal disease. A tumour known to have been present for many years may at any moment assume a malignant character and cause death in a comparatively short space of time. Chevassu[9] has collected the statistics of 100 cases treated by castration; of these, 81 died and 19 were cured. His figures are as follows:—

Died, 81.		*Cured, 19.*	
Within 1 year	38	Alive 4 to 5 years after ...	4
,, 2 years	17	,, 5 ,, 6 ,, ,, ...	4
,, 3 ,, ...	9	,, 6 ,, 7 ,, ,, ...	5
,, 4 ,, ...	2	,, 7 ,, 8 ,, ,, ...	1
Date uncertain	15	,, 8 ,, 9 ,, ,, ...	3
		,, 9 ,, 10 ,, ,, ...	2

Early diagnosis and the removal of the testicle with the lymphatics and surrounding fascia and the glands in the lumbar region offer the only hope of decreasing so appalling a mortality.

Treatment.

Very slowly has it dawned upon surgeons that malignant growths of the testicle should be treated in the same rational manner as malignant disease of the tongue or breast—so slowly, in fact, that since Grégoire[10] did the first complete radical operation in 1905 only 12 cases treated in this manner have been recorded. At the present time every surgeon recognises the imperative necessity of removing the glands and lymphatics (with the surrounding fascia) which drain an area, such as the tongue or breast, the seat of a malignant growth; and the enucleation of the infected glands in such cases is regarded in almost the same light as attempting no gland operation whatever "because there is no clinical evidence of involvement." There is no reason why the same radical treatment should not be adopted in cases of malignant disease of the testicle; that the glands are at a distance from the primary growth and need a much greater amount of care and trouble to remove is no contra-indication whatsoever. It is quite feasible (and the danger of the operation is incomparably small compared with that of recurrence when the testicle only is removed) to take away the testicle, cord, the artery and veins of the vas up to their origin from the aorta and entry into the vena cava or renal vein, the lymphatics draining the testicle, the glands into which they drain, and the surrounding fascia in one piece. The heavy mortality from recurrence in cases of simple castration, the proportionate frequency with which glands that could not be felt clinically and apparently normal macroscopically have been found on microscopic examination to be invaded by growth, should be sufficient to make the radical operation the routine procedure,

Before giving details of the operation a fuller understanding of the lymphatics of the testicle is necessary. Numerous experiments have been made by the injection of coloured fluids and dissections by Jamieson and Dobson,[11] Most,[12] and Cunéo.[13] These researches have shown that the glands which are in direct communication with the testicle lie on either side, over, and between the inferior vena cava and the aorta usually between the level of the bifurcation of the aorta below and the renal veins above, but that occasionally

a gland may be found as low as the bifurcation of the common iliac, and as high as just above the renal veins. From this group of glands lymphatics pass out laterally, upwards and downwards to other glands, the uppermost of which are in close relation to the receptaculum chyli. From clinical evidence (and the ease with which injected substances pass through the primary into the secondary group of glands) it seems that the secondary outlying groups may be infected soon after the primary ones have become diseased. Certain it is that when once the glands have become palpable dissemination of the disease progresses rapidly.

The secondary glands lie so high up in the abdomen and are so covered by the duodenum, pancreas, &c., that they are very difficult of access. So long as the diagnosis of growth of the testicle is made fairly early, and the radical operation is undertaken before the primary group of glands is extensively implicated, it is sufficient if these only are removed. The lymphatics of the primary group connected with the right testicle lie to the outer side and over the vena cava, between it and the aorta, and over the right half of the aorta, while those connected with the left testicle have no relation to the vena cava but lie over and on the left side of the aorta. The glands have been removed by the intraperitoneal and the extraperitoneal routes; the latter is undoubtedly preferable.

The Radical Operation.

The incision which has been most often employed to allow of removal of the testicle and cord and to give access to the lumbar glands commences over the upper part of the scrotum, extends up to the external ring, along the inguinal canal, and is prolonged to a point half an inch above the anterior superior spine; the incision then curves upwards till it reaches the costal margin at the level of the tenth rib. At the beginning only the first part of the incision to the external ring is made and the testicle and cord are dissected free. If there is any doubt as to the diagnosis the testicle should be incised at this stage. If malignant disease is present the operation is continued. The incision is prolonged in the direction defined above and carried through the muscles of the abdominal wall until the peritoneum is reached. The cord is traced till it passes through the internal abdominal ring, and then while the sides of the incision are strongly retracted slight tension is applied to the cord so that its further course may be easily recognised. In its retroperitoneal course the vas is adherent to the posterior aspect of the peritoneum and the next stage in the operation consists in freeing the cord and reflecting the peritoneum mesially. The cord is traced down well into the true pelvis and there divided between two ligatures, the cut surfaces being treated with the cautery or pure carbolic. This may be regarded as the first stage in the operation and requires no extraordinary care. The second stage consists in the free dissection of the fascia over part of the iliacus and psoas muscles together with the contained spermatic vessels and lymphatics and the removal of the glands from off the inferior vena cava and aorta.

When the vas has been divided the spermatic vessels are seen no longer to form a rounded bundle but to become spread out. It is therefore necessary to make a wide dissection of the fascia. On the outer side this should extend to the outer border of the psoas. On the inner side the line of division of the fascia should pass mesially so as to cross the common iliac at its bifurcation; the ureter will here be encountered and must be freely exposed. The dissection is then carried along the inner side of the common iliac vessels up to the bifurcation of the aorta. When the left testicle is affected the inner boundary is carried up along the right border of the aorta, and special care must be taken not to injure the inferior mesenteric artery. When the right testicle is the seat of the tumour the inner border is continued over the middle of the aorta. In both cases the upper limit is the upper border of the renal veins. Between these boundaries all fascia, lymphatics, and glands must be removed. During the dissection the spermatic vessels are traced up to their junction with the main vessels and must be ligatured and divided. When all bleeding points have been secured the peritoneum is allowed to return into position, and the abdominal wound is closed without drainage, each of the muscles being stitched up separately.

Up to the present published results show that the radical operation for the complete removal of the testicle, glands, and lymphatics, with adjacent fascia, in one mass has been done 12 times.*

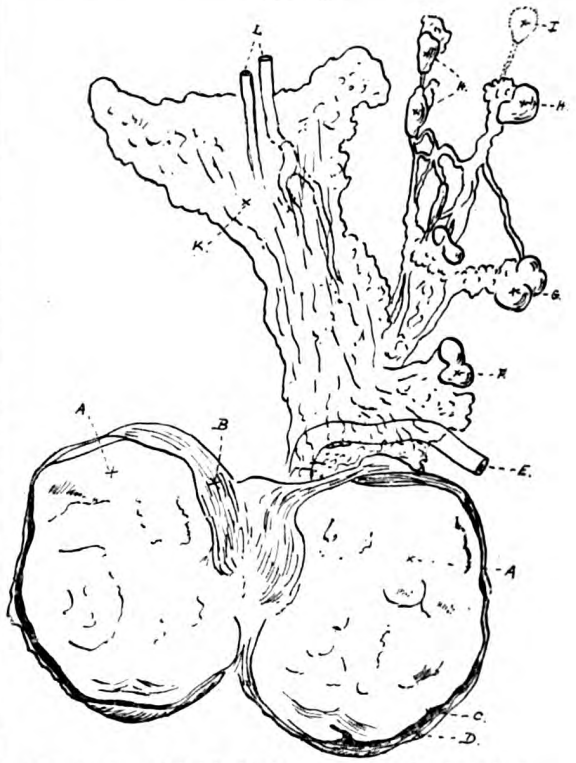
Grégoire[10]	3 cases	in 1905, 1907, 1908.
Cunéo[16]	1 case	,, 1906.
Chevassu[17]	2 cases	,, 1909.
Gosset[9]	1 case	,, ,,
Pierre Fredet[9]	1	,, ,, ,,
Delbet[18]	1	,, ,, 1910.
Michon[19]	1	,, ,, ,,
Panchet[20]	1	,, ,, ,,
R. Howard[21]	1	,, ,, ,,

The present case which I have to record is, therefore, the thirteenth in the series.

Notes of Case of Radical Operation.

The patient was a boy, aged 17. The left testicle was fully descended and quite normal. The right testicle had never entered the scrotum, but was situated outside the external abdominal ring. He sought advice because of the swelling of the right testicle which had been noticed for four months. There was no pain, and the chief trouble was the discomfort of the lump in the lower part of the abdomen. There was

FIG. 1.



Reproduction of sketch showing parts removed; the testicle has been cut open longitudinally. A, Body of testicle, almost completely replaced by growth. B, Epididymis. C, Tunica albuginea. D, Tunica vaginalis. E, Vas deferens. F, Gland, level of bifurcation of common iliac. G, Gland, level of bifurcation of aorta. H, Glands, situated over the inferior vena cava and right side of the aorta. I, Gland, level of renal vein and removed separately (Fig. 3 is from sections cut from this gland). K, Fascia over the psoas. L, Spermatic vessels.

a lump in the groin 3 inches long by 2 inches broad, which was evidently a swelling associated with the testicle, as the cord could be felt passing up from the swelling into the inguinal canal, and testicular pain was elicited by pressure on the deep aspect of the mass. The outlines were well defined and smooth and the surface slightly lobulated. The swelling was firm and yet gave a distinct sensation of fluctuation, but the deeper part was hard and inelastic The whole tumour was opaque to transmitted light. It was not

* I am not including in this group Roberts's case (14), in which the glands were removed 14 months after the testicle on account of recurrence of the growth; nor Bland-Sutton's case (15), in which he shelled out an enlarged gland but did not deal with the intervening tissue nor do a complete dissection of the lymphatics.

fixed to the skin or deeper structures. The cord was normal; there was no increase in size nor pulsation. No palpable glands; no evidence of secondary deposits.

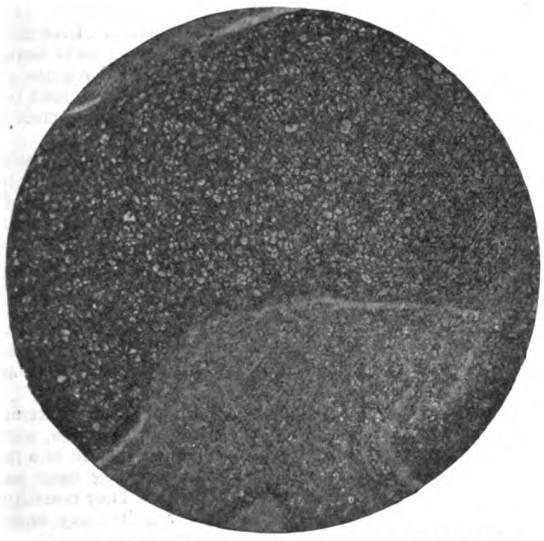
On April 5th, 1911, I did the radical operation as already described. Having made an incision over the swelling and freed the testicle, I incised it to confirm the diagnosis of tumour. The incision was then prolonged up to the costal margin through the muscles of the abdominal wall and the peritoneum reflected. A hernial sac was found running along with the cord, and this was cut off and the base ligatured in the usual way. The vas was traced into the pelvis, ligatured, and divided. The fascia over the psoas, including the lymphatics and glands lying in relation to the vena cava, and the right part of the aorta from just below the bifurcation of the common iliac to just below the renal vein, was dissected up. The testicle and tumour, lymphatics, glands, and fascia were then all removed in one piece. (Fig. 1.) When this had been done another gland previously overlooked was seen lying on the vena cava at the level of the renal vein; this was removed separately. The abdominal wall was stitched up in layers without drainage. Union by first intention. The patient returned home three weeks after the operation.

Examination of Tumour.

The tumour was hardened and then incised. The tunica vaginalis contained practically no fluid. The whole of the body of the testicle is invaded by solid growth; the tunica albuginea is somewhat thickened, but is everywhere intact and encloses the tumour. The epididymis lies slightly compressed on the posterior aspect of the growth. The cord is not invaded but is larger than normal, due to some increase in the vessels. The cut surface is reddish-brown in colour with patches of yellow-grey (commencing degeneration) in the centre.

Microscopically the tumour is a solid embryoma. The mesoblast is represented by cartilage (Fig. 2), and sarco-

FIG. 2.



Micro-photograph of mesoblastic elements (cartilage) in tumour. × 100.

matous and myxomatous tissues; the hypoblast by cysts lined by columnar epithelium. Some of the cysts show considerable infolding of the epithelial lining. No trace of epiblastic elements (except one very doubtful cell nest) can be seen, although sections were taken right across the tumour.

Section of the highest gland, which is 1 cm. in diameter by 0·5 cm. thick, shows well-developed cystic spaces with marked infolding of the basement membrane and is lined by columnar epithelium and goblet cells. (Fig. 3.) A small patch of myxo-sarcomatous tissue is also present.

Summary.

In conclusion, I wish to emphasise the following points:—

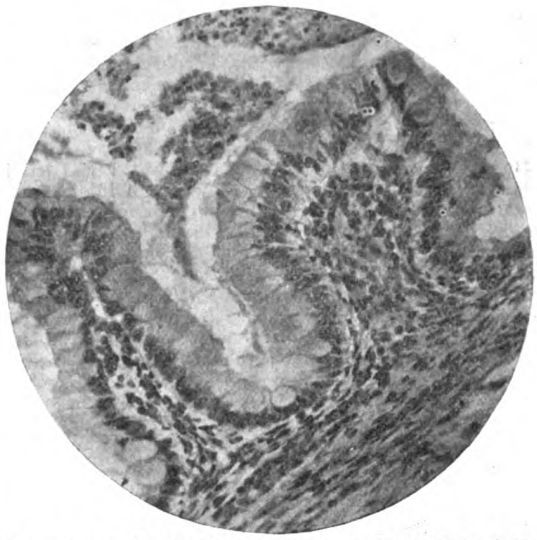
1. All tumours of the testicle must be regarded as malignant.

2. The history of previous venereal disease, the association of the swelling of the testicle with an injury, the length of the history dating perhaps from childhood, must not be allowed to outweigh clinical evidence.

3. Always suspect a tumour of the testicle when there is an oval swelling which is not translucent and comparatively painless.

4. When the tumour is in addition soft or elastic, and the surface shows slight lobulations, regard the suspicions as confirmed.

FIG. 3.



Micro-photograph of portion of cyst in secondary deposit in gland, showing columnar epithelium and goblet cells. × 400.

5. Increased pulsation of the cord is in favour of tumour, but is not pathognomonic.

6. A solid tumour may be so elastic as to give the feel of a fluid swelling.

7. The aberrant clinical manifestations of a testicular neoplasm must be constantly borne in mind.

8. If the diagnosis is uncertain and the possibility of growth is entertained the tumour must be explored. Should the tumour be syphilitic, no harm will have been done; if tubercular or a hæmatoma, operation is the correct treatment.

9. When the diagnosis of tumour is confirmed the complete radical operation, consisting of removal of testicle, cord, lymphatics, and surrounding fascia, and of the lymphatic glands in the region of the aorta and vena cava, must be done, unless the lumbar glands are extensively involved, or there are evidences of metastases elsewhere.

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Harley-street, W.

PARTIAL THYROIDECTOMY UNDER LOCAL ANÆSTHESIA, WITH SPECIAL REFERENCE TO EXOPHTHALMIC GOITRE.[1]

BY T. P. DUNHILL, M.D. MELB.

ALL that I shall speak about in this paper is the result of my own experience. The conclusions are such as I have been driven to. I shall not dogmatise if I can help it, because there is much room for legitimate difference of opinion on every aspect of the subject. When I began this work, partial thyroidectomy for exophthalmic goitre was regarded as being at least fairly dangerous, and the operation was not a frequent one. The number of cases which have now been operated upon enables one to speak with more knowledge, but we are still far from finality.

By way of introduction, I might say that I was led into this work in the following way. Through interest in the disease, and reading the medical literature, I had been removing the thyroid glands from milch goats, and feeding the patients on the milk. Thus I had quite a number of patients under me in the out-patient department of the hospital. One day there came a patient who was exceedingly ill, who had no living relations, and who begged for any treatment which would relieve her. After a little time I decided to operate, and placed the whole position before her. She wished for operation. I asked my senior surgeon (Mr. Murray Morton) for a bed. After the operation other patients who had seen her in the out-patient room asked to see her in the ward. Then another asked to be operated upon. Ultimately all were operated upon. Since that time I do not think I have had to persuade a patient to undergo operation. The first-mentioned patient is now doing her work as cook.

I shall not speak of etiology. It seems to me that the chief interest will centre round such questions as, Is surgical interference justifiable? If so, at what stage of the disease is it indicated, and to what extent is interference desirable? Then comes the question of the absolute or relative safety of the patient, and what modifications of technique help to assure this. Finally, and most important of all—in what condition do we leave the patient.

I have written[2] that, judged from the point of view of response to operative treatment, cases fall into four classes:—

I. *The classical type.*—There are present goitre, tachycardia and palpitation, tremor, staring eyes, with or without exophthalmos. There may or may not be complete amenorrhœa, emaciation, alopecia, and other less constant symptoms. But we can detect little or no organic degeneration. The heart has not "broken down," if we may use that term to indicate either definite œdema of dependent parts or irregularity of pulse. It is arguable whether operation should be performed in this class or not. There is the possibility of complete return to health by medical treatment or rest, or with no treatment at all. Also there is the possibility that, in spite of all medical treatment, the disease may progress, to end either in death or in such organic degeneration that return to health is an impossibility. We will discuss that later.

II.—In this class I place those cases in which the disease has progressed until there has been organic degeneration; and among them there have been some complete wrecks—irregular heart, œdema, enlarged liver. The existence of this class at all (and it is a comparatively large one) is some answer to the query as to whether cases in the first class should be operated upon, and it is certainly some answer to the statement still made sometimes that all patients ultimately get well if they live long enough. It has been stated that cases in this class are too far advanced for operation, I think for two reasons: (1) that they are too ill to stand the operation; and (2) because degeneration of organs has advanced to such a stage that improvement is impossible. We will discuss that also later.

III.—In this class I place the cases in which the thyroid gland is quite small, in which it can sometimes scarcely be detected; and yet, associated with that small gland, there may be an extreme degree of one or more of the characteristic signs. There may be absence of tremor or of exophthalmos, though either or both may be excessive. There may be smothering sensations or flushings. In spite of a rapidly beating heart the patient is usually over-fat, if one may use the term.

IV.—In this class I place the cases in which there are some thyrotoxic symptoms, associated with a goitre which is not truly exophthalmic in type. I do not mean by this cases of simple parenchymatous goitre which have been in existence for some years, and have then become exophthalmic in type. Those are among the worst of cases. But there are some cases of adenoma of the thyroid in which the position of the adenoma behind the sternum or clavicle, or the adenoma, apart from any question of position or size, seems to irritate the surrounding gland tissue and cause some tremor, some staring of the eyes, and make the heart more easily excited.

To speak of the considerations which influence one in deciding whether to operate in each class one has to take into account the position in life of the patient and the severity of the case in relation to the progress made under medical treatment. If a patient has means and leisure, and the symptoms are not progressing, and one feels that there is no danger of the heart condition passing from mere irritability into organic change, then medical treatment could safely be persisted with for an indefinite time. Against this one has found that again and again a patient has moved on from one practitioner to another, or has stayed away from her own practitioner, and ultimately comes back, with œdema of the feet. I will instance one or two cases.

I recently operated upon a patient who had seen a practitioner in one of our larger provincial towns two years ago. She took his medicine for three months, then went to a Chinese herbalist. She took the drugs of the Chinese herbalist for one year and nine months; she then saw a medical man who sent her to me. This patient's sister had died in a hospital from goitre years before. I think of another case, where a woman had been going along fairly well and seeing me at moderately long intervals. One morning she came with a heart enlarged, the apex well beyond the nipple-line, and an irregular pulse. Some nights previously she had gone to a dance; that, I presume, had been the culminating cause, though it is more probable that the trouble had been progressive before the dance.

I myself refuse to operate until I know that the patient has had three months' efficient medical treatment, unless there are present other circumstances influencing the case, and one is guided by all the circumstances. One man I kept under medical treatment for nearly 12 months, but he could never work with efficiency, always the thumping heart with the least exertion, and often without. At the end of the time I removed one lobe. Response to operative treatment in this class is very prompt, and the cure is complete if organic heart disease is not present, and if sufficient gland is removed. With local anæsthesia and expert operating the danger is *nil*.

In the second class one gets every stage of wreck—extreme emaciation, œdema, sometimes only in feet and legs, sometimes up the whole body, sometimes in the face if the face be low, as during sleep. Pulse irregular; apex beat anywhere between the nipple-line and the axilla. They constitute a class which most men who operate for goitre say should not be touched for two reasons: (1) because operation is too dangerous, and (2) because organic disease has so far advanced that improvement cannot follow. Out of 380 thyroid operations altogether I have performed 19 on cases in this class, and I say that operation is not too dangerous, and that very great improvement follows. One patient was lying on a bed utterly prostrated. She was œdematous; the stethoscope dented the chest wall; the apex-beat was 1 inch outside the nipple-line. She had incidentally freely moveable kidneys, a retroverted uterus, was almost blind (though not old), and whilst in hospital became deeply jaundiced. Dr. White assisted me to remove one lobe, and, later, half the other. The patient now leads a happy life, does light work, walks, and drives. Of course she cannot do hard work, and her heart can never be sound, but she was completely invalided before.

I have reported before the case of a nun, whose face was asymmetrical with œdema every time she slept. Dr. A.

[1] A paper read before the Surgical Section of the Royal Society of Medicine in joint meeting with the Medical Section and the Section of Anæsthetics on Feb. 13th, 1912. The discussion upon it was adjourned.

[2] Brit. Med. Jour., May 22nd, 1909.

Shields helped me to operate upon her three years ago, and she has since been made Mother Rectress of her convent. She says, with a smile, that she "cannot go up and downstairs *too* many times a day." Her pulse is irregular but quiet; and she does her work fairly comfortably. Two patients whom I had placed in this class on account of œdema, and what was apparently heart failure, completely recovered; and each does all the female labour on a farm. I could multiply instances and details. All of these patients may be written to, or letters from them seen. I do not think that any anæsthetist would care to give a general anæsthetic to cases in this class, but under local anæsthesia one can state that the patients stand the operation well. There is only danger under two conditions: (1) operating under an acute exacerbation of poisoning; (2) operating when bronchitis is present.

About the third class, some authors says that even in the smallest glands associated with thyrotoxic symptoms one can detect the active part and remove it. I cannot, and I think it is unwise to remove portions of a gland which is not obviously enlarged, even though all, or most, of the other characteristic signs are present. One wants to be sure that there is no enlarged portion beneath the sternum or either clavicle. If there it is not always easy to detect. Microscopically such glands show acini densely packed with active cells, and the activity of gland tissue per cubic space is so great that if half or two-thirds of the gland is removed the remaining portion is still so poisonous that it produces symptoms; and it seems that those densely packed cells are likely to atrophy from mutual pressure later. That is only opinion, but the few cases of this class that I have operated upon make me disinclined to remove gland substance.

The fourth class I will not take up time speaking about. The response to operation is immediate and complete.

I think that here I should speak of the mortality. That is one of the most important points to the physician who is deciding the welfare of a patient. I have published enough about the first case I lost, removing too much tissue at once with much crushing when one was inexpert. I lost my second case through operating when bronchitis was present, but the pulse-rate was getting higher each day, and the condition was grave; one took the risk to try to save life. Hypostatic pneumonia followed and the patient died. The third case was moribund when I operated. The patient had been ill for some years and became rapidly worse; then she was sent up to me. Her pulse-rate was between 160 and 180; and she was acutely ill. With Leiter's tubes and calcium lactate the pulse came down to 144 one morning, but rose again to the vicinity of 170 to 180. I knew I could remove the larger lobe rapidly. I thought that, even then, if the larger lobe could be removed without much handling it might not be too late. I discussed it with the husband; he could see that she was dying. I did it. It made no difference at all; the pulse kept the same for the next 24 hours, and she died. That woman had two years during which she could have been operated upon safely and completely cured. The last exacerbation came on whilst she was under medical treatment; then it was too late. I have lost one other case, the circumstances surrounding which I cannot publish. That is four deaths in 380 operations of all classes, and in 230 cases of exophthalmic goitre, and for each death there was an accountable reason.

I think the opinion is becoming almost universal that under certain circumstances operation may be necessary in any case, but there are many who would regard it as being only a last resort. For certain reasons I feel strongly that operation should not be regarded *only* as a last resort. So long as it is regarded as a last resort operation cases will be continually progressing from Class I. to Class II., and the practitioner will have taken away from the patient her chance of complete recovery. Also I would like to say that during the last 18 months five cases have been sent to me in which the patients simply died as soon as they got into hospital. Operation was out of the question; they were dying when they arrived, and all of them had been under constant medical attention. One came 160 miles by train, reached the hospital in the afternoon, and died the same night. One drove 20 miles in a conveyance. 200 miles by train, ambulance to a private hospital, and died. One died at home in the few days intervening between the time when she decided to come into hospital and the day when a bed could be ready. One was admitted into a medical ward until a surgical bed could be ready, had diarrhœa and vomiting all the time, and died before operation. One of the deaths after operation which I mentioned might be added to this number, for the patient was practically moribund when she arrived. This would make a total number of six patients, who were sent absolutely too late for surgical interference. That is one aspect of the *dernier ressort* view!

Then, when speaking of the permanent damage which may occur, I would mention one case in which the eyes were so proptosed that the conjunctival mucous membrane was hanging in œdematous folds. Dr. Edward Ryan said that unless the exophthalmos could be relieved by partial thyroidectomy the patient must lose her eyes. I operated with a pulse so rapid that at times it could not be counted. Her pulse is now in the eighties, but one eye has gone completely; and although the cornea is still transparent in the other, we are not yet sure what will happen. Then there are all the cases which have advanced from Class I. to Class II., those in which the damage is irreparable; I think one cannot ignore evidence like that.

There is also the question as to how much gland tissue should be removed. We know the immense physiological importance of the thyroid gland, and yet here we have it poisoning heart muscle, poisoning nerve tissue, causing exopthalmos and emaciation. We have to remove enough to cure the disease, and we must leave enough for physiological purposes, and all the judgment and experience which one has are called for. In young patients, and those not very bad, the larger lobe should be enough, with any mid-lobe or isthmus. In older people, and those in whom the disease is very bad, the removal of one lobe will practically not do any good at all; one lobe and half the other must be removed. If the gland has been big and active, even then the remaining portion may be too large. One has to remember that more can always be removed, but it cannot be put back again easily. One must remove enough, but one must never be hustled into removing too much in order to make a "complete job" at once. Although I now rarely have to operate more than once, it will occasionally happen that more has to be removed in order to completely cure the patient, and in three cases I have operated three times. They were among my earlier cases, and only one lobe was removed at first; they were also among the earlier cases in which I was recognising that part of the second lobe had to be removed, hence I was very frightened of removing too much. So later I removed a third portion. I am sure it was wiser to go slowly and safely in the way I did; it all had to be, in the way of finding out knowledge.

Anæsthesia.—Now as regards anæsthesia, with the exception of a very few cases in which open ether has been given by Dr. W. T. Harse or Dr. Davies, all my operations have been performed under local anæsthesia. I know that in many instances general anæsthesia may be quite safely given, but in a great many instances it cannot. *All* the causes of death in this operation are not known; chief among them are crushing and handling of gland tissue, slow operating, inexpertness. General anæsthesia alone is not the chief cause of death, but I like operating under local anæsthesia; the patients are safe, the distress is negligible, the recurrent laryngeal nerve may be guarded, post-operative vomiting does not occur, pints of fluid may be given by the mouth. And the moment the operation is over the patient is happy enough to smile, and free from the unpleasant sequelæ of general anæsthesia. General anæsthesia could not be given to cases in Class II., and scarcely in the worst cases of Class I. Almost always the upper pole, or a pear-shaped protuberance from the posterior edge of the middle of the lobe, wraps itself tightly around the trachea, almost behind the trachea. In these cases there is a little "drag," but I submit that that protuberance is more safely shelled out and off the trachea by gentle manipulation under local anæsthesia. In many instances, with nervous patients I have placed the apparatus for general anæsthesia on a shelf in the room, and told the patient that she might have it on demand. I have never had to change, and have long ceased to carry the apparatus. Local anæsthesia means using 7 oz. of 2 per 1000 novocaine, and well infiltrating all the front of the neck.

As regards exophthalmos, the reports that occur in the literature differ very widely. I find that if one lobe and a portion of the other be removed the eye corresponding to the

complete removal recedes much more than the other. If sufficient gland substance has been removed to cure the general condition, the eyes, even if they have been very prominent, almost always recede in a longer or shorter time. One patient whose eyes were very proptosed, and looked quite uncanny, became normal in appearance within a fortnight of operation. Another who had two operations took ten months. I have mentioned the patient whose eyes were so proptosed that one was destroyed, the other receded after operation but not completely, and a few always have a little proptosis remaining.

About the parathyroids, I have not evidence from which to speak. In 380 operations I have never seen evidence of tetany. I certainly strip back the posterior capsule as carefully as I can, but I never do the intracapsular ligation of vessels, as insisted on by some American writers. If they are as readily damaged as the literature would show, I must have damaged them many scores of times. At present I have to suspend judgment.

I think, again (this is only opinion), that if the removal is rapid and gentle, removal of one lobe and a half is possibly less dangerous than removal of one lobe alone, for the following reasons. Removal of one lobe, I believe, causes reflex dilatation of the vessels of the other lobe, with increased activity of the gland. The remaining lobe, being tightly encapsuled by its capsule, must pour the results of its increased activity into the lymph and blood vascular systems, with consequent poisoning. If all of one lobe and half the second be removed *without crushing*, the clean-cut surface of the second lobe allows free escape for the thyroid secretion and lymph, which is led to the exterior by an efficient drainage-tube. This supposition would certainly not hold good with slow operating or rough handling of the gland. The operation must frequently result in failure if only one lobe is removed, the other lobe being at the same time large and vascular. Removal of one lobe may not do a patient any good at all, and it is because so much thyroid tissue is left behind that the operation is so frequently spoken of as not being successful.

The fear that these patients may become myxœdematous has been expressed to me frequently. The operation is being performed extensively the world over now, and many critical eyes are watching results. I think no case of myxœdema following operation would escape observation. On the other hand, I think the greater fear is that, without operation, many cases will pass from Class I. to Class II., or else come too late for surgical interference.

In Osler's "System of Medicine" the statement is made that the disease is one from which "few recover and some die." Against that one can say that one has seen individuals so miserably wretched that life was burdensome, become in one week absolutely calm, lose all tremor, and in a few weeks able to actively enjoy life; others who though not quite so bad are unable to do work except with constant distress, become in a few weeks able to undertake their duties with comfort. They play tennis, they ride, they dance; one man builds coaches; one, who was very ill, has returned to blacksmithing. If, rarely, there is one in whom, through not removing quite enough tissue, the heart beats still too rapidly, one feels that it is better to err on the safe side, and it does not detract from the result in the cases of scores of patients who are leading vigorous lives.

Melbourne.

THE CHILD STUDY SOCIETY, LONDON.—A conference of combined societies, under the auspices of this society, will be held in the University of London on May 9th, 10th, and 11th, under the presidency of Sir James Crichton-Browne. The subject for discussion at the conference will be "The Health of the Child in Relation to its Mental and Physical Development." Papers will be contributed to introduce discussions on Influence of Defects of Hearing and of Vision in Relation to the Mental and Physical Development of the Child, by Dr. J. Kerr Love and Mr. N. Bishop Harman; the Tuberculous Child, by Dr. Jane Walker; Mental Hygiene in Relation to the Development of the Child, by Dr. T. B. Hyslop; Instruction of the Young in Sexual Hygiene, by Dr. G. Eric Pritchard; and a lecture to the conference on Eugenics and Child Study will be delivered by Dr. C. W. Saleeby.

TUBERCULOUS DISEASE OF THE BONES AND JOINTS:

PRESENT POSITION OF TREATMENT IN LONDON.

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IT may now be accepted that tuberculous disease of the bones and joints is, in England at least, the most important cause of crippling in childhood. Statistics published in the reports of the Medical Officer (Education) to the London County Council during the past few years leave no doubt upon this point, but it may be well to complete these statistics up to date. The following numbers refer to 3275 crippled children examined by me in the London County Council Invalid Schools during the past five years.

Causes of Crippling in 3275 London Children.

Tuberculous disease of—		Congenital—	
Spine	558	Dislocation of the hip	105
Hip	670	Talipes	91
Knee	298	Various deformities...	31
Ankle	70	Total congenital	227
Elbow	10		
Various bones and joints	28	Rickets	158
Total tuberculous disease	1634	Amputations	67
		Old septic bone or joint disease	78
Paralysis—		Spinal curvatures... ...	80
Infantile	636	Various deformities ...	89
Spastic	255		
Progressive...	32	Total	3275
Various...	19		
Total paralysis ...	942		

In Germany in 1906—at the instance of Biesalski—a complete census of the crippled children was taken. 75,183 were found in the whole of Germany, excluding Bavaria, Baden, and Hesse. The principal groups were:—

Principal Causes of Crippling in German Children.

Tuberculous disease of bones and joints	11,303	Severe scoliosis	9,167
Infantile paralysis	11,165	Congenital dislocation of hip	6,479
		Severe rickets	4,724

The importance of tuberculosis is again evident. That its numbers are apparently lower in Germany is partly due to the inclusion in Biesalski's statistics of many comparatively slight defects, which would not be considered sufficiently severe to necessitate the transfer of the child to a special school. But it is also clear that infantile paralysis, severe rickets, and severe adolescent deformities are more common in Germany than in London.

There is much controversy as to the frequency of chronic pulmonary tuberculosis in childhood. There can be none as to the frequency of tuberculosis of the bones and joints. Some figures, given by Sir George Newman in his report for 1910, are of importance in this connexion. It is there shown that in a large collection of statistics, obtained in course of routine school inspection, the total cases of tuberculosis were made up as follows:—

Phthisis (excluding doubtful cases)...	1243
Other forms of tuberculosis	1625

Unfortunately the nature of the lesion in these other forms of tuberculosis is not stated, but it is certain that a large proportion of them must be cases of surgical tuberculosis, including disease of the bones and joints.

These forms of tuberculosis in childhood are not very fatal. The death-rate among the 1634 children in the London schools was only 2 per cent., although many of the children had been watched for as long as five years. This, of course, does not represent the real death-rate from the diseases. The children in these schools have, as a rule, passed through the more acute stages of their disease, and, indeed, for this reason the figures given above do not represent anything like the total number of such children in London, for there are probably nearly as many again in the various hospitals and infirmaries. The total death-rate is probably about 20 per cent., leaving about 80 per cent. who

recover, most of them with some resulting deformity or defect more or less severe.

On commencing the work of inspecting the London County Council Invalid Schools the extent and severity of these resulting deformities came as a shock, and gave an entirely new insight into the efficacy of the present hospital methods of treating such conditions as spinal caries and tuberculosis of the hip and knee. For example, among the first 180 cases of spinal caries examined in the schools, no fewer than 104 were classed as having a severe angular deformity. The first 210 cases of hip-joint disease I classed as follows:—

Cases of Hip-joint Disease.

Disease quiet—	
With good mobile hip	14
With ankylosis and good functional result	22
With some movement, good functional result	20
Moderate functional result	34
Bad functional result (including 25 excisions)	71
Disease active	36
Amputations	6

7 cases were not fully examined.

At that time I also formed a very bad opinion of the final results of such radical operations as excision of the knee for tuberculosis, and this opinion has been only strengthened after further observations. In 1910, collecting the cases of old excision of the knee seen amongst these school children, I found that I had records of 87 children with 89 excised knees, the operations having been done at various hospitals all over London. Stated briefly the results were:—

Results of Excision of Knee.

Recovered, no deformity—		Deformities—*continued.*	
Free movement	1	Genu varum, 20° or less	8
Ankylosis	5	,, ,, 20° to 60°	8
Still active	7	Shortening—	
Deformities—		Under 1 inch	7
Flexion, 20° or less	19	1 inch to 3 inches	40
,, 20° to 40°	14	3 inches to 6 inches	16
,, 40 ,, 90°	11	Over 6 inches	3
Genu valgum	3		

Note.—Many cases come twice into these figures as having both deformity and shortening; in several the shortening was not capable of measurement owing to the deformity.

This does not quite tell the whole story, as of these children 25 had already undergone a second excision, three a third excision, and one an osteotomy for the correction of deformity.

Sufficient has been said to show the great severity of these deformities resulting from tuberculous disease. They are of as great importance to the community as to the individual. Only those who have had to do with the education of these children, and with attempts to find them work suited to their defective physique, can fully appreciate how necessary it is to reduce all deformity to a minimum. Every severely deformed person is liable to be a constant drain upon the community, and it is evident that our present methods of treating tuberculosis are not as efficient as they might be in reducing this drain to a minimum. It is time that we looked into our methods, to see in what respects they fall short of the ideal, and in what manner they may be improved.

The principles of treatment of these conditions are simple, and have for a long time been well understood and taught; but it is to be feared that, owing to various difficulties, they are not carried out with anything like uniformity. Briefly they are:—

1. Early diagnosis.

2. Exact diagnosis, including routine radiography, so that the cases of focal disease in the bone, capable of radical treatment, may not be missed. This applies specially to disease of the knee and other accessible joints.

3. Correction of any deformity that has already arisen. This is, as a rule, completely neglected in spinal caries, in which disease hyper-extension of the spine in the early stages will gradually undo a part at least of the deformity.

4. Rest and fixation, in that position which will be the best if ankylosis supervenes; for example, the spine to be fixed in slight hyper-extension, the hip extended, slightly abducted and with the foot pointed directly forward, the knee fully extended, &c. The spine and hip can only be satisfactorily fixed with the child recumbent; to attempt to carry out rest and fixation by ambulatory treatment is to neglect this principle.

5. The treatment of abscesses by means as conservative as possible, postponing operative treatment and using aspiration in preference to incision.

6. After-treatment by fixation or support as long as is necessary to prevent subsequent contracture. The complete period of treatment is always to be measured in years.

The exact mechanical methods are a matter for the individual surgeon. Thus, if one surgeon prefers the double Thomas frame, another the Berck frame, a third the Whitman frame for the treatment of spinal caries, it is generally because each knows his own instrument best. The results obtained will depend at least as much upon the individual care of the surgeon as upon the method.

It would be tedious to enlarge further upon the details of treatment, but it is instructive to see to what extent they are, or can be, carried out in the various classes of hospitals and other institutions.

In the large general hospitals and in the children's hospitals the evident chief failure is the short period of treatment of these children as in-patients. This is due to causes that are inevitable—press of work, the numbers awaiting admission, and so on. Nevertheless, it is a defect which at once renders these hospitals totally unsuitable for the treatment of most of these cases. As a rule the children are admitted only for short periods—for the opening of an abscess or for the correction of a deformity; and the main part of their treatment, by rest and fixation, has to be carried out upon them as out-patients, a practical impossibility.

The infirmaries are to some extent liable to the same objection, although there is less reason for hurrying the children out of the wards. But they are more liable to the objection—if only owing to understaffing—that the principles of correction of deformity and of proper fixation are liable to be neglected.

The special hospitals—such as the Alexandra Hospital, The Vine at Sevenoaks, Treloar's Hospital at Alton, and the Liverpool Country Children's Hospital at Heswell—are liable to none of these objections. They can carry out to the full all the principles of correct treatment, and it has been evident to me that the results obtained in these hospitals, as seen in the London County Council schools, are many degrees better than those obtained in the general or children's hospitals.

Three other varieties of country homes require to be mentioned. The so-called country surgical homes, of which there are many around London, in theory possess most of the possibilities of good treatment. In fact, they suffer from many defects—they are too small, are often imperfectly equipped (e.g., have no X ray apparatus), and are looked after by honorary medical officers, who have too little time to give up to the home and are apt to accept and continue the treatment which was being carried out at the time of the child's admission or else to drop treatment altogether. Sometimes these honorary officers lack proper knowledge of the mechanical methods which are required, and sometimes have too great a desire to operate.

Convalescent homes are evidently only suitable for cases sufficiently recovered to require no further treatment.

The Metropolitan Asylums Board Homes, such as those at Margate and Carshalton, have all the same advantages as have the special hospitals. It is to country hospitals of this class that we have specially to look for the improvement in the treatment of tuberculous disease of the bones and joints. These country hospitals present only one defect. On discharge the children are often returned home without instructions and without arrangements for after-supervision. It should be easy to arrange these hospitals to work in close touch with the out-patient departments of the hospitals, receiving children from them directly and without delay and returning them to the out-patient departments when discharged from the country hospital.

To summarise, then, the results of observations upon a large number of children suffering from old-standing tuberculous bone and joint disease in London, these create a profound dissatisfaction with our present methods of treatment. This criticism applies chiefly to our methods of organisation and administration, and the obvious line of advance consists in the increase of special hospital accommodation for these children. Whether this increase should be carried out by

the efforts of the charitable public or at the expense of the rates is a matter for the public themselves to decide. It is, however, clear that the results of defective treatment are so serious in that they produce a large number of cripples, that it is not unreasonable to hold this extra provision should be made at the expense of the rates, and that a large increase in the work that the Metropolitan Asylums Board has commenced at Margate and at Carshalton is justified.

The requirements, then, may be briefly stated:—

1. Increase in the accommodation for in-patient treatment of children suffering from tuberculous disease of the bones and joints, preferably in special hospitals situated in the country close to London.
2. The levelling up of these hospitals by having them staffed and supervised by men who will make a special study of the treatment of tuberculous joints, not only from the point of view of saving the child's life, but also from the point of view of preventing deformity.
3. The provision of extensive open-air wards.
4. Provision for treatment for an indefinite period, and for children of all ages, including infants.
5. Arrangements for the education of the children whilst in the hospital.
6. Proper arrangements for after-supervision in an out-patient department and in the home.

Devonshire-place, W.

TUBERCULOSIS OF THE MESENTERIC GLANDS IN CHILDREN:

ITS NATURE AND TREATMENT.*

BY EDRED M. CORNER, M.C. CANTAB., F.R.C.S. ENG.,

SURGEON AND LECTURER TO ST. THOMAS'S HOSPITAL AND TO THE HOSPITAL FOR SICK CHILDREN, GREAT ORMOND-STREET.

TUBERCULOSIS of the mesenteric glands is a condition often found by the surgeon when operating on the abdomen in children. Indeed, I would go so far as to say that tuberculous glands can be found in the mesentery of the small intestine in nearly every case of illness in a child which necessitates abdominal section. The frequency of tuberculosis of the mesenteric glands has been estimated by physicians and pathologists amongst children dying from some form of tuberculosis to vary from 54 to 78 per cent. It has been found, by post-mortem examinations, that in 22 per cent. of these cases the lesions in the mesenteric glands are the only lesions present, but in children with abdominal signs and symptoms they are present in nearly cent. per cent. of the patients.

These figures give very erroneous ideas to the clinician, and particularly to the surgeon. Abdominal sections are not as frequent in children as they are in adults. But during experience of the surgical practices of St. Thomas's Hospital and of the Children's Hospital, Great Ormond-street, it has been my fortune to see a large number of such operations. And the result of this experience is that tuberculous mesenteric glands will be found in practically every child patient submitted to an abdominal operation. Yet, as these children do well and live long, it must be from its frequency that this form of tuberculosis is one very amenable to treatment, and not of the bad prognosis which physicians and pathologists would have us to believe.

The reason for the great frequency of tuberculosis of the mesenteric glands is to be found in a consideration of the processes of digestion, such processes being regarded in their mechanical or physical characters.

The walls of the small intestine are composed of two complete and uniform coats of muscular tissue. The walls of the large intestine have no such uniform coats; the coat of circular muscular fibres is complete, but the longitudinal coat is gathered into three distinct longitudinal bands. As students of science, we have learned that where there is a difference of function there also will be a difference of structure. And the converse is true, where there is a difference of structure there will be a difference of function. The difference in muscular structure cannot be connected with the production of the different chemical juices—that is a function of the mucous membrane, not of the muscular coat. Therefore the difference in structure between the small and the large intestine must be concerned with their contraction—peristalsis. There is little difference in the contractions of the large and small intestines, except in one detail. The contractions of the small intestine, being more even and equable, are adapted for the passing onward of fluid contents; the contractions of the large intestine are less even and regular, being adapted to the passing onward of solid contents.

If the transition of the contents of our intestines from liquid to solid were accomplished gradually, the structure of the small intestine would gradually shade off into that of the large. This is not so. The structure of the small intestine ends abruptly, and that of the large intestine commences at the ileo-cæcal valve. Then it may be assumed that the physical change in the bowel contents from fluid to solid (accomplished largely by the absorption of water and the deposition of mucus) is accomplished whilst the products of digestion pause and wait at that place—namely, the cæcum.

Hence it will be seen that there is a period of pause in the transit of the products of digestion in the cæcum during which these physical changes are accomplished. This pause is made in a warm, slightly alkaline medium. Besides food, a varied host of micro-organisms is ingested which will flourish and multiply during the pause in the cæcum. This has been proved by means of counting the colonies of organisms grown in cultures from various parts of the alimentary tract. In this way it has been proved that micro-organisms are a hundredfold or a thousandfold more numerous in the cæcum than in any other part of the alimentary tract. It may be assumed true for tuberculosis and other infective conditions of the alimentary tract. Hence they are at their maximum infectivity or septicity in the ileo-cæcal region.

To protect the body against this menace a large amount of lymphoid tissue has been formed in the ileo-cæcal region. Hence the function of the appendix. There must be a continuous "ileo-cæcal" strife between organisms and the lymphoid tissue. And so long as the lymphoid tissue prevails the host is in good health. If the micro-organisms get the best of the ileo-cæcal strife the host is in bad health, and may suffer from appendicitis, colitis, or infected glands in the mesentery.

From the above reasoning there can be no mistake in assuming that the great entrance of tuberculosis from the intestine to the body is by the lymphatics of the ileo-cæcal region, and that, therefore, tuberculosis of the mesenteric glands originates from there. Though there is a considerable risk of the generalisation of tuberculosis from the infected mesenteric glands, in this situation the disease is not necessarily fatal. The children suffer from ill-health and abdominal pains referred to the umbilical region. These pains come on at night and sometimes after food. The loss of appetite, anorexia, is often accompanied by some disturbance of the action of the bowels, more often inactivity and constipation than looseness of the bowels.

It is a fact that I have often done abdominal exploration on such children with chronic ill-health, vague abdominal symptoms and discomfort, &c., with or without a tumour on abdominal palpation. And from a very considerable experience of such cases I can say that tuberculous mesenteric glands and a somewhat dilated appendix containing fæcal material, but otherwise not obviously diseased, are always found. The appendix is removed, whereby a great danger is obviated and a great source of discomfort, from contractions on the fæcal matter (appendicular colic), is avoided. A fortnight or three weeks after operation the patient is sent away to a country home. In nine cases out of ten the improvement is rapid and great. Shortly after the operation the appetite returns, and the patient eats and digests with enjoyment articles of diet which had been interdicted before. Hence there can be no doubt, certainly in my mind, that the appendix is the great (and removeable) source of danger and discomfort in these cases, and that no convalescent treatment should be undertaken until that is done.

About the nature of these tuberculous mesenteric glands there is doubt. Are they due to bovine tuberculosis from ingested milk, or are they due to human tuberculosis? At the present moment I am unable to say. Von Pirquet's test for bovine and human tuberculosis is usually negative. And from its varying results I must conclude that some infections

* Portion of a clinical lecture delivered at the Hospital for Sick Children, Great Ormond-street.

of the mesenteric glands are due to human tuberculosis, some to bovine tuberculosis, and some are due to both. Be this as it may, the clinical indications are clear in the cases of children with dietetic troubles, indigestions, abdominal pains and discomfort, and perhaps colitis; remove the appendix and begin sanatorium treatment a fortnight later.

I would therefore urge the very great frequency of tuberculosis of the mesenteric glands in children, and would advise the removal of the appendix in such cases as a preliminary step to further and "physicianly" treatment.

Harley-street, W.

ENTERECTOMY UNDER SPINAL ANÆSTHESIA FOR ACUTE INTESTINAL OBSTRUCTION IN AN INFANT 24 HOURS OLD; SURVIVAL FOR ONE MONTH.

BY GEORGE E. WAUGH, B.S. LOND., F.R.C.S. ENG.,

SURGEON TO THE HOSPITAL FOR SICK CHILDREN, GREAT ORMOND-STREET; AND ASSISTANT SURGEON TO THE HAMPSTEAD GENERAL AND NORTH-WEST LONDON HOSPITAL.

THE record of this case is of interest for the following reasons.

1. The rarity of the condition—congenital hernia of the cord—which was responsible for the acute intestinal obstruction. Coley records that in over 75,000 cases of hernia observed at the Hospital for Ruptured or Crippled, New York, only four such cases were found. The same author, quoting Adler, found that of 94 such cases upon whom laparotomy had been performed in other clinics 29 died within a few days after operation.

2. No case of successful resection of intestine with lateral anastomosis for acute obstruction has yet been recorded in a child of this age. Fairbank and Vickers,[1] in recording a successful resection with the use of Murphy's button in a case of their own, aged 7 months, refer to Collinson's case aged 3 months. (Subsequently a case was recorded in one of the journals of a similarly successful operation at the age of 17 days, but I have been unable to verify the reference.) Parry,[2] in recording a case of his own, aged 6 months, mentions that up to 1909 no case of resection of intestine for acute obstruction under the age of 12 years had survived at the Royal Hospital for Sick Children, Glasgow. Until Fairbank's case of 7 months old no child under 2 years of age had survived this procedure at the Hospital for Sick Children, Great Ormond-street.

3. The use of spinal anæsthesia. To undertake a procedure that in children under 2 years of age is so universally fatal that any survival is considered worthy of record would not have occurred to me had not my previous experience of several hundred cases of spinal anæsthesia in children, as modified by Mr. H. Tyrrell Gray, convinced me that failure in this case could only arise from faulty surgery and not from that hitherto uncontrollable factor—shock. This is a point of considerable importance in view of the fact that when Gray began his work four years ago on the modification of the fluid and the method of administration that would ensure its use with safety in children many surgeons had already committed themselves to the opinion that spinal anæsthesia in children was not an advisable procedure. The published records of his cases amply controvert this view, and the credit for the survival of the above case is entirely due to his method of spinal anæsthesia, that enables shock to be warded off with safety, and not to any new surgical procedure.[3]

The history is as follows. The patient was admitted under my care to the Hospital for Sick Children, Great Ormond-street, on June 2nd, 1910, 18 hours after birth. He was a poorly developed, undersized infant, who had been vomiting continuously since birth and had passed neither gas nor solid matter per rectum. His condition was very feeble and the pulse was uncountable. In the situation of the umbilicus was a tumour about as large as his own head, from the apex of which the umbilical cord had been ligated. The wall of the tumour was an opalescent sac with engorged veins in its substance, the base of the sac being continuous with the margins of a small opening in the abdominal wall. The contents of the sac were clearly seen to be many coils of small intestine (see figure). The abdomen was distended and a brief attempt to reduce the contents through the small opening in the abdominal wall was soon abandoned as hopeless. The reason for failure was two-fold, but was only determined after the sac had been opened. A full dose of Gray's stovaine-dextrin fluid was then injected into the spinal theca in the usual manner by Mr. G. M. Huggins, the resident medical superintendent, and in a short time the operation was proceeded with. Complete anæsthesia and muscular paresis were produced to the level of the seventh thoracic segment. On opening the sac it was found to contain from 1 to 2 feet of coils of small intestine, in parts gummed together by exudate, which was probably due to the fact that at birth an exploring needle had been run into the sac, wounding a coil of intestine with consequent slight escape of contents. Opposite to the apex of the superior mesenteric artery a short Meckel's diverticulum fixed the intestine

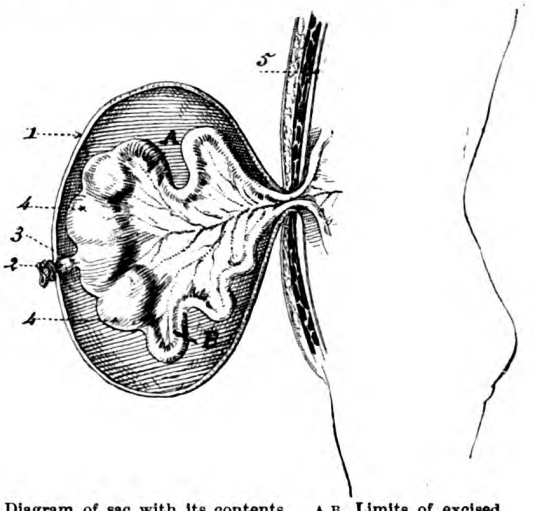


Diagram of sac with its contents. A B, Limits of excised portion of small intestine. 1. Thick-walled opalescent sac. 2. Stump of cord ligated at birth. 3. Meckel's diverticulum. 4. Sacculated portion of small intestine. 5. Parietal peritoneum.

to the interior of the sac at the site from which the cord had been cut after ligation at birth. That portion of the small intestine from which the diverticulum arose was dilated into three saccules resembling in appearance and size large intestine but devoid of appendices epiploicæ. The diverticulum, which was patent at its enteric attachment but blind towards the apex, arose from the free border of the middle saccule. This condition constituted one reason why the reduction of the contents from the sac was impossible. The second reason was due to the fact that the small size of the opening in the abdominal wall would not permit any of the distended coils of the intestine in the sac to be pushed back through it. Even after the intestines had become collapsed their size was so much greater than this opening as to suggest that the whole condition had been brought about by premature closing of the abdominal wall during development and that the intestines excluded in the sac had subsequently continued to grow. The sac was therefore cut away around its base and clamps then applied to the intestine so as to permit of excision of the anchored portion of the gut from which the Meckel's diverticulum arose. This portion included apparently normal small intestine on either side of the three saccules and measured 6 to 7 inches in length. After closing the two ends a lateral anastomosis was performed in the usual way. As the effect of the spinal anæsthesia was now beginning to wear off a second dose was given, and then the opening in the abdominal wall was enlarged so that the entrapped part of the intestine could be inspected and reduction of the extruded portion effected. This was easily achieved, and almost immediately afterwards the child passed a large quantity of meconium per rectum. The edges of the sac

[1] THE LANCET, Feb. 5th, 1910, p. 364.
[2] Proceedings of the Royal Society of Medicine, 1909, vol. ii.
[3] THE LANCET, Sept. 25th (p. 913) and Oct. 2nd (p. 991), 1909, and June 11th (p. 1611), 1910.

were then trimmed and the laparotomy wound closed by deep and superficial sutures. A noticeable effect of the spinal injection was an immediate improvement of the pulse-rate with a cessation of retching and vomiting.

The recovery was uneventful and the stitches were removed from a perfectly healed wound on the tenth day. The bowels acted normally during that period, and after the first 36 hours there was no vomiting. But the patient was an undersized weakly infant, and at the end of a fortnight was sent home with the hope that his mother's milk, which had been maintained for him, would enable him to thrive. Unfortunately this was not the case, and he died a fortnight later, the cause of death being certified as marasmus. A post-mortem examination was not obtained.

Welbeck-street, W.

A CASE OF SEVERE VERTIGO:

DESTRUCTION OF THE LABYRINTH; CURE.

BY MACLEOD YEARSLEY, F.R.C.S. ENG.,

SENIOR SURGEON TO THE ROYAL EAR HOSPITAL; CONSULTING AURAL SURGEON TO THE ROYAL SCHOOL FOR THE DEAF AND DUMB, MARGATE; MEDICAL INSPECTOR OF LONDON COUNTY COUNCIL DEAF SCHOOLS, ETC.

THE patient, aged 31 years, was sent to me on Dec. 9th, 1909, by Mr. C. A. James, of Stamford-hill, and Mr. E. Jones, of Goswell-road. For 11 years she had suffered from attacks of vertigo. Their onset was sudden, with a feeling of falling, in which direction she could not say, nor could she determine the direction of the horizontal movement which was apparent in surrounding objects. They were followed, about ten minutes later, by vomiting, often prolonged. Her last attack had been on Dec. 7th, when she had awakened suddenly at 3 A.M., with a sensation of giddiness, got out of bed, fell, vomited, and was incapacitated by vertigo and sickness until 8 P.M. Occasionally slight hissing or buzzing tinnitus occurred and was worse during the vertigo, but these noises were by no means always present. The frequency of the vertigo attacks varied; she had passed three years and nine months without one of any severity, but they had of late become more frequent and more severe, and, during the summer of 1909, she had four bad attacks in ten days.

The patient was a hard worker, abstemious, and, apart from her vertigo, in good health. She began, however, to be in constant dread of the attacks, fearing lest she should fall into the fire or sustain other serious injury during their occurrence. Her appetite was not good, but she had no dyspeptic symptoms and never vomited save during an attack of giddiness. A general examination revealed no physical signs.

The patient was deaf on the right side, and she stated that she had discharge from that ear for 18 months after an attack of diphtheria at 18 years of age. On examination the lower half of the inferior segment of the right tympanic membrane was thickened and opaque. The remainder of the membrane was thin and flaccid, especially in the superior posterior quadrant, which appeared to be adherent to the head of the stapes. The left membrane showed inferior thickening. There was nothing noteworthy to be seen in the nose and throat.

Caloric tests were postponed, as the patient was some way from home and did not wish to risk the possible induction of an attack of vertigo. She showed slight horizontal nystagmus on lateral deviation to either side, equal, and probably physiological. Romberg's test showed a tendency to sway towards the right.

Functional tests gave the following results:—Weber: lateralised to the left. Acoumeter: voice and whisper; R., 15 feet; L, *nil*; Rinne: R., double negative; L, positive. Bone conduction: R. greater than -20 sec.; L, -5 sec. Galton-Edelmann whistle: R., 18 580·96 D.V.; L., 40,000 D.V. In the lower part of the scale she could hear no fork on the right side until C 256 was reached, for which she had perception only.

The patient was placed upon general treatment, with large doses of bromide, but this (and later quinine, asafœtida, &c.) had no effect. Seen again on March 30th, 1910, she had had several bad attacks, with severe vomiting. She had noticed that she tended to fall towards the right, and complained that the vertigo left her much more weak than formerly. The caloric test was performed by the house surgeon (Dr. H. More), who found that marked and rather coarse nystagmus to the right occurred after 30 seconds. The question of operation was placed before the patient, who readily consented.

Operation.—On May 28th, 1910, the patient was anæsthetised by Mr. J. Ward Lawson, and the right auricle was turned down by means of Lake's incision. A wide radical mastoid operation was performed; the spine of Henle was well marked, the mastoid being of the infantile type. The antrum was reached quickly, and was found to be of about the size of a split pea. The bridge was removed, leaving the tympanic membrane intact, which, after the extraction of the incus through the antrum, was removed by cutting round with a Sexton's knife. The stapes, with the tendon of the stapedius, having been taken away, the wound was enlarged by the smoothing down of the buttress and all overhanging projections, and a good view of the operation field was thus obtained. One or two facial twitches were noted when working near the pelvis ovalis, and it was found that the seventh nerve was partially exposed in that region. The ampulla of the external semicircular canal having been opened with a fine chisel, that passage was followed into the vestibule, which was thoroughly curetted and swabbed out with a solution of formalin. The tympanic ostium of the Eustachian tube was curetted, the wound was packed, and the auricle was readjusted.

The first dressing was made on May 31st, and nearly all the stitches were removed. No pain or headache was complained of after the operation, and the temperature did not rise throughout the convalescence. There was, however, considerable vertigo, but getting markedly less. The patient left the hospital on June 8th. She still had slight vertigo, but no nausea.

On June 15th she mentioned that she experienced slight staggering when walking, and there was marked nystagmus on deviation to the right. On June 29th she stated that she could walk better and had no vertigo, but on July 6th she said there was always a slight dizziness after walking. The ear healed without complication in about six weeks. The last occasion that she was seen was on Oct. 5th, 1910. She could then walk quite straight; there was no nystagmus, and the feeling of giddiness after walking had almost disappeared.

The patient subsequently obtained a post some distance away, and in a letter dated May 3rd, 1911, she wrote:—

> I am pleased to say that my health generally is much improved and that I have had no attack of sickness until about a fortnight ago, when, after retiring to bed quite well, I was woke up by being sick, but felt no giddiness whatever. I, however, have a tendency to fall, or rather lean to the right side, after having walked for about half an hour; it seems I cannot walk straight, going from left to right unless guided by someone. Otherwise I must say that I am feeling very much better than I was a year ago.

She is now married, and her last letter, dated Jan. 19th, 1912, was in reply to one sent for the purposes of this article. She has replied thus to the following questions:—

1. *Q.* Do you have attacks of giddiness such as you used to experience?—*A.* On an average once in two days I seem to get a giddiness pass through the whole of my body, lasting not more than five minutes.
2. *Q.* Have you any noises in the ear operated upon?—*A.* Occasionally a sound, as of gas; no particular time have I noticed this.
3. *Q.* What is the state of your health generally.—*A.* *Excellent.*
4. *Q.* Have you any attacks of vomiting?—*A.* None, and never felt the slightest whatever.
5. *Q.* Have you still a tendency to lean towards the right side after walking?—*A.* Yes, but it is getting less.
6. *Q.* Have you any difficulty in walking straight?—*A.* I'm afraid this is the greatest of all questions to answer. I certainly cannot walk straight for more than ten minutes when walking quite alone.
7. *Q.* Have you any difficulty in walking or finding your way in the dark?—*A.* Yes; I seem to get a very unpleasant sensation when in the dark; seem to lose control of myself; afraid to venture further on; *cannot imagine a clear space before me*, although I may be certain in myself that the way is clear.

I think, from these replies, that the case may be regarded as a success. The patient is able to live in comfort and no longer has a sudden attack of vertigo, with nausea and vomiting, hanging over her, with the possibility of it lasting for hours. Her replies to the questions are interesting, especially to No. 7, in which I have italicised one sentence.

In the first case of this operation reported by me[1] the patient has since complained of his complete loss of the sense of space when in the dark. A recent experiment, conducted with Dr. F. L. Golla, shows that when rotated even a quarter of a circle with the eyes closed this earlier patient loses all

[1] THE LANCET, Sept. 19th, 1908, p. 871; June 19th, 1909; Feb. 4th, 1911, p. 330.

sense of locality. In this case both ears have been destroyed—the one by operation, the other by disease—and the patient is stone-deaf. I was, therefore, inclined to attribute the effect of darkness to his inability to hear, as much as to the loss of the sense of space. In the later case, however, hearing on one side, as also the vestibule, is normal, yet she has also this sense of insecurity in the dark, although to a less degree.

The investigation of congenitally deaf children, with a view to discover their sensations when in the dark, gave negative results. They appeared to have no difficulty in finding their way and to experience no sense of insecurity, even although rotation with closed eyes (in a series of experiments conducted with Dr. Golla) failed to make them giddy or to disturb their sense of localisation in space. Most of these children had no idea of what giddiness meant.

I have surmised, therefore, that in the case of congenitally deaf children the absence of function in the vestibular apparatus has been compensated by a better development of the muscular sense; and that, in the two adult cases here referred to, that sense has not yet had time to adapt itself to the altered circumstances.

So far as I know, no record has yet been made as to the sensations experienced when in the dark by those who have been deprived of their vestibular apparatus by operation or disease. Perhaps others who have operated upon the labyrinth may be able to throw further light upon the subject.

Queen Anne-street, W.

REMOVEABLE BLADDER SUTURES.

BY COLIN CLARKE, M.B., B.S. LOND., F.R.C.S. ENG.,
LIEUTENANT, R.A.M.C.

THE following method of closing the bladder, with removeable tube sutures, after suprapubic cystotomy, worked so satisfactorily in a recent case that I have ventured to describe briefly the operation.

A private in the 2nd Devonshire Regiment was admitted into the Military Hospital, Cottourra, Malta, in July, 1911, suffering from stone in the bladder. Owing to the cystitis present it was decided to remove the stone by suprapubic cystotomy. Under general anæsthesia the bladder was opened above the pubes and a large, nodular, oxalate stone was removed. The bladder was well washed out with boric acid lotion and a No. 8 rubber catheter was secured in the urethra. The incision in the bladder wall, about 2½ inches long, was closed by means of seven tube sutures.

The tube sutures consist of the following parts:—(1) Strands of ordinary strong silkworm gut; (2) short pieces of glass-tubing, 2 inches long and ¼ inch in diameter; and (3) small brass or steel rings, ½ to 1 inch across. The

FIG. 1.

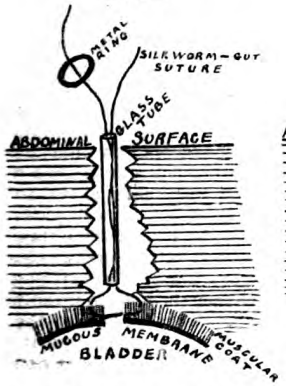
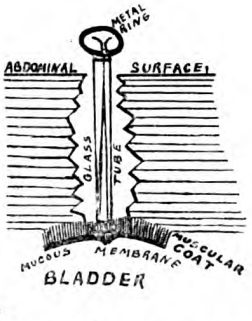


FIG. 2.



sutures of silkworm gut are passed with a curved needle through the muscular coat of the bladder on both sides of the opening. Each suture is inserted not less than ¼ inch from the edge of the incision and emerges on the cut surface, just short of the mucous membrane of the bladder, as in Fig. 1. The two free ends of the suture are threaded through a glass tube and drawn tight; they are then secured in this position by being firmly tied over the rim of one of the metal rings, as in Fig. 2. The loop of silkworm gut which projects from the end of the tube and passes through the bladder wall acts like the loop of a wire polypus snare and holds the two sides of the bladder incision firmly in contact with each other. The other end of the silkworm-gut suture, knotted over the edge of a ring, as in Fig. 2, is on a level with the surface of the abdomen and is easily accessible for the removal of the suture. To remove a suture the silkworm gut is divided close to the knot, and the knotted end is then pulled on until the suture is withdrawn. One hand at the same time holds the glass tube steady in the wound. The silkworm gut remains quite taut after ligature in the tubes, and does not adhere to the bladder wall on removal.

In the case mentioned above seven sutures were inserted to close the bladder opening and five glass tubes were used to hold them. The two lowest tubes carried two sutures in each. The catheter tied in the urethra was connected with a piece of rubber tubing, which passed into a bowl of antiseptic lotion under the bed. The abdominal incision was partly closed, just sufficient opening being left for the passage of the five glass tubes to the surface.

The suprapubic wound was dressed on the day following the operation, and then on every other day until the eighth day after the operation. For the whole of this time the wound remained clean and free from urine. A slight serous discharge from the granulating wound coagulated and glued the dressings to the tubes and rings. The patient was perfectly comfortable, and the whole of the urine drained away through the catheter in the urethra.

On the eighth day after the operation the tube sutures were removed and the catheter was withdrawn from the bladder. Within a few hours following the removal of the tube sutures urine began to escape from the suprapubic wound, this being the first time for urine to appear since the operation, and a small urinary fistula formed. A catheter was again secured in the bladder and a firm pad of dressings applied to the suprapubic wound. Urine continued to escape from the incision for the whole of the eighth day, but on the ninth and tenth days it greatly diminished, and on the twelfth day it entirely ceased. After this the wound rapidly healed.

I regret now that the tube sutures were not left in position for another four or five days. Eight days form apparently too short a time in which to obtain firm healing of the bladder incision. As long as the tube sutures were left in position the bladder wound remained water-tight and no urine escaped. The urinary fistula which formed after the removal of the tube sutures was only a small one and closed in four days, the suprapubic wound at this period being in an advanced state of healing by granulation.

The tube sutures appear to have some advantages in closing the bladder after suprapubic cystotomy.

1. The tube sutures are easy to insert and to remove.
2. No buried sutures are left in the bladder wall to form a focus for suppuration.
3. The bladder can with safety be sewn up after cystotomy and the patient saved the discomfort of suprapubic drainage.
4. In septic conditions of the bladder the glass suture tubes provide a ready channel of escape for any inflammatory exudates which may collect along the bladder incision.
5. In cases where the bladder has to be reopened after operation, as, for example, to arrest hæmorrhage, remove clots, or provide drainage, the suture tubes afford a ready guide to the bladder incision.

Malta.

ASSOCIATION DES MÉDECINS DE LANGUE FRANÇAISE.—The Thirteenth Congress of French-speaking Physicians will be held at Paris from Oct. 13th to 16th inclusive. The subjects appointed for communications and discussion are: 1. Oxalæmia and Oxaluria. M. Loeper, of Paris, will open the subject with a general exposition, and M. Lambling, of Lille, will give a Chemical Study of Oxalæmia and Oxaluria. 2. Acute Infectious Colitis. M. Cade, of Lyons, will speak of Acute Infectious Colitis in the Adult, and MM. Hutinel and Nobécourt, of Paris, of Acute Infectious Colitis of Infants. 3. The Therapeutics of Hæmorrhagic Syndromes. M. Carnot, of Paris, will open with a general exposition of the subject. M. Sabrazès, of Bordeaux, will discuss the Examination of the Blood in the Diagnosis of Hæmorrhagic Syndromes, and M. Nolf, of Liège, the Physio-pathology of Coagulation of the Blood. Other proposed subjects are: (1) Anaphylaxis Clinically Considered; and (2) Anti-typhoid Vaccination. The secretary-general is Professor Bard, 44, Boulevard des Tranchées, Geneva.

Clinical Notes:

MEDICAL, SURGICAL, OBSTETRICAL, AND THERAPEUTICAL.

ABDOMINAL SECTION TWICE ON THE SAME PATIENT FOR ACUTE INTESTINAL OBSTRUCTION DUE TO VOLVULUS.

BY GEORGE HEATON, M.B. OXON., F.R.C S. ENG.,
HONORARY SURGEON TO THE GENERAL HOSPITAL, BIRMINGHAM.

THE following case is of some clinical interest, as the patient has had two attacks of acute intestinal obstruction, due to a volvulus of the sigmoid colon, with an interval of two and half a years between them. The clinical notes of the case are as follows.

First attack.—The patient, a girl aged 16 years, was seen in consultation with her medical attendant on Dec. 16th, 1908. She had then been acutely ill for three days with abdominal pain, vomiting, and complete intestinal obstruction. She was, congenitally, somewhat hydrocephalic, and had since birth suffered from choreic movements of the left side of the body and left limbs. The rhythmical choreic movements involved all the muscles of the left side of the abdomen. She had always suffered from constipation.

Three days previously the constipation had become absolute and the abdomen had rapidly become distended. The pain was at first moderate and colicky in character, but became much worse as distension set in. For the previous two days she had vomited occasionally, and latterly the vomited matter had become stercoraceous in character.

When seen the patient had a marked abdominal facies. The abdomen was extremely distended, tender, and tympanitic all over. There was no sign of any external hernia, and a rectal examination revealed nothing abnormal. The temperature was slightly raised and the pulse-rate varied between 90 and 100. The muscles of the left side of the abdomen were in a state of almost continuous clonic contractions, which ceased abruptly at the middle line.

A diagnosis of acute intestinal obstruction was made, and a laparotomy was performed the same evening in a nursing home. A median incision below the umbilicus was made. On opening the abdomen a loop of large intestine, black and enormously distended, presented itself and seemed to fill the entire cavity. It was brought outside the abdominal cavity and opened, several pints of liquid offensive fæces escaping. The opening was then closed and the bowel was examined; it was found to be an enormously distended sigmoid colon, twisted on its own mesentery from right to left. The bowel was untwisted without difficulty and returned into the abdominal cavity, which was then closed.

Convalescence was uneventful, except that constipation was always a troublesome symptom, and despite the almost constant movements of the muscles of the left side of the abdomen the wound healed by first intention. Her health, except for this constipation, remained good for two and a half years.

Second attack.—On July 22nd, 1911, the patient ate a number of gooseberries, and was seized with acute abdominal pain, with diarrhœa and sickness. This was at first attributed to her error in diet; but the vomiting continued, constipation with rapid abdominal distension set in, and she became daily worse. On July 28th I again saw her. The abdominal distension was then very great, and her symptoms and condition were practically the same as in her previous illness.

Abdominal section was again performed. There were no intra-abdominal adhesions. The sigmoid colon was again found twisted from right to left, enormously distended, and quite black in colour. It was opened and its contents were evacuated. The volvulus was untwisted, and the abdomen was then closed. The bowels were opened naturally soon after the operation. She had a good deal of bronchitis and a very troublesome cough; and the wound, which had been slightly infected during the operation, developed some stitch suppuration, necessitating a somewhat early removal of the stitches.

On August 3rd, after a violent attack of coughing, the scar gave way, and a large number of coils of small intestine and some large intestine were prolapsed into the dressings. She was again anæsthetised, and after carefully cleansing the prolapsed coils and removing the wool which clung tenaciously to them, they were with a great deal of difficulty returned, and the abdominal wound re-sutured. There was no further trouble. She made a slow but uninterrupted convalescence, and has remained in good health since.

Remarks.—The case has several interesting clinical features. Volvulus is very uncommon in young subjects, and it is the only case of the kind I have seen in so young a patient. The recurrence of the volvulus, after an interval of two and a half years, illustrates the well-recognised tendency there is for this form of obstruction to recur. The clonic movements of the abdominal muscles on the left side made me fear for the union of the abdominal wound, and probably in some degree contributed to the reopening of the wound after the second operation.

The question of excision of the distended and twisted bowel—to prevent a recurrence of the volvulus—was raised during the second operation. The patient's condition, however, precluded its performance at the time, and I am afraid the parents would not give their sanction to any such operation now the patient is well.

Birmingham.

A CASE OF POST-OPERATIVE PNEUMOTHORAX TREATED UNDER NEGATIVE PRESSURE.

BY ROBERT NAIRN, F.R.C.S. ENG.

THE following notes of a rather uncommon condition may be interesting.

The patient was a healthy-looking boy aged 8 years. His family history was good. Previous history: He was quite well till the middle of June, 1910, when he was feverish for a few days and later developed whooping-cough. There was no history of pain in the chest. He was first seen by me on August 31st. He was then convalescent from whooping-cough. For two days he had had a temperature of about 103° F. and frequent distressing cough. On examination there was localised fluid at the left infrascapular region adjacent to the middle line. The diagnosis lay between localised pleuritic effusion and hydatid of the lung, with in either case probably commencing suppuration. As the patient had never had any pain, nor even discomfort, hydatid seemed to be the most likely explanation.

On Sept. 2nd, assisted by Dr. W. W. Moore, a portion of rib was excised, but a small opening in the pleura proved that the lung was not adherent. As it was uncertain whether the underlying pleura was diaphragmatic or visceral, the wound was packed with gauze and left for four days. During these four days the patient developed a constant hacking cough, rapid pulse, and very short breathing. On Sept. 6th, on removing the plugs, it was found that the lung had collapsed without forming any adhesions whatever, and the pleura had a whitish unhealthy appearance. On introducing the finger a collection of fluid was discovered after some exploration in the neighbourhood of the spinal reflection of the pleura. Over half a pint of slightly cloudy fluid escaped, apparently an encysted serous collection. We were now faced with a collapsed lung and a probable general infection of pleura.

To keep the lung expanded and to encourage adhesions the wound of the chest wall was closed with sutures as closely as possible and the air removed from the pleural cavity with an aspirator. The breathing and cough were relieved for a few hours and then the trouble gradually returned. Aspiration was repeated several times on successive days, but it was evident that healing would be delayed, as there was no sign of healthy reaction about the wound.

On Sept. 9th the sutures were removed, the pleural cavity was washed out with hydrogen peroxide, and then first a breast-pump and afterwards a Bier's cup was put over the wound and retained in place with strapping and the air partly exhausted. At first the lung expanded fairly well, but the œdema of the wound surfaces soon prevented the cup from maintaining negative pressure in the pleural space. A No. 12 Jaques catheter was then introduced about 4 inches, and cut off about an inch outside the skin level, to preserve communication between the cup and the pleural space. After this there was no further difficulty; the pleura and wound

rapidly grew clean with daily peroxide douching and the cup was left off by Oct. 7th as the wound of the pleura was closed. On Dec. 15th, on examining the chest the lung was found to have fully expanded, with no friction or other unhealthy sound. The patient was in robust health and gaining weight.

The satisfactory result is no doubt to be attributed to the fact that the lung was never permitted to remain collapsed for any length of time, and thus its elasticity was preserved. The defective healing powers of the wound were due to the recent whooping-cough. The method opens up a possibility of further use of such a simple apparatus in operations involving the pleural cavity, especially as the œdema of the outer parts of the wound impaired their vitality enormously.

Hastings, N.Z.

NOTE ON A CASE OF COLD ABSCESS OF THE ABDOMINAL WALL.

BY G. MACDONALD, M.B., CH.B. EDIN.,
HOUSE SURGEON, SCARBOROUGH HOSPITAL AND DISPENSARY.

IN a recent clinical lecture at the Trousseau Hospital M. Savariaud commented on the rarity of cold abscess of the abdominal wall.[1]

On Jan. 1st last a female, aged 19, was admitted to Scarborough Hospital suffering from this complaint. This same patient had been admitted to the hospital on Jan. 18th, 1911. The diagnosis then made was tuberculous peritonitis. Laparotomy was performed, the abdomen being opened in the middle line. A considerable quantity of serous fluid was evacuated and the peritoneum was found to be very considerably thickened. The intestines were adherent to one another and were covered with lymph. The Fallopian tubes, sausage-shaped, bent and covered with adhesions, were removed. The abdominal cavity was drained and the patient made a good recovery. After being discharged from hospital she continued to attend regularly every three weeks as an out-patient.

Three months ago the patient complained of pain on the right side of the abdomen. On examination a small swelling of about the size of a pigeon's egg could be made out in the right hypochondriac region just below the ribs. As the swelling gradually enlarged the pain subsided. The swelling eventually reached about the size of a hen's egg. It had a solid consistence. It did not move with respiration but hardened and disappeared almost completely during contraction of the abdominal muscles. A diagnosis of cold abscess of the abdominal wall was made and the patient was admitted to hospital. She showed no signs of any constitutional disturbance. On admission the temperature was 98° F. and the pulse was 84.

On Jan. 4th an operation was performed. An incision was made over the swelling. A cyst was found embedded in the abdominal muscles, and on opening it about an ounce of pus was evacuated. Iodoform emulsion was introduced and the wound was stitched up, some gauze drainage being inserted at one end of the wound for the first 48 hours. The patient has made an uninterrupted recovery.

The case is interesting from the fact that, according to M. Savariaud, cold abscess of the abdominal wall is usually a primary manifestation of tuberculosis, whilst in this instance it was obviously secondary to the tuberculous peritonitis, infection most probably having reached the abdominal wall by way of the subperitoneal lymphatics.

I am indebted to Dr. J. H. Thornley, honorary surgeon to the hospital, for leave to publish notes of this case.

Scarborough.

[1] THE LANCET, Jan. 6th, 1912, p. 42.

DONATIONS AND BEQUESTS.—Under the will of the late Mr. Francis Tagart, of Old Sneed Park, near Bristol, the University of Bristol and the Bristol Royal Infirmary each receive £1000. Mr. Tagart was for many years connected officially with the Royal Infirmary as a member of the committee.—The Chelsea Hospital for Women has received a donation of £200 from Mr. R. Nivison and a £10 note (placed in letter box) from an anonymous donor.

Medical Societies.

ROYAL SOCIETY OF MEDICINE.

CLINICAL SECTION.

Exhibition of Cases—Congenital Absence of the Left Half of the Diaphragm Simulating Pneumothorax.

A MEETING of this section was held on Feb. 9th, Sir WILLIAM OSLER, the President, being in the chair.

Mr. F. J. STEWARD showed a case of Excision of Epithelioma of Lower End of Pharynx. The patient, a woman aged 40, was admitted into Guy's Hospital on July 3rd, 1911, with a three months' history of pain and difficulty in swallowing. She could take fluids only, and these with difficulty. Endoscopic examination on July 4th revealed a growth involving the anterior and left lateral aspects of the extreme lower portion of the pharynx. Nothing could be felt externally, and there was no evidence of glandular infection. July 11th: Angular incision, transverse limb over thyrohyoid membrane on left side, longitudinal limb downwards along left sterno-mastoid. Depressor muscles, thyrohyoid membrane, superior cornu of thyroid cartilage, and left lateral wall of pharynx divided. From this point the anæsthetic was administered through a tracheotomy tube passed into the upper opening of the cocainised larynx, the tube being packed round with a gauze strip. The extent of the growth could now be examined with the finger; it was found to be quite small, involving principally the anterior and left lateral walls of the lower end of the pharynx and the upper portion of the œsophagus, and freely moveable on larynx and trachea. In order to give further access during the remaining stages of the operation the left lobe of the thyroid gland was then removed as it was slightly enlarged. By tilting the larynx over to the right and drawing the sternomastoid and carotid sheath backwards the site of the growth was brought well into view. The growth, which was about the size of a sixpenny-piece, was excised, together with a margin of healthy tissue about three-quarters of an inch wide. This involved the removal of the whole circumference of the œsophagus with the exception of a narrow strip of its right posterior wall, and exposed most of the posterior surface of the cricoid cartilage and the upper three rings of the trachea. Catgut sutures were then used to bring together the thyrohyoid membrane, the upper part of the pharyngeal incision, the muscles, and the transverse limb of the skin incision. A soft rubber feeding tube was then passed from the lateral incision into the œsophagus, fixed in position by a suture, and packed round with gauze. The patient stood the operation fairly well, but she was rather collapsed, no doubt owing to previous semi-starvation. She made good progress, the wound being kept sweet by daily dressing and syringing with hydrogen peroxide. August 3rd: Tube removed and replaced by one passing through the nose, the wound in the neck being allowed to granulate. This tube was kept in place for ten days, and as the wound was then nearly closed the patient was allowed to take food naturally, bougies being passed daily. Trouble then began owing to difficulty in keeping the stricture dilated, and on several occasions anæsthetics were needed in order to pass a bougie. Finally, as the stricture rapidly contracted in spite of all attempts to keep it dilated, and swallowing became extremely difficult, Mr. C. H. Fagge reopened the upper end of the œsophagus through the neck and passed a tube. Hoping that the continual swallowing movements would dilate the pharynx above the stricture, the patient was sent home on Oct. 10th. She was readmitted on Nov. 2nd, and endoscopic examination then proved that considerable dilatation had taken place, and after some little trouble a bougie was forced through the stricture, which was then dilated and a rubber tube passed through it from the nose and left *in situ*. The patient bore the inconvenience of the tube for ten days, when it was removed. From this time no further trouble had been experienced, the stricture having been kept dilated by passage of bougies. This was done three times a day at first, and the frequency gradually diminished, so that when she left the hospital on Dec. 10th she was having a No. 18 bougie passed once every two days.

and this she had continued to do herself since. The section of the growth which was exhibited showed it to be a typical epithelioma. The growth was removed as described, without sacrificing the larynx and without removal of glands, because it was clearly very recent, and, moreover, its free mobility on the underlying structures led Mr. Steward to hope that it was in the primary stage, so that local removal would give a fair chance. He would call attention to the extreme importance of not closing the wound after operations upon the pharynx. This method of wound treatment, although perhaps less artistic, was much the safer, for in this way the risks of secondary hæmorrhage and septic infection of the air passages were reduced to a minimum. The plan of administering the anæsthetic through a tube inserted into the cocainised upper opening of the larynx had proved very useful in these cases; it was quite convenient and satisfactory, and, moreover, avoided the risks associated with a tracheotomy opening. There was no sign of œdema of the glottis afterwards, although the mucous membrane was divided close to the arytenoids. The way in which the stricture was overcome by allowing the lower end of the pharynx to dilate was very striking, the extra amount of mucous membrane so formed being evidently sufficient to bridge the gap caused by the operation, as there has been no further difficulty since the final communication with the œsophagus was made.

Dr. FREDERICK LANGMEAD showed a case of Anomalous Œdema. The patient, a girl aged 18, since the age of 12 had suffered from an unexplained œdema. It began in the legs, the left being affected first. This leg had been encased in plaster-of-Paris at that time, and afterwards put up in a Thomas's knee-splint. There was no record to show why this was done, but the patient said that it had never been painful. When the plaster was removed the swelling recurred and was unaffected by splinting, but, on the contrary, a similar swelling began in the other leg. The ankles were affected first. She came under the exhibitor's observation in March, 1910, for a similar condition of the hands, at first in the left and shortly afterwards in the right. In the hands the swelling started on the dorsal aspects. The condition then found had persisted, but fluctuated considerably in intensity. Symmetrical œdema of all four limbs was present, accompanied by blueness, coldness, and sweating. The œdema was most marked in the legs and usually was confined below the knees, but had extended above on one or two occasions. Sometimes pitting could not be obtained by pressure; at other times firm pressure caused it. As in the legs, so also in the arms the œdema was most pronounced at the distal extremities. It lessened if the parts were raised, and increased if they were allowed to hang down. It was almost or completely absent in the morning, but gradually increased during the day, especially if the patient stood much. The dependent position of the arms during a washing-day was always followed by considerable swelling of the hands. The blueness was intensified by cold, to which she was very susceptible, but no sequence of events as occurs in Raynaud's disease was detectable. No redness, throbbing, or burning (suggestive of erythromelalgia) had been noted. The hands and feet were always clammy, not infrequently beads of sweat standing out from the skin, and were cold at the same time. Recently she had complained of swelling of the cheeks after meals, which subsided in an hour or so. She was very prone to septic sores. Any slight injury produced a sore, which exuded clear fluid freely, and a sodden, indolent ulcer resulted which healed with difficulty. Reddish-purple swellings had occurred occasionally in the œdematous regions, looking like chronic abscesses. A few of these had suppurated, but the majority subsided. On one occasion staphylococcus aureus, and on another a streptococcus, was isolated from the discharge. There was no sign of heart or kidney disease. The blood count was normal. The patient's general health was very good. She did her work as a general servant without trouble until the evening, when the swelling of her hands and feet caused her difficulty in holding small objects (such as a needle) and in walking. She was the only child; no history of any similar affection in the family could be elicited. The only treatment which had been beneficial was the use of elastic stockings. Thyroid extract had made no difference.

Dr. F. PARKES WEBER showed a case of Diffuse Symmetrical Lipomatosis. The patient was a man of good muscular physique, but had a number of soft subcutaneous swellings characteristic of diffuse symmetrical lipomatosis. These were situated on both sides, in the mastoid, parotid, deltoid, and inguinal regions, and also in the middle line, just below the chin, above the sternal notch, and over the symphysis pubis. They had been noticed first about four years ago, and were neither painful nor tender to palpation; neither did the patient suffer from rheumatic or other pains. The thyroid gland appeared to be well developed. The liver could not be felt, but there was a suspicion of commencing cirrhosis. The conjunctivæ over the sclerotics had a yellowish tinge. The urine (January, 1912) was of high colour, of specific gravity 1025, and free from albumin, sugar, and bilirubin. The patient had been accustomed to take much alcohol every day for years; he had severe pleurisy some years ago, and gout in both big toes about three years ago; he was subject to hoarseness; he denied having had any venereal disease, and said he had never noticed any sexual impotence; he had children living. The case was a good example of diffuse symmetrical lipomatosis occurring, as it generally does, in a man of robust build, who had been accustomed to rather free and habitual indulgence in alcohol.

Dr. PARKES WEBER also showed a case of Osteitis Deformans (Paget's Bone Disease) with Chronic Eczema. The patient, aged 70, presented the typical thickening and bending of tibiæ and femora characteristic of osteitis deformans. The disease was of only moderate degree and was limited to his lower extremities. The changes were first observed in the left tibia six years ago, and were best marked in that bone and the left femur. The eczema, to which he had been subject more or less for many years, chiefly affected his legs. The patient had enjoyed good general health usually, but had suffered twice from rheumatic fever, 40 and 20 years ago respectively. There was no history of venereal disease. Nothing abnormal could be discovered in the thoracic or abdominal viscera or in the urine. A noteworthy feature of the case was that there had been no pain connected with the bone disease.

Dr. GEORGE F. STEBBING showed a case of Persistent Nystagmus associated with periodical vomiting. The patient was aged 28. At the age of 21 he had had seven fits during one week, but had had no others. In these fits, of which he had no warning, he was unconscious and incontinent; he bit his tongue once and twice "bruised his eyes." Fifteen years ago the patient began to have pains in the lower and back part of the head, and these pains had remained since. Ten years ago one day he ate his tea with a good appetite and soon afterwards, without any feeling of sickness, vomited it; later, the same thing occurred with his supper. For several days he vomited everything he swallowed, and then regained his usual health. Ever since he had been subject to attacks of vomiting which lasted from a few days to six or eight weeks. These attacks were gradually becoming more frequent and more severe, and he stated that he had lost flesh considerably. During these attacks he sometimes felt sick, but in many of them he vomited without any sensation of sickness. Since these attacks of vomiting started he had had pain in the lower part of the abdomen; he stated that it was not relieved, but was occasionally made worse, by the act of vomiting. Three and a half years ago his friends told him that "his eyes were always moving about." Two years ago both his legs began to get weak so that he became unable to stand without support, and one year ago he "lost all feeling in them." The patient was thin, but did not appear to be markedly wasted. He had nystagmus, which was most marked while the eyes were at rest, and was of a mixed type, consisting of coarse horizontal movements with a fine rotatory movement superadded. The nystagmus was present in all positions of the eye, but was more marked when the patient was looking to the left than to the right, and was only slightly marked when he was looking up or down. There was a slight degree of hippus. The fundi were quite normal. The patient could read small newspaper print; he got tired after reading for about half an hour. There was marked loss of power in both legs, but very little wasting. Knee-jerks were present; the plantar reflexes were sluggish, but when obtained were both flexor. There was anæsthesia of both legs of the "stocking type." The Wassermann reaction was negative, and large doses of potassium iodide combined with mercury, administered for a period of six weeks, did not produce any change in the patient's condition.

Dr. HECTOR MACKENZIE and Mr. W. H. BATTLE showed a case of Hirschsprung's Disease: Congenital Dilatation of

the Colon. The patient, a girl, aged 9, was admitted under the care of Dr. Mackenzie into St. Thomas's Hospital on Nov. 27th, 1911. When a baby she had suffered from attacks of diarrhœa. Since the age of 4, when she had broncho-pneumonia, she had suffered from constipation. A year ago the constipation was accompanied by pain and vomiting. This occurred without any relation to food. She was treated for tuberculous peritonitis. The constipation and other symptoms had increased since that time, and had been bad for five weeks, a purgative being required every other night. The pain had been very severe at times, the child having been doubled up with it. On admission moderate distension of the abdomen was present, more marked on the left than on the right side, and most evident in the upper part. On inspection, particularly after palpation, slow waves of peristalsis were seen, most marked in the umbilical region, and seeming to travel from left to right, but also present over the descending colon and passing downwards, but without pain. A tympanitic note was obtainable all over the abdomen. Occasional attacks of pain accompanied the peristalsis later, occurring nearly every day, but varying in time of onset. The abdomen generally was larger than normal and the sigmoid was easily felt. X ray examination after giving a bismuth meal showed that it all went to the right side just above the iliac crest. Four days later, there having been one action of the bowels, there was still some bismuth low down in the mid-line of the pelvis.

Dr. HERBERT FRENCH showed a case of Tabes Dorsalis with one Knee-jerk Absent and the other Brisk. The patient had gonorrhœa when aged 16, for which he was treated for six weeks at St. Thomas's Hospital, but was not aware of having had a chancre. His wife had had one miscarriage, but no living child. The Wassermann reaction was positive. Five years ago he suffered from pain in his right foot, spreading thence to the right ankle, and after a few weeks upwards into the calf of the right leg; since that time he had been subject to shooting pains which were confined to the right leg, never affecting the left, and at the same time whilst the left leg felt to him normal, the right had become numbed, cold, and affected by a feeling which he described as one of uselessness, although objectively he could move it very well. Perhaps the most striking feature about the case was the fact that whereas the right knee-jerk was entirely absent, the left was not only present but was even brisker than normal.

Mr. BATTLE showed a case of Neuro-fibroma of the Supra-orbital Nerve in the Orbit.

Dr. WILFRED HARRIS and Mr. W. H. CLAYTON-GREENE read a paper on a case of Congenital Absence of the Left Half of the Diaphragm, simulating Pneumothorax.

LARYNGOLOGICAL SECTION.

Exhibition of Cases and Specimens.

A MEETING of this section was held on Feb. 2nd, Dr. STCLAIR THOMSON, the President, being in the chair.

The following cases and specimens were shown:—

Mr. HERBERT TILLEY: 1. A Specimen and Section of Discrete Angioma of the Nose, which had been removed from a young man, aged 17, who applied to hospital for severe attacks of nose bleeding, which had rendered him very anæmic and weak. 2. A case of Enlargement and Distension of the Bridge of the Nose in a patient suffering from Nasal Polypi and Pansinusitis. The upper regions of the septum were also thickened and considerable periostitis of the bones seemed to be present.—The PRESIDENT, commenting on the appearances, remarked that in the cases he had seen, as in the present case, there had been no evidence of syphilis.

Mr. J. EVERIDGE: A case of Ulcerated Growth of the Larynx with a Negative Wassermann Reaction.—In the opinion of most of the members the disease was regarded as a tuberculous deposit.

Mr. C. A. PARKER: A Thyroid Tumour at the Base of the Tongue in a girl, aged 16 years. The tumour was so large as to call for removal, but the apparent absence of any thyroid gland in the neck had led to hesitation in operating. The suggestions offered by members to avoid the difficulty were that the tumour might be dislocated from its buccal site to a position deeper in the tissues of the tongue, or that a partial excision only should be made.

Dr. W. H. KELSON: A Swelling in the Right Tonsillar Region in a woman, aged 24, with a hard mass at the angle of the jaw. The swelling also involved the lateral pharyngeal region above and behind the tonsil. The disease was generally regarded as inflammatory, possibly originating in a chronic suppuration of the ear from which the patient was suffering.

Dr. ANDREW WYLIE: A case of Paralysis of the Soft Palate dating from a sore throat several weeks previously. Repeated bacteriological examinations had failed to disclose the presence of the Klebs-Löffler bacillus, and several of the speakers referred to the elusive character of this organism as a fact which renders a negative finding of no value.

Dr. G. WILLIAM HILL exhibited a series of skiagrams illustrating (*a*) the palliative action of radium salts in malignant stricture of the gullet; and (*b*) the advantages of the X rays screen for accurately applying a radium apparatus in the strictured area.—Mr. TILLEY and the exhibitor drew attention to the importance of the necessity for the nicest precision in introducing and leaving radium in the œsophagus in cases of malignant stricture.

Dr. JAMES DONELAN: A singer, aged 44, with a growth on the Anterior Third of the Right Vocal Cord, which was regarded as a singer's node.

Mr. CHARLES W. M. HOPE: A microscopical section of a Malignant Columnar-celled Carcinoma of the Œsophagus from a man, aged 25 years. Attention was drawn to the occasional appearance of a columnar-celled cancer in a tube lined by squamous epithelium, and the mode of origin of such growths was adverted to.

Mr. NORMAN PATTERSON: A case of Abeyance of Nasal Breathing of Hysterical Origin, the speech being markedly affected.

Dr. E. A. PETERS: 1. A case illustrating the formation of Bilateral Symmetrical Perforations of the Palate in a case of syphilis. 2. Another case of Tumour of Right Lateral Wall of the Pharynx involving the Right Arytenoid in a woman, aged 27 years.—The advisability of the early examination of such cases by the direct method in order to exclude post-cricoid carcinoma was remarked upon.

Dr. G. C. CATHCART: A case of Sublingual Ulceration of the Floor of the Mouth.—It was considered by certain of the members to be septic in origin.

Mr. G. SECCOMBE HETT: A series of three cases illustrating Cysts of the Larynx. In one the cyst lay on the lingual aspect of the epiglottis; in the second on the vocal cord; while in the third a cyst, or cystic fibroma, was to be seen on the right arytenoid.—Discussing the treatment of laryngeal cysts, several members expressed a preference for the galvano-cautery as compared with their removal by means of forceps.

Dr. J. DUNDAS GRANT: A woman, the subject of Tuberculosis, with an outgrowth from the lower pole of one tonsil.

SECTION OF ANÆSTHETICS.

Chloroform Poisoning.

A MEETING of this section was held on Feb. 2nd, Dr. W. J. MCCARDIE, the President, being in the chair.

Dr. R. S. FREW, in a paper on the Significance of Acetonuria in Children, showed that acetonuria was produced in the child by mere changes of diet; further, that the duration of the acetonuria was about three days, that it was more marked the younger the child, being 100 per cent. in babies changed from breast to artificial feeding and 46 per cent. in children 11 and 12 years of age, the average of all children below 12 years of age being 61 per cent. He further pointed out that by giving dextrose this acetonuria could be made to disappear at any stage within 12 hours, and that the carbohydrate starvation necessary for its production was caused by the digestive instability of children. He drew attention to acetonuria being invariably produced by gross starvation in about 12 hours. It was maintained that both these conditions obtained in the preparation of the child for anæsthesia, and that this was sufficient to account for the high percentage of acetonuria *after* anæsthesia recorded by various observers, which ranged from 63 to 89 per cent. Dr. Frew pointed out that this acetonuria could be prevented by the administration of dextrose up to and after the administration of the anæsthetic, thus avoiding what must be regarded as an additional risk.

A paper was read from Dr. A. L. M. MUSKENS, of Bergen-op-Zoom, Holland, describing the results of some experiments

on rabbits, made to investigate the after-effects of chloroform. Twenty-five rabbits were kept under chloroform for from one to two hours. Tables were shown illustrating the tissue changes in eight rabbits which died from the effects of the anæsthetic at periods of from 22 to 100 hours, and in eight others which were killed at periods of from three hours to five days after the administration. In the first group all the cases, except one where chronic myocarditis was the cause of death, showed advanced fatty degeneration of the liver amounting in most instances to complete central necrosis; in the rabbits in the second table (except in one case killed immediately after the operation) fatty degeneration was also found, but to a somewhat less-advanced degree than in the first group. Changes in the kidney and heart tissues were much slighter and more variable. Dr. Muskens considered that the liver degeneration was due to the chloroform and was the cause of death in the fatal cases. He suggested that fat and oil should be avoided before an anæsthetic, either in food or drugs, and that cholagogues might be useful afterwards in so far as they tend to remove fat as well as bile from the liver.

Mr. R. E. APPERLY showed some microscopic specimens from livers of rabbits and also of human subjects illustrating the after-effects of chloroform. The rabbits had been kept under chloroform for half an hour daily for several days, and subsequently killed; in one of the human cases the patient had had two anæsthetics at a short interval, the first ether, the second chloroform; he died shortly after the second administration from cerebral hæmorrhage unconnected with the operation or anæsthetic. All the specimens showed fatty changes. Mr. Apperly pointed out that acetonuria occurs after anæsthesia in nearly all cases; after ether the amount is much greater, but falls to the minute trace which may be considered normal in one day; after chloroform the rise is less, being as 20 to 50, but persists in a gradually diminishing degree for four days. This was doubtless to be explained by the fact that chloroform has much more effect upon the kidney than ether and delays excretion. In severe post-anæsthetic vomiting little acetonuria is generally present; when the vomiting stops the acetonuria increases.

Dr. A. L. FLEMMING agreed with the last speaker in regard to the respective effects of ether and chloroform upon the kidney. He stated that in 68 cases where careful examination of the urine had been made far more kidney cells were found after chloroform than after ether, and fatty changes were also present. Acetonuria frequently existed in cases where there was loss of fluid—i.e., vomiting—and he found that where a previous injection of saline had been given there was generally little acetonuria or unpleasant after-effects.

The PRESIDENT read notes of a case of Chloroform Toxæmia after an operation for Cleft Palate on a child aged 2½. The operation was difficult and lasted one and a quarter hours. The anæsthetic was borne perfectly and but little blood was swallowed. At night the child was much collapsed and remained seriously ill all next day, but gradually improved. The palatine flaps sloughed. The same child had had an operation when 12 months old, which was followed by prolonged vomiting. It was noteworthy that this child could not tolerate fat in any form. Cod-liver oil invariably upset him and starchy foods had the same effect. He was subject to attacks of "liver-chill," accompanied by vomiting and diarrhœa. At a subsequent operation ether had been administered for half an hour with no after-effects.

Dr. J. H. THURSFIELD referred to a series of post-anæsthetic deaths which had occurred at the Hospital for Sick Children, Great Ormond-street, in 1907, the causation of which was still under investigation. These deaths occurred under varying conditions and were not to be explained either by the anæsthetic used, the methods of administration, or the preparation of the patient. He thought there was an additional factor still to be discovered. Acidosis occurred in all cases, and in a few passed into acid intoxication. Children operated on in the out-patient room, whether prepared or not, showed reaction next day in 100 per cent. of the cases. Those operated on four or more days after admission were not found to react differently from those operated on immediately. He considered that dextrose had no effect whatever on acid intoxication. Sodium bicarbonate gave better results. He did not believe that the condition of the liver was causative or peculiar to the condition under discussion. The same changes were found in many diseases with quite different symptoms.

Dr. G. W. GOODHART did not agree that the liver changes found in acid intoxication were the same as those in other diseases. He thought that the clear differentiation of three zones was characteristic and not found in other conditions. He doubted whether there was any fatty degeneration of the kidney; this was difficult to prove as fat occurs in quite healthy kidneys.

Mr. G. E. WAUGH objected to the name post-anæsthetic poisoning. None of the cases referred to above had occurred among his cases, and he attributed this largely to his method of preparation. He had abolished purging and preliminary starvation, merely substituting the operation for a meal. He gave a large dose of soluble carbohydrate both immediately before and after the operation. He considered dextrose better than sodium bicarbonate, and instanced two cases where the patients' lives had apparently been saved by the use of the former.

Dr. J. F. W. SILK agreed with Mr. Waugh that the name should be dropped. Post-operative acetonuria depended on a complicated series of conditions. He thanked the members of the staff of the Hospital for Sick Children for their kindness in giving valuable information to the section.

WEST LONDON MEDICO-CHIRURGICAL SOCIETY.—A pathological meeting of this society was held on Feb. 2nd, Mr. W. McAdam Eccles, the President, being in the chair.—After the formal opening business of the meeting the President proposed that a vote of condolence should be sent to Lady Butlin on her recent bereavement. As a society they felt that loss, for Sir Henry Butlin had been for many years a member with them, and they had recently elected him an honorary member.—The President showed a number of specimens of so-called "Dermoid Cysts" of the Ovary, all of them exhibiting the presence of teeth. He discussed their probable origin, whether they were true teratoma, an epithelial inclusion, or a kind of unisexual development. He inclined to the first hypothesis.—Mr. Aslett Baldwin showed a specimen of Teeth from an Ovarian Dermoid in which the number and perfection of the teeth were remarkable.—Mr. Hopewell Smith, in commenting on these specimens, said that microscopic examination of these teeth usually showed that the hard tissues were mal-formed and the dentinal tubes irregular in arrangement.—Mr. Aslett Baldwin showed, amongst other specimens, a radiograph of Fractured Neck of a Femur with screw uniting the bone in position. The case was that of a man, aged 40 years, who fell from a cart. The fracture caused a shortening of two inches. The shortening was reduced by an apparatus which permitted screw traction on the limb, and when perfect length had been secured the steel screw, shown in the radiograph, had been driven through the trochanter into the neck and head of the bone. The whole was secured by a plaster mould.—Mr. Walter E. Fry showed a Decidual Cast from a case of Extra-uterine Gestation. A multipara, aged 26, missed one period. A fortnight later there was sudden violent pain about the left ovary. She was examined under chloroform but nothing abnormal was found. A week later the cast was passed and she recovered. Sections of the cast showed decidual cells of maternal origin but none of fœtal origin. Mr. Fry asked if there was a conception, where was the fœtus?—There was a discussion on this case in which Dr. H. J. F. Simson, the President, and Dr. Julius M. Bernstein took part.—Dr. Bernstein showed a number of specimens of recent cases of fatal visceral disease. Some of these led to valuable discussions. One was a case of Acute Infective Endocarditis in a man aged 40. The patient had been seen by Dr. L. C. T. Dobson, who said that the man's first medical attendant had considered the case one of cerebro-spinal meningitis; ten days later the medical man fell ill with the same symptoms. Dr. R. J. Reece, of the Local Government Board, inclined to the same diagnosis, but examination of fluid obtained by lumbar puncture in both cases proved that both were suffering from pneumococcic infection. The man died and the medical man recovered. Dr. Bernstein considered endocarditis was a late secondary lesion, for there were no heart symptoms pointing to it.—There was shown for Mr. L. A. Bidwell Masses of Soft Fibroma or Fibro-lipoma, which formed a retro-peritoneal tumour; the symptoms pointed to the presence of a hydatid.—The President said that diagnosis of these cases was difficult, and that occasionally the growth

attained a huge size.—Dr. Bernstein showed a film preparation of pure Klebs-Löffler Bacillus taken from a case of Membranous Rhinitis.—Dr. F. G. Crookshank said that these cases were not uncommon, although rarely recognised except by nose specialists. The symptoms and sequelæ were not severe as a rule; he thought that was due to the absence of mixed infection.—Dr. A. C. D. Firth showed a specimen of Ulcerative Endocarditis, due to general pneumococcal infection, in a child aged 3 The examination of hospital reports for nine years only showed the occurrence of one other similar case at this early age.—Dr. Reginald Morton showed skiagrams of cases examined with other physicians. One, with Dr. H. Pritchard, was of a case of Aneurysm of the Arch of the Aorta; the shadow of the aneurysm and the obstructed mass of a bismuth meal in the œsophagus could be seen. Other plates were of a case of Gastroptosis, under the care of Dr. Bernstein. The progress of the bismuth meal in its various stages was shown, and the site of the delay noted.—Dr. Simson showed cases illustrating the difficulties to be met with in the diagnosis of cancer of the uterus. There was a typical cauliflower growth of the cervix in which diagnosis was unmistakable; one of intra-cervical growth of most malignant character, but causing few symptoms; another of a uterus removed in a case of pyometra and grave symptoms simulating carcinoma of the body of the uterus, all of which were due to a fibroid in the posterior wall causing obstruction.—Dr. E. A. Saunders and Mr. Bidwell showed a specimen of Pyloric Ulcer removed by partial gastrectomy with excellent results.—Dr. Alfred Eddowes showed photographs illustrating diseased conditions of the nails: (1) Psoriasis; (2) Overgrowth and Deformity of the Great Toe Nails due to Injury; and (3) a Rare Condition of the Nails of Hands and Feet that had been thought to be Ringworm.

LIVERPOOL MEDICAL INSTITUTION.—A meeting of this society was held on Feb. 8th, Mr. R. Jones, the President, being in the chair.—Dr. J. Hill Abram read a note on two cases of Œdema of the Orbit. The first case was a man, aged 30, who had swelling in the neck and in the right orbit, a naso-pharyngeal discharge of muco-pus, and just before death a violent epistaxis. A post-mortem examination showed necrosis of the pituitary body, with enlargement and œdema of the lymphatics of the right side of the neck; no growth was found, and the tissues were not further examined. The second case was in a robust man aged 53. His illness began with pain in the right temple, swelling in the right eye, and a rise of temperature. The orbit was incised. At the post-mortem there was exudation at the base of the brain, pus in the cavernous sinuses, thrombosed veins, and an actinomycotic mass in the orbit. Two difficult points to decide were: how the organism gained access to the body, and what was the source of the infection. The mouth, teeth, and the intestinal canal, and even the skin, had been suggested as points of entry. The infection might come from domestic animals or from foreign bodies, such as straw or splinters of wood. As the organism was found in carious teeth it was possible that it led a saprophytic life. Dr. Abram suggested that further investigation was needed to decide whether the organism was anaerobic in man and aerobic in nature. He could find no conclusive evidence of infection from man to man or from cattle to man.—In the discussion that followed Dr. J. Lloyd Roberts mentioned a case of œdema of the orbit with œdema of the rectum, in which an organism similar to the bacillus of diphtheria was found. The patient was given anti-diphtheritic serum, with the result that the swelling began to disappear in 15 hours, and in a few days the patient was quite well.—Mr. C. A. Adair Dighton referred to a case of actinomycotic meningitis following excision of the right eye for panophthalmitis after injury. In this case there was no œdema of the orbit.—Dr. C. O. Stallybrass suggested milk as a vehicle of infection, as the disease had been found in the udder and the organism in milk.—Dr. Lloyd Roberts opened a discussion on Colitis from the medical side. He reviewed our knowledge of the subject, and especially referred to Dr. Hale White's investigations, which began about 24 years ago. Dr. Lloyd Roberts commented on the increase in frequency of the disease as well as of appendicitis since then.—Mr. F. T. Paul opened the discussion on the surgical side. He used two operations—appendicostomy for the milder cases and right lumbar colotomy for the more severe. A small incision gave access to the appendix; its base was anchored by fishing-gut sutures, and a narrow rubber tube or pointed catheter was passed into the colon at the first operation. If left to a later stage difficulty might be found owing to the shrinkage which took place in the appendix. Right lumbar colotomy was a difficult operation; opening the peritoneum did not much matter but it was important not to undermine it or injure the duodenum. He did not make as much of a spur in these cases as in other colotomies. He began systematic washing out of the bowel about two weeks after the operation and did not find that antiseptics made much difference.—In the discussion that followed Dr. T. R. Bradshaw claimed for castor oil in small doses an almost specific action in cases of colitis.—Dr. S. M. Whitaker spoke of the treatment by electric enemata, by lactic acid cheese, and by enemata of allantoin.—Mr. R. W. Murray said that in the first wash-out it was important not to use a larger quantity of fluid than half a pint, as large amounts sometimes caused collapse.—Dr. C. J. Macalister spoke of the connexion between colitis and rheumatoid arthritis. Common paraffin had been found useful as it formed a coating in which organisms could not live. He had found simaruba and pomegranate bark useful in these cases.—Dr. C. L. Williams, Mr. G. P. Newbolt, Mr. Colin G. Campbell, Dr. D. Moore Alexander, and Dr. O. T. Williams took part in the discussion.

GLASGOW MEDICO-CHIRURGICAL SOCIETY.—A meeting of this society was held on Feb. 2nd, Dr. A. Freeland Fergus, the President, being in the chair.—Lieutenant-Colonel Sir William Leishman, R.A.M.C., delivered an address on Anti-typhoid Inoculation. After reviewing the history of the subject, the speaker referred to various methods of preparing anti-typhoid vaccine, and described that employed in the British Army. The strain of typhoid bacilli used was one the virulence of which had by long culture been greatly diminished. From sub-cultures of this strain, grown for 36 hours and killed by exposure for an hour to a temperature of 53° C., the present vaccine was prepared. Careful tests were made to ensure the sterility of the vaccine before its issue for use, and no instance had occurred of sepsis attributable to it. Standardisation of the vaccine was effected by counting the number of bacilli present along with a known quantity of normal blood the plasma of which had been replaced by saline solution. The doses usually given were an initial dose of 500,000,000, and, ten days later, a second dose of 1,000,000,000 of dead bacilli. If a single dose only could be given it was one of 1,000,000,000. Experience in England and in India quite dispelled the idea that owing to the development of a negative phase, with increased susceptibility to infection, persons inoculated in presence of an epidemic of enteric fever ran more risk than the non-inoculated of contracting the disease. On the contrary, inoculation proved highly protective. As to the conditions under which anti-typhoid inoculation ought to be carried out as a prophylactic measure, in civil life all persons in attendance on cases of enteric fever and, on the occurrence of enteric fever in any large institution, all the inmates should be inoculated. In the army, even in time of peace, enteric fever was certain to be introduced either by recruits (typhoid carriers or men incubating the disease) or from the surrounding population; and in time of war even the best sanitary organisation was powerless to ensure protection from infection. All recent military experience showed the enormous incidence of invalidity and very high death-rate from this cause. The benefits resulting from anti-typhoid inoculation were strikingly shown by the statistics of enteric fever among British troops in India. For 15 years prior to 1907 the annual number of admissions had averaged 1406, with an average of 353 deaths. In 1905 anti-typhoid inoculation was introduced as a voluntary measure, and while at first not largely utilised, was by 1907 being taken advantage of by the troops in increasing numbers. Since that date the admissions from enteric fever had fallen steadily till in 1910 they numbered only 296, with 45 deaths. Recent experience with a large body of United States troops stationed on the Mexican frontier, among whom anti-typhoid inoculation was compulsory, proved the almost complete protection which this measure afforded the soldiers. Many observers had also found that anti-typhoid inoculation was of value, not only in prophylaxis, but also as a therapeutic agent in cases of enteric fever, and the speaker believed that for this purpose a stock vaccine was more effective than an autogenous one.

Reviews and Notices of Books.

Prehistoric Man. By W. L. H. DUCKWORTH, M.A., M.D. Cantab., Sc.D. Cambridge: The University Press. 1912. Pp. 156. Price 1*s.* net.—This little book is one of the Cambridge Manuals of Science and Literature, issued by the University Press under the general editorship of Dr. Giles, the learned master of Emmanuel College, and Professor Seward, the professor of botany in the University. It displays the arguments to be relied upon in speculation upon the origin of the human race, and in its closing chapter, which takes note of the bearings of recent discoveries, the conclusion is reached that up to a certain point the evidence is strikingly favourable to the hypothesis of evolution, defined as "the gradual development of the modern type of skeleton found in association with a large and active brain capable of manifesting its activity in a great variety of ways." The time factor, as the author points out, is the greatest difficulty as yet which those who want to make definite statements have to face, and he illustrates the risk of forming conclusions on the subject by noting that in 1904 Professor Rutot assigned a duration of 139,000 years to the Pleistocene period, while five years later Dr. Allen Sturge claimed 700,000 years for a portion only of the same period. We recommend this admirable little manual to all our readers, and not only to those who take a practical interest in palæontology, for any medical man may find himself actually in need of practical information on the subject now that excavations, accidental as well as purposeful, are becoming fruitful. Much of the material evidence upon which the theories concerning the human pedigree are based consists of detached skeletal fragments; the more of these that come to light the greater grows the chance of filling up the immense lacunæ in our knowledge of the human pedigree; and no one is so likely as the medical man, usually the only anatomist in the community, to be able to indicate how far any discovery of bones has a genuine historic bearing.

Who's Who in Science (International), 1912. Edited by H. H. STEPHENSON. London: J. and A. Churchill. Pp. 323. Price 6*s.* net.—This book may be described as an endeavour to fill to some extent among English books of reference, for scientific workers and others, the place as a handbook of the international academic world that is occupied in German by the well-known *Minerva*. It contains a tabular list of the world's universities, with the names of their senior professors (only) in the various faculties of the natural sciences, pure and applied, and a biographical directory of all who have academic office. The objective sciences alone are dealt with, the humanities and such borderland branches of knowledge as economics, sociology, psychology, education, and exploration being excluded, though the names of many of the leaders therein appear, inasmuch as their work often overlaps the natural sciences. The list of the world's universities is meagre, only 134 being given. This list does not include a single one of the universities in South America, there are many omissions of universities in the United States, and important European universities also are left out. It is not clear whether the note, stating that "any omissions in this list are due to the university in question not replying to our communication," is intended to cover the absence of all reference whatever to certain universities, or merely to account for certain lacunæ in the information given as to the *personnel* of some of the universities that are included in the list. But even in the latter case we note the omission, in the biographical part, of names which appear in their proper places in the university tables, whose owners have certainly done work that, in our opinion, should entitle them to a place in the biographical part. We welcome the book, however, as an instalment of a work that has long been needed, which we have no doubt will be brought more fully up to date with each succeeding issue.

Some Factors Influencing Health in Tropical and Subtropical Countries. By T. GERALD GARRY, M.D., M.A.O., M.Ch.R.U.I. London: John Bale, Sons, and Danielsson, Limited. 1911. Pp. 96. Price 2*s.* 6*d.* net.—This small handbook should prove of interest to travellers and others about to journey in the tropics or to those already residing in those regions. The work is subdivided into four sections. The first deals with general considerations and bacillary and parasitic diseases, and discusses the type of man and woman suitable or otherwise for residence in tropical countries. The causes of tropical disease and the food and drinks to be used in warm countries are passed in review in the second section. Recommendations with regard to clothing, exercise, and ablution form the more important subject matter of the third section, while the prevention of disease is discussed in the last. The author states that the contents of the handbook have already appeared as a series of articles, and at the request of some friends interested in tropical hygiene he has been induced to publish them in their present form. The work is dedicated, by permission, to Lord Kitchener.

Guide to the Pathological Specimens of the Organs of Generation in the Female, Museum Royal College of Surgeons. By ALBAN H. G. DORAN, F.R.C.S. Eng. Illustrated. London: Taylor and Francis. 1912. Price 6*d.*—This guide has been compiled by Mr. Alban Doran to assist visitors to the Museum who make use of the series illustrating diseases and injuries of the female organs. While the catalogue is mainly devoted to analytical descriptions of individual specimens, the Guide consists of a summary of general pathological conditions, and indicates how they are illustrated by the individual specimens. The Guide is illustrated by some good figures taken from various sources, and it forms an interesting *résumé* of the contents of this portion of the Museum.

Nisbet's Medical Directory, 1912. In two parts. Part I., Directory of Medical Practitioners. Part II., The Local Directory. London: James Nisbet and Co., Limited. Pp. 906. Price 8*s.* 6*d.* net.—Nisbet's Medical Directory this year appears with two marked improvements. In the first place it is printed on better paper and in clearer type, and in the second the Christian names are given in full, instead of by initials only. The importance of this last point only those who have to identify a particular unknown medical man out of a group all bearing the same patronymic and not infrequently the same initials can appreciate. There is much to be said in favour of a purely alphabetical directory also.

Cocoa and Chocolate: Their Chemistry and Manufacture. By R. WHYMPER. London: J. and A. Churchill. 1912. Pp. 327. Price 15*s.* net.—How remarkable has been the growth of the cocoa industry since the cacao bean was introduced into Europe in 1528 by Cortes, the conqueror of Mexico, is made interestingly evident in Mr. Whymper's "Cocoa and Chocolate: Their Chemistry and Manufacture." This is a comprehensive work dealing with every stage in the production of cocoa from the time that the bean is plucked from the cacao tree to the point at which it becomes finished powder—cocoa, as the public know it. Analyses are furnished of the cocoas upon the market, as well as of the changes which the raw material undergoes at various stages of its manufacture, those, for example, which occur during fermentation, drying, and roasting. The story is a very interesting one, and now that cocoa has become an important

and a favourite article of food in the daily diet, besides forming the foundation of a universally appreciated and wholesome sweetmeat, it is desirable that we should possess an authoritative book of reference upon the subject. We should like to have heard from Mr. Whymper something more about the alkalinity of cocoas. He seems to conclude that because the ash of ignited cocoa is alkaline alkali is added. We have found in certain Dutch cocoas no free alkali at all, but the ash was excessive and strongly alkaline. This suggests the addition not of alkali, but of organic salts, which burn into alkaline carbonates.

JOURNALS AND MAGAZINES.

Jahreskurse für Aerztliche Fortbildung. Munich: Lehmann. Price 16 marks per annum.—The November number of this Annual Post-Graduate Medical Course is devoted to a consideration of the diseases of the special senses, eye, nose, and ear. It is, of course, difficult to adapt a general review of medical progress to these subjects. Either so much detail will be given that the general practitioner is bewildered, or so little that the article is useless to the specialist. The authors of the present number have merely selected a few subjects in each specialty, but even with this limitation there are so many things treated of in such a short space that the whole is less useful than other numbers of this most valuable journal.

Professor L. Bach, who writes about sympathetic ophthalmia and squint, holds that the modified ciliary nerve theory of Schmit-Rimpler best explains the former condition. That is to say, it is the reflex result of ciliary nerve stimulation by the exciting eye, and this causes a disturbance of circulation which lays the sympathising eye open to the attack of infective material. In this process, too, anaphylaxis is held to play an important part. Whilst removal of the exciting eye is the only remedy, large doses of salicylates are regarded as having some power to avert the disaster. In speaking of squint, the author gives the teaching now current in most English text-books. Correction of errors of refraction is to be sedulously pursued in the first years of life, and operation resorted to only after the tenth year, when glasses have failed to cure. Advancement operations are more highly commended than tenotomies. In divergent strabismus an operation is usually necessary because nerve factors are much more important than errors of accommodation in its origin. Professor von Eicken writes about diseases of the nose and discusses the recent advances in diagnostic methods, especially in the use of adrenalin preparations to cause shrinkage of the vascular mucous membrane, and the demonstration of the varying conditions of the air cells by means of the X rays. The innumerable modifications of the operation of submucous resection of the septum are regarded as evidence of the inexperience of their authors. Operation is said to be very rarely required in the acute stage of sinus suppuration, and much less often in chronic stages than is generally practised. Professor Werner Kümmel writes about diseases of the outer and middle ears. The relation of otitis to general infections—e.g., pneumonia, meningitis, and diphtheria—is discussed, and it is urged that it is often merely a part and not the cause of such a general infection. He gives a short but most useful account of the various inflammatory conditions of the middle ear and mastoid, with their appropriate treatment.

The December number is devoted to general surgery and to accidents, and it forms, perhaps, the most valuable number of the whole year. Professor Payr writes about the modern position of the surgery of the stomach. And first as regards ulcers. The pathology of gastric ulcer is a subject of great complexity. Many factors are potent in its causation and usually more than one is necessary to bring it about. These may be grouped as follows: 1. Lesions of blood-vessels. Thrombosis caused by local irritation and embolus from some focus of portal infection. Sclerosis of blood-vessels with a proliferation of the intima. An area of vessels may be closed by spasm. The injections of hot salt solutions, formalin, alcohol, and adrenalin solution into the stomach vessels have caused chronic ulcers in animals. 2. Nerve lesions. Division of the vagi causes typical gastric ulcers, which show very varying tendency towards healing. 3. Chemical changes. It is a matter of uncertainty whether these are the cause or the effect of ulceration, but they certainly disappear after the excision of an ulcer. 4. Trauma and bacterial infection are very rare and doubtful causes when acting alone. 5. Toxic agencies. Appendicitis may cause either hæmorrhage from the mucous membrane or actual ulceration. 6. Anæmia. This cannot cause ulcer in the absence of other contributory factors. 7. Predisposing conditions—e.g., asthenia, enteroptosis, dyspepsia, &c. The relationship of chronic ulcer to cancer is regarded as very important. Various authors state that the proportion of cases of cancer that are derived from pre-existing ulcer is anything between 25 and 71 per cent. The locality of the ulcer is often indicated by that of the pain. Right-sided pain is due to an ulcer of the pylorus, left-sided to an ulcer of the lesser curvature, and pain in the back to an ulcer adherent to the pancreas. About 75 per cent. of cases of gastric ulcer cause occult bleeding, which can be discovered only by special examination of the vomit or motions. The delay in emptying the stomach, which is so often seen with gastric ulcer, may be the result of spasm or of stenosis of the pylorus. Examination by the X rays after bismuth feeding reveals the size, shape, and position of the stomach, and also any alteration in contour, the rapidity of emptying, the manner of peristalsis, the presence of adhesions, and the existence of hour-glass constriction; but much experience is required in the interpretation of the X ray findings. Jejunostomy and gastrostomy are of value in certain cases of rupture of gastric ulcers, for the purpose of feeding. In the latter operation a tube is passed right through the pylorus into the duodenum. In the treatment of gastric hæmorrhage atropine is of some value as it paralyses the stomach movements. In the treatment of gastric ulcer, apart from its complications, only the chronic cases require surgical interference, and excision of the ulcer or resection of the part of the gastric wall containing it is held to be superior to gastro-enterostomy.

Professor Borchardt writes about Appendicitis, referring especially to those points still in dispute. The existence of epidemic forms of the disease is regarded as not yet proved, but the prevalence of the disease at certain times and in certain places is very noteworthy. About four-fifths of all persons dying between 60 and 70 are said to show lesions indicative of a past inflammatory condition in the appendix. Figures are given for the comparison of the results of the most conservative and the most active treatment. In the former the mortality is 9 to 12 per cent.; in the latter 6 per cent. Although the second attack is much less dangerous than the first, it is quite unjustifiable to postpone operation in order to wait for an interval or a second attack. Everything points to the advantage of the early operation. It is less dangerous, there is no septic peritonitis and no complications, the wound can be closed, and there is no fear of hernia, whilst the recovery is smooth and rapid. By the early operation is meant one done within 48 hours of the onset. Towards the end of the second day the fate of the peritoneum round the appendix is decided, but it cannot be predicted

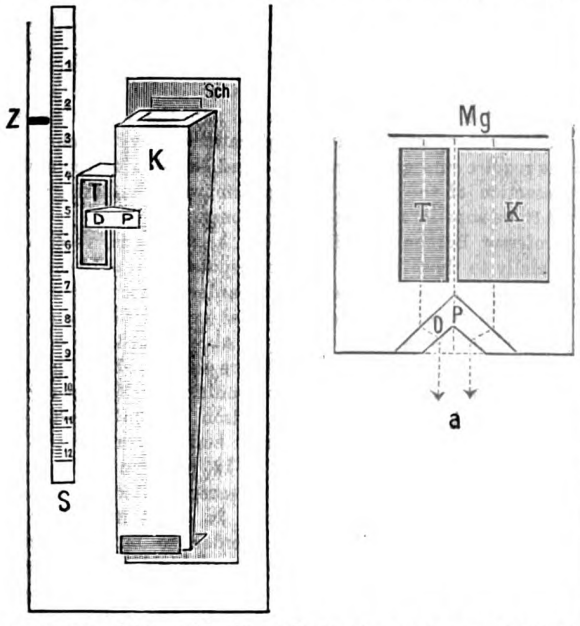
before this time. In seeing the early cases, care is required in the diagnosis from pneumonia, enteric fever, cholelithiasis, and renal calculus. Local tenderness and muscular rigidity are the signs of the greatest importance, and the presence of leucocytosis is often of value. Operation during the intermediate stage of the disease remains the most debateable question. The author holds that it is indicated only when there is distinct evidence that the patient is becoming worse, its disadvantages being the difficulty of finding the appendix, buried in firm adhesions, and of dealing with it adequately, whilst there is great risk of septic embolus and of fæcal fistula. As regards the interval operation, it is held that in the case of those aged from 40 to 45 the liability to a second attack is so slight that they may well wait without operation if they have recovered from a first attack. Late cases with peritonitis should be operated on before the distension indicating intestinal paralysis has occurred. All are now agreed that these cases require rapid and simple procedures, with removal of the appendix and closure of the parietes round the drainage-tube. The author agrees with Rehn, Korte, and Kümmell in using irrigation to flush out the abdomen in general peritonitis. He also advises the raised position of the body with the use of continuous rectal infusion of salt solution.

Professor Thiem writes a short but suggestive article on the relation of cancer and tubercle to injury.

New Inventions.

THE UNIVERSAL COLORIMETER.

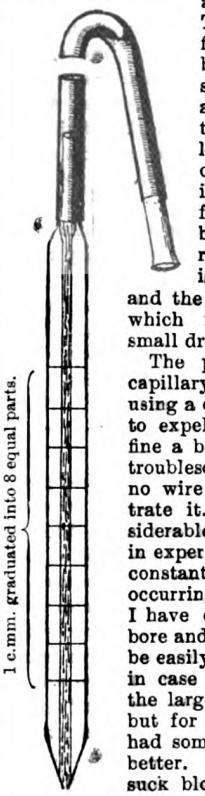
WE have had an opportunity of examining this apparatus and we think that it is one of the most compact and ingenious colorimeters we have seen. The standardisation depends upon a hollow glass wedge (K) containing the standard colour, the solution under examination being placed in a trough (T). By means of a screw the wedge can be moved up or down, and that part of it coinciding with the solution under test in the trough brought



in juxtaposition with it, and so an exact agreement in colour between the two can be arrived at. The point is registered on the scale (Z). Mg is a milk glass plate which provides the background for the colours, and D P is a double plate which serves to bring each colour into equal fields. There is no separating line between the two colour surfaces; the trough has parallel walls; the reading is done through a small slit; the wedge remains calibrated once and for all. It is applicable to the determination of hæmatin and iron in the blood, of iodine in the thyroid gland, of creatin, sugar, and indican in the urine, and a number of other reactions dependent upon the production of colour. It has also a wide application in the arts and industries in which colour is a guide to grade or quality. The universal colorimeter was exhibited to us by Messrs. F. Hellige and Co., of Freiburg in Breisgau, but we understand that it may be obtained in this country from the usual dealers in scientific apparatus.

A NEW BLOOD-COUNTING PIPETTE FOR ESTIMATING THE NUMBERS OF LEUCOCYTES AND BLOOD PARASITES PER CUBIC MILLIMETRE.

THIS pipette was devised to facilitate an extensive research on the enumeration of parasites in the blood in cases of malarial fever and sleeping sickness. The pipette is about 5 inches long and is made of glass tubing similar to that used for thermometers, with a white opal background and powerful magnifying surface. The capillary bore, however, is not flattened out like that of a thermometer, but is more nearly circular in cross section. The bore is exceedingly fine and hair-like—such that a portion of the capillary about from 60 to 70 mm. long has a capacity of 1 c.mm. This cubic millimetre length is graduated into equal parts, so that a given fraction of a cubic millimetre of blood can be accurately blown out. A rubber tube with a glass mouthpiece is attached to one end of the pipette, and the other end tapers to a very fine point, which is necessary for expelling accurate small droplets of blood. (See diagram.)



The pipette possesses about the limit of capillary fineness for blood work, because in using a capillary of less diameter it is difficult to expel the blood (which clots quickly in so fine a bore). When this clotting occurs it is troublesome to clear the pipette, as there is no wire fine enough or rigid enough to penetrate it. Even with the bore employed considerable care and practice are required; but in experienced hands the pipette may be used constantly for months without any blockage occurring. In view of the above difficulty, I have devised a similar pipette with a larger bore and graduated to ¼ c.mm. This latter can be easily penetrated by a fine wire and cleaned in case of a stoppage. Such a pipette (of the larger bore) may be preferred by beginners, but for quicker work and for those who have had some practice the ⅛ c.mm. pipette is the better. To enumerate leucocytes or parasites, suck blood into the pipette and expel ⅛ c.mm. on to a glass slide. Breathe on the slide to keep blood moist, and spread the latter with pricking needle into a small square about 4 × 4 mm. Stain this small ⅛ c.mm. blood film in the usual way. To estimate the number of required objects in this film, one must have a mechanical sliding stage and a square diaphragm in the eye-piece. All the leucocytes or parasites in the film may be counted, or the number may be calculated from the numbers found in two or three sample bands taken across the square film.

Fuller instructions for use are supplied with the pipette, which is manufactured by C. Baker, 244, High Holborn, London, W.C.

DAVID THOMSON, M.B., Ch.B. Edin., D.P.H. Camb.
Liverpool.

CHARING CROSS HOSPITAL MEDICAL SOCIETY.—A kinematograph display of bacterial processes will be given in the Out-patient Hall of Charing Cross Hospital on Tuesday, Feb. 27th, at 5 P.M., to which all students and medical men are invited. Members of the profession who desire to be present should communicate with the honorary secretary, Mr. Kenneth V. Smith.

THE LANCET.

LONDON: SATURDAY, FEBRUARY 17, 1912.

Lord Lister.

FULL of years and honours, the greatest Englishman of the nineteenth century has gone to his rest. We claim this position for Lord LISTER, not only by reason of his actual achievements in the preservation of life and in the relief of suffering, but still more by reason of the qualities of intellect and of character which rendered those achievements possible; qualities among which an absolute devotion to the ascertainment of truth was perhaps the most conspicuous. To him, as to the few philosophers of approximately equal rank who have preceded him, an established truth was a possession too inestimable to be measured by ordinary standards of value; and no pains, no self-sacrifice, could be too great to be spent in its attainment. He had the signal advantage, as regards contemporary fame, over the only men who could be mentioned as his intellectual peers, over NEWTON, over THOMAS YOUNG, over DARWIN, that the problems to which he addressed himself were of direct and immediate bearing upon the welfare of the human race, and that his solution of them placed him at once in the forefront of human benefactors. Those problems, and especially the central one among them, the cause of decay and putrefaction in wounds, and the reasons why these changes were more prone to occur when wounded persons were collected together within a limited space, had occupied the minds of many keen observers at many times and in many countries; and WILLIAM CLOWES, the great English surgeon of the sixteenth century, has left behind him not only a description of the conditions which could scarcely be surpassed, but also a lucid statement of the reasons which forbade him to accept the belief that they were due to the use of poisoned bullets or weapons by the Spanish soldiery against whom his countrymen were contending in the Netherlands. In those days the circumstances conducive to widely spread gangrene hardly existed except in time of war, and, save for a few so-called "hospital" cases, it was not until the beneficent action of anæsthetics began to bring great numbers of peaceful people under the hands of the surgeon that there arose a pressing danger of the practical neutralisation of the expected good by the occurrence of great and wholly unexpected evils. Even in private houses, and, as it seemed, amid surroundings of the most favourable kind, the operations which, because they could be rendered painless, were freely and hopefully undertaken, were in a lamentable proportion of cases rendered of no account by death; while the surgical wards of many hospitals became veritable pest-houses, from which escape with life could hardly be regarded as probable. It seems scarcely credible to-day, but is none the less true, that only half a century ago it was gravely proposed that surgical hospitals should be temporary buildings, which should be destroyed by fire, as dangerous nuisances, after the fulfilment of two or three years of existence, or as soon as gangrene became of common occurrence among their inmates.

At this time LISTER, who was the son of a scientific father, and had been trained in a scientific direction by his influence and his example, had already for some years been engaged in careful research, exercising and developing the faculties essential to accurate investigation. He had learnt how to frame and how to verify or to refute hypotheses; he had learnt how to establish facts in such a manner as to render each one a stepping-stone to further progress; he had learnt to question the accuracy of his own conclusions, and this the more stringently, the more they seemed to be conducting him towards some wished-for goal. He was at the zenith of his powers, gazing sadly at the evils of unknown source and origin by which the best skill of the surgeon was so constantly defeated, when the news came to him of PASTEUR'S discovery of the cause of putrefaction, and he hastened to acquaint himself with details which he at once perceived, with the intuition of genius, might supply him with the clue of which he was in search. Each of the two great men has vied with the other in extolling the share taken by his fellow in the production of the total result; and it is manifest that there can be no question of originality between them. It is unlikely, to say the least, that the attention of PASTEUR himself would ever have been directed towards hospital phenomena, and the range and scope of those phenomena were sufficiently wide to furnish complete occupation for many years of strenuous and persevering industry. We have sometimes been reminded, by the history, of what has been recorded by COLERIDGE concerning the origin of penny postage. A pedestrian, wandering in Cumberland in the early "thirties" of the last century, found a poor girl crying in the road because she was unable to pay the postage of a letter from her brother, who had gone south in search of work. The pedestrian paid the postage, and gave the girl her letter. Most tourists, in similar circumstances, would probably have done the same; but this tourist was ROWLAND HILL, and the incident germinated and bore fruit. Most surgeons would have been interested in PASTEUR'S discovery; but the only one who saw its full significance was LISTER, and his life was thenceforward devoted to the realisation of the vision which had been revealed to the insight of his genius, but which never could have been realised without the most patient, continuous, and unwearied industry. The generation is passing away which witnessed the labours of the great discoverer in the direction of perfecting his work; but none of those who now profit by it should forget the opposition which it encountered or the placid courage with which successive positions were either justified and maintained or were abandoned as soon as their originator became convinced of their unnecessary character. Gradually, and step by step, the conditions essential to the asepticity of wounds and injuries were established; and the great philosopher was revealed to the world in the full lustre of his fame.

The picture is worth gazing upon. For the details of

Lord LISTER'S career, the opposition which his discoveries encountered, and the completeness with which this opposition was overcome, we refer our readers to the notice of his life which occupies other portions of our columns. But those who know or who study these details will recognise that even his luminous intellect would have failed to impress itself upon his generation had it not been allied with other qualities only less great, and, unfortunately, not too common. The brilliant imagination, the almost inspired genius, the philosophic insight, would have been of comparatively small account without the support which they derived from unflinching courage and untiring industry. Without these aids, the sneers and contumely with which his earlier announcements were received could scarcely have failed profoundly to discourage him, or even to interrupt the course of his investigations; but he passed through the turmoil as if hardly aware of its existence, and confined himself from first to last to the facts and questions which were of essential bearing upon the truths which it was his mission to establish. Perhaps few things were more galling to his early adversaries than the manner in which he refrained from "railing accusation," and, while never omitting to deal with any real difficulty, treated difficulties which were imaginary or irrelevant with an indifference that must sometimes have been more galling than expressed contempt. Eager to teach and to explain, he was always accessible to those who sought with sincerity for enlightenment, and the stores of his knowledge and of his experience were at the command of the humblest of those who asked for them. It was his privilege to complete the great work which he began, to build up from the foundation a system of asepticism which leaves nothing to be desired by those who have mastered the principles on which it rests, which has opened all the great cavities of the body to the healing hand of the surgeon, which has removed the pains or preserved the lives of countless thousands of sufferers in every portion of the globe, and which has raised English surgery to a pinnacle from which not even the presumptuous ignorance of politicians will be able to take it down. Our country has given to the world and to the profession the record of a stainless life, of an intellect at once brilliant and profound, of an industry which never wearied, of a courage which never failed; and these qualities, sufficient to constitute greatness in any department of human activity, were so combined in LISTER as to justify our opening claim on his behalf. He was unquestionably the greatest Englishman of his century.

The National Insurance Act.

THE inconvenience, indeed, in some circumstances, the terrible mischief, that accompanies our system of party politics has been remarkably shown during the last two or three months in the attitude of the press towards the resolutely expressed intention of the medical profession to obtain fair treatment under the Insurance Act, treatment which should recognise the high as well as onerous nature of our duties and the costly and elaborate training which those who enter the medical profession have to undergo before they are qualified by law to discharge those duties. The Chancellor of the Exchequer, in a measure the good intentions and actual beneficence of which have been freely acknowledged, proposes to deal with the medical profession on lines which no doubt seem to him wise, but without taking into consideration any of the higher associations of our calling, and, most extraordinary omission of all, without consulting either the educational bodies responsible for the maintenance in this country of a supply of properly educated medical man, or the General Medical Council, itself a Standing Committee of the Privy Council, formed to be a guarantee to the public that the medical service of the country should be adequate and duly progressive. Neither our educational nor our disciplinary authorities were asked to assist in the construction of the measure, yet their unwillingness to discuss details at a moment's notice and in oddly assorted company has been stigmatised by Mr. LLOYD GEORGE in violent terms.

If the Government desire the help of the great corporations—as they should—to assist them in the present situation, delay in the working of the Act, it seems to us, must be granted. The medical profession object to having their professional lives turned upside down, and the fact that in certain directions the process might work for their own good has not reconciled the general practitioner to the upheaval. He sees the undoubted ills. Again, the Act contains in it many things ominous to the progress of medical science and to the maintenance of those great charities which are alike the glory of our professional life and the mainstay of our professional education. But the remarkable display of opposition by the medical profession to the National Insurance Act has been attributed mainly to political feeling; and exactly the same is said of those who are willing to work the Act. Whatever reservations the latter make they are said to be influenced by their Liberalism, while those who consider that reasonable delay should be granted before the medical provisions come into working are regarded as enemies to the existing dispensation. This is particularly unfortunate, because an Act to insure the nation against the consequences of invalidity should offer a remarkable opportunity for the medical profession and the public to enter upon relations of mutual trust; under its working they should come to understand each other better. As a matter of fact, owing to the endeavour to hall-mark certain sections of the medical profession as Socialists and certain sections as Tories, all the professional issues have been confused, and a great chance of reasonable coöperation between medicine and the public may have been lost for a generation.

We understand that the Royal College of Physicians of London and the Royal College of Surgeons of England have now constituted a joint committee, in association with which we hope the Society of Apothecaries of London will be found. The committee will consider the situation in regard to their high responsibilities as representing the bodies from which the vast majority of English medical practitioners receive the qualifications under which they

practise, whatever other academic distinctions they may acquire, and as therefore being virtually in charge of medical education in this country. Their course must then be influenced by the result of the meeting of Representatives of the British Medical Association to be held next week. If the Act can be made workable it will call for exceeding great faith from the medical profession, who will have to enter upon engagements of a strict and onerous sort with no definite guarantee of adequate return. That the Insurance Commissioners will be able to make the appointments under the Act desirable ones may be true, and perhaps some system of collective bargaining may enable practitioners to obtain fair play in many localities. But all this is nebulous, and to us it seems that there is nothing but ordinary caution in asking for a term of delay in which many of the difficulties might be cleared up and the uncertainties removed.

Annotations.

"Ne quid nimis."

THE INTERNATIONAL OPIUM CONVENTION.

THE International Opium Convention, which was signed at the Hague on Jan. 23rd by the representatives of twelve Powers, is an instrument designed for the suppression of the abuse of opium, morphine, cocaine, and other drugs which give rise to analogous abuses. The parties to the Convention are Germany, the United States of America, China, France, Great Britain and Ireland, Italy, Japan, the Netherlands, Persia, Portugal, Russia, and Siam; but the Netherlands Government is empowered to invite all the Powers of Europe and America not represented at the International Conference to designate a delegate armed with the full powers necessary for the signing of the Convention. It is important to note that among the Powers which were not represented at the Hague Conference were Turkey, Peru, Bolivia, and Switzerland. The bulk of the raw material from which morphine is extracted is Turkish opium; coca leaves and crude cocaine are chiefly produced in Peru and Bolivia, and Switzerland is growing in importance as a producer of fine chemicals, of which some have the same injurious effects as the alkaloids of opium and coca leaves. Without the coöperation of these Powers, which possess natural or industrial advantages for the production of narcotic drugs, the effective suppression of the illegitimate traffic in opium, morphine, cocaine, and the like would hardly be possible. It is therefore hoped that the four Powers named will be induced to come into line with the twelve signatories. The Convention virtually binds those Powers which ratify it respectively to enact legislation to give effect to the principles embodied in the agreement. As to raw opium, the contracting Powers agree to enact laws to control its production and distribution, to limit the number of ports through which its importation or exportation shall be permitted, and to prevent its exportation to countries which prohibit its entry and control its exportation to countries which limit its importation. As to prepared opium, the Convention aims at the suppression of the manufacture, distribution, and use of opium made into the form of an extract suitable for consumption. Up to this point the desired objects can be obtained, so far as this country is concerned, without any undue interference with existing trade interests, although the right to import raw opium for legitimate manufacturing purposes will be restricted to duly authorised persons. The articles of the Convention relating to medicinal opium, morphine, cocaine, and heroin bind the ratifying Powers to enact laws which must necessarily infringe on an industry which is in a particularly flourishing condition in Germany, England, Scotland, and Switzerland. A considerable proportion of the output of the narcotic alkaloids manufactured in these countries supplies a demand which is neither medical nor legitimate, in spite of the fact that the manufacturers may be ignorant of the ultimate destination of their products. Large quantities of morphine, for instance, are smuggled into China, and it is known that in the year when the duty on that alkaloid imported into the Celestial Empire was increased from 5 to 200 per cent., *ad valorem*, the quantity imported fell from four tons to a few ounces, although, it is said, the consumption increased. Similarly, the occasional seizures of heavy consignments of cocaine by the Indian Customs authorities indicate the existence of a not inconsiderable illicit traffic in that drug in India alone. When the sale of morphine and cocaine is restricted to proper uses only there will necessarily be a large decrease in the quantities manufactured. The Convention requires the contracting Powers to enact such pharmacy laws and regulations "to limit the manufacture, sale, and use of morphine, cocaine, and their respective salts to medical and legitimate uses only" in the following manner—by issuing licences to manufacturers of, and dealers in, these products in respect of their places of business, and by requiring them to register on their books the quantities manufactured, imported, exported, or sold. Such regulations are also to apply to medicinal opium; to all preparations (official and non-official, including the so-called anti-opium remedies) containing more than 0·2 per cent. of morphine or more than 0·1 per cent. of cocaine; to heroin, its salts and preparations containing more than 0·1 per cent. of heroin; and to every new derivative of morphine, cocaine, or their respective salts, or to any other alkaloid of opium which might, after generally recognised scientific investigations, give rise to similar abuse and to result in similar injurious effects. In framing the proposed measures of legislation the contracting Powers are not required to apply the regulation in regard to the recording of sales of morphine and cocaine in the case of prescriptions of medical practitioners, or in the case of sales by pharmacists in the ordinary course of business. As a matter of fact, the law of this and most of the other countries concerned already makes provision for transactions of this kind, but apart from the obligations of Great Britain, as a party to the Convention, it would be in keeping with the spirit of the proposals if the British Government, in framing the measure which will be necessary to give effect to the international agreement, were to take the opportunity to increase the stringency of the conditions under which the drugs in question may be distributed. If some legal limit were placed on the number of times a prescription for a compound containing morphine or cocaine could be dispensed, pharmacists would be happily relieved of the necessity of depending entirely upon their own judgment. The last day of this year is the date by which it is hoped that the Government of the Netherlands will have received ratifications from the Powers, after which it is expected that the necessary measures of legislation will be framed without much delay.

IN MEMORY OF THE LATE DR. BOURNEVILLE.

A COMMITTEE has been formed, under the immediate presidency of M. Pierrotet, Mayor of the Fifth Arrondissement of Paris, with M. Mesnard, of the Asile de Bicêtre, as secretary, for the purpose of honouring the memory of the late Dr. Bourneville, the founder and editor of the *Progrès Médical*. It is proposed to raise a monument over his grave at the Père Lachaise cemetery, and another at the Bicêtre

Hospital with which he was connected for so many years. In this manner the great services he rendered may be recalled and serve as an example to others. Dr. Bourneville will be best known to our readers, perhaps, for his intimate association with the earliest movements to introduce the technical training of hospital nurses. He was inspired by a profound admiration for Miss Florence Nightingale and anxious that his country should benefit by her teaching. As a Member of Parliament as well as of the Paris Municipal Council, he largely contributed to the secularisation of the French hospitals, and the consequent introduction of competent trained nurses. He likewise helped forward various movements in favour of special maternity hospitals. As further examples of his deep interest in social problems may be mentioned his advocacy of cremation and of more systematic medical and institutional treatment of the feeble-minded, while as a member of the Superior Council of Hygiene he worked for sanitary reform by promoting the water-carriage system of sewage. He assisted Professor Charcot to edit the *Archives of Neurology*. The secretary of the Society for the Support of Cremation, M. G. Salomon, 112 bis, Boulevard Malesherbes, Paris, is the treasurer of the memorial committee. Among the members of this committee we notice the names of Dr. Augagneur, who is one of the Ministers in the newly formed Government under M. Poincaré; Dr. Marcel Baudoin, Syndic of the Association of the French Medical Press; Dr. Paul Brousse, recently president of the Paris Municipal Council; Dr. Beurmann, president of the Hospital Society; Dr. Maurice Letulle, president of the Anatomical Society; Dr. Paul Sérieux, president of the Medico-Psychological Society; Dr. Thoinot, president of the Society of Hygiene; Dr. Demelin, Dr. Navarre, Dr. Jules Voisin, and Dr. Landouzy, dean of the Paris Faculty of Medicine. M. Léon Bourgeois, who was formerly Prime Minister, is associated on the committee with two other celebrated Prime Ministers, M. Clemenceau and M. Combes, and with M. Mesureur, director of the Assistance Publique. The executive also includes Professor Barrier, director of the Veterinary School at Alfort, and Dr. Bonnaire, the well-known obstetrician, and the general secretaries are Dr. Paul Cornet, Dr. Julien Noir, and M. Pujol, the architect. Considering the great esteem in which the late Dr. Bourneville was held and the influential support thus accorded to the movement, there should be no difficulty in suitably commemorating his life work.

THE HOUSING QUESTION IN VANCOUVER.

A FREQUENT correspondent writes from Vancouver the following description of how the question of overcrowding is affecting the accommodation of the labouring classes in Vancouver:—"Public health problems are to the fore everywhere, and overcrowding amongst labourers is a serious concern in the city of Vancouver. It has been extending at a great rate, but the population has more than overtaken the accommodation, particularly as railway extensions have cleared away large blocks of huts, or, as they are termed in Western Canada, 'shacks,' which formerly sheltered a myriad of the poorest people. I have been taken through many houses which take the place of common lodging-houses, and other lodgings. The lowest price for a bed in a dormitory is 20 cents. I should estimate that each lodger has twice the cubic space he would get for 3*d*. in an English common lodging-house, he has a better bed and bedding, his room is better ventilated, and he has a water-closet and washing-place on the same floor. Probably at night extra men will be found sleeping on the floor, or on mattresses laid on the floor, and it is practically impossible at present to prevent this, for there is not in the town accommodation for housing the winter population. It is hoped that next year the demand may be overtaken, but the conditions are almost too difficult to be met. Throughout Central North America there is great need for labour during the summer, when the prairies are consequently drawing men to them. These men have no work to do in the winter and, dreading the severity of the climate, they migrate to the Pacific Slope; consequently the towns from Vancouver to Los Angeles have to house in winter an enormously increased population, a population of white men be it observed. The Chinese have different conditions, for the Chinese on the prairies are cooks or laundrymen, and their occupation is permanent. The extra Chinese in the towns in winter are men who work in the salmon canneries on the Pacific Slope. Many 20 cent beds have been provided on a semi-charitable basis—like that of the Rowton Houses in London and the Bevington House in Liverpool—in the Mission building, so far partly completed and lodging 250 men, where there are a mission room, large dormitories, good lavatories, a laundry, and a baggage room. Here the city accommodates some men of good character but without funds at the time. Above the 20 cent line are houses with better beds and choicer company for 25 cents in large dormitories and 50 cents (2*s*.) in cubicles, and lodgings at 50 cents (2*s*.) and 75 cents (3*s*.) a night in separate rooms. These are all carefully inspected by the Health Department; their sanitary arrangements and ventilation are very good, and fire protection is provided by swing doors and fire escapes. The problem of housing the Chinese is more difficult, but it is hoped that this will soon be solved by the development of a Chinese settlement now under construction to replace the old village which was swept away in the preparations for the new railway." The difficulties which confront a new community, when growing so rapidly as the modern Canadian towns grow, must be enormous. Though the sanitary conditions of the day are faced and provided for, the pressure is maintained by the influx of population. Larger sewers and an increased water-supply are needed almost before the ones immediately required are completed, and in spite of an anxious and wakeful Government overcrowding has come into existence in many places, and must continue to be steadily faced.

BLUE ATROPHY OF THE SKIN FOLLOWING COCAINE INJECTIONS.

Dr. William S. Gottheil, of New York, has contributed to the *Journal of Cutaneous Diseases* for January, 1912, a description of changes in the skin following habitual hypodermic injections of cocaine and morphine in a woman aged 31, an ill-nourished subject, who had been administering the drugs to herself for about seven years. The actual cause of her going to Dr. Gottheil for treatment was a multiple infection of the thighs, buttocks, and arms with pyogenic cocci, introduced in all probability by a dirty hypodermic needle; this infection was of three weeks' duration only, and she had never had a previous misadventure of the same kind. There were, however, a great many atrophic pigmented areas of skin scattered about over the thighs, buttocks, and arms. These were more or less rounded in shape, and were on an average equal in size to a large pea; each was a sharply limited depression in the skin, and had a blue tint varying in intensity from a deep blue-black to brighter shades, causing them to contrast vividly with the anæmic pallor of the surrounding skin. The patient was quite sure that each of these patches represented the site of an injection of cocaine; she was positive that introduction of morphine alone beneath the skin had no such effect. The development of these areas caused her no concern, so that presumably there was no inflammatory process responsible for their production. She bought her drugs in clear solution and used the ordinary type of hypodermic needle. A histological examination of

the areas showed that the pigment, which was very black, occurred in rounded or irregular granules, massed together in some spots. It was scattered throughout the cutis, but lay principally in its central portion; some of it was definitely within lymphatics, and in many places the granules were surrounded by an inflammatory exudation of cells. The atrophic process involved the entire cutis. Unfortunately the quantity of pigment was so small that it could not be tested chemically. Dr. Gottheil states that he has never seen any such lesions following subcutaneous injection of drugs, though spots of blue pigmentation without atrophy are not uncommon as a result of hypodermic introduction of various drugs. There are only two other cases on record, so far as he was able to ascertain, in which the same combination of pigmentation with atrophy has occurred as a result of injection of drugs; in one of these the offending substance was morphine, in the other cocaine. Dr. Gottheil's patient said that she had seen similar spots in other victims of cocainism. The nature of the pigmentation is doubtful; possibly the granules are steel particles, but this fails to explain the rarity of the lesion and the concomitant atrophy.

THE LOGIC OF FADDISM.

THAT some people eat too little and that others eat too much; that most people occasionally, and some habitually, eat unsuitable food, or eat suitable food in an improper manner or under improper circumstances; that food that is suitable for one person may be quite unsuitable for another person, or even for the same person at another time and under other conditions; and that from these deviations from normal conduct arise many of the ills that flesh is heir to—these, surely, are truisms. And from concentration of attention on truisms without due regard to perspective most fads take their birth. Mr. Upton Sinclair, who focussed public attention with regard to the Chicago stock-yards in the direction previously indicated in these columns by our Special Sanitary Commissioner, has views on fasting[1] as a cure for nearly every ill, and his opinions have received wide publication in lay magazines and in the daily press. They have lately appeared in book form. Suffice it to say that he advocates in many circumstances abstinence from food of all kinds for a period lasting until the return of hunger—which, according to him, within a day or two of beginning the fast, disappears and remains in abeyance for a varying period of time. In response to a circular of inquiry sent out by Mr. Sinclair as to the results in those known to have followed his method, he received reports of benefit in 27 cases of indigestion, 14 of constipation, and in smaller numbers of colds, tuberculosis, poor circulation, headaches, anæmia, scrofula, bronchial trouble, syphilis, liver trouble, general debility, chills and fever, blood poisoning, ulcerated leg, neurasthenia, locomotor ataxia, sciatica, asthma, excess of uric acid, epilepsy, pleurisy, impaction of bowels, eczema, catarrh, appendicitis, valvular disease of heart, insomnia, gas poisoning, grippe, and cancer. We are by this time quite prepared for the familiar phrase that follows: "45 of the cases having been diagnosed by physicians." We have some curiosity to know how it happened that "out of the 109 persons who wrote" [in reply to Mr. Sinclair's questions] "100 reported benefit and 17 no benefit" (p. 103), and suggest that statements of this kind, even if capable of some explanation not clear to the ordinary reader, may have led to the neglect by responsible journals to take his work seriously—a conspiracy of silence in which Mr. Upton accuses THE LANCET and the *New York Times* to participate. Mr. Sinclair, believing the meat which he had hitherto been taking to have been the cause of his headaches, dyspeptic and other symptoms, gave up eating meat. The troubles disappeared and he became forthwith a vegetarian on principle as well as in practice. But, alas! in about three years the same troubles reappeared, notwithstanding his strict adherence to a "raw food dietary." Then he read somebody's book, with the result that he returned to the use of meat, and presto! his troubles disappeared again. He has apparently since stuck to the use of meat, which he found suited him better than vegetarian food—though the same indispositions the cure of which he now attributes to meat food had previously disappeared on his taking to vegetarianism; and he expresses the opinion that, so far as he is concerned, beef-steak is the most easily digested and most easily assimilated of foods (p. 168). The fact is, that in a lack of general applicability lie the uselessness and danger of all faddist methods, while Mr. Sinclair errs beyond that point, in that he lays down as principles things that are clearly unsound. For instance, he asserts: "That anyone could die of lack of food without feeling a desire for food, is absurd on the face of it." Again, discussing alleged deaths under the fasting cure, he says that "people might die very frequently" [under the treatment] "without that being any argument against the cure." That would depend upon whether the relation of cause and effect were established. He and thinkers of his calibre fail to see that the converse proposition is equally true—viz., that people may get better under any kind of "cure" without that being any argument for the cure. The multiplication by the food faddist of plans to avoid dyspepsia is for the most part an imitation of the policy of the householder who, hearing of a patent stove that was warranted to save half his coal, bought two stoves that he might save all of it.

[1] The Fasting Cure. By Upton Sinclair, author of the "The Jungle," &c. London: William Heinemann. 1911. Pp. 261. Price 25s. 6d. net.

MALIGNANT CHORDOMA, INVOLVING BRAIN AND SPINAL CORD.

IN the *Journal of Nervous and Mental Disease* for January of this year is a paper of considerable pathological interest by Dr. Smith Ely Jelliffe and Dr. John H. Larkin, of New York. It records the occurrence of a tumour of great rarity—viz., chordoma, a malignant cartilaginous growth of notochordal origin, invading the base of the skull and brain, with multiple metastases in the spinal cord and column. The present case is the seventh recorded in the literature. The patient was a young married woman of 36, with a clean bill of health up to the onset of the illness to be described, who suddenly developed a sixth nerve palsy on the left side. Severe headache followed, with neuralgic pains in the distribution of the left trigeminal nerve, extending sometimes to the back of the head. Not long after, persistent vomiting set in and the patient began to lose flesh rapidly. Some months after the commencement of the affection it was found that the right eye was completely blind, while vision was very defective in the left. The pupils were widely dilated and inactive to every form of stimulus. There was total external ophthalmoplegia as well, the eyes being immobile in the central position. On the left side considerable ptosis was noticed. Facial movements were good, and audition was normal. The limbs were somewhat wasted and muscular power was diminished, but no sensory changes could be detected. Both ankle- and knee-jerks were absent, and there was a slight degree of Rombergism. Within a comparatively short time, however, the symptoms became much more severe. Gradually increasing somnolence set in, with mental confusion and dreamy delirium; further cranial nerve involvement, in the shape of a left facial palsy, indicated a spread of the basal tumour, the condition having been so diagnosed. Then followed a motor and sensory palsy of the left fifth nerve, a left hemiplegia and hemianæsthesia, and a progressive

paraplegia, with total loss of motor, sensory, and sphincter functions. Hallucinations of sight, hearing, and smell ensued. Finally, came a sanguineous discharge from the right nostril, and after eight months of acute suffering the patient died from profound inanition. At the necropsy the brain was found to be held down in the base of the skull by a huge tumour mass, through which ran the first, second, third, fourth, fifth, and sixth cranial nerves, while others were flattened or distorted by intracranial pressure. The dimensions of the growth were 11 × 6 × 7 cm. The base of the skull was extensively necrosed by tumour invasion. Both orbital plates of the frontal bone, the crista galli and cribriform plate of the ethmoid, the body and lesser wing of the sphenoid, were all destroyed. The pituitary body could not be found. Tumour growth had spread into the nares, the sphenoidal sinuses, and even into the antrum of Highmore. At first the growth was supposed to be a sarcoma, but microscopical examination showed that the matrix of the tumour was like cartilage in some places and like mucous tissue in others. There were rows of cells in a homogeneous groundwork which contained many open spheroidal spaces, due no doubt to the coalescence of cells. The spaces were sometimes sufficiently extensive to be described as cysts. The cells were relatively large, with deeply staining nucleus and many vacuoles in the protoplasm. The matrix was in many places hyaline-looking, staining light blue with hæmatoxylin. Very few blood-vessels were found in the tumour, which in its more developed parts was identical with the tissue of the notochord. The paper of Dr. Jelliffe and Dr. Larkin contains an abstract of all the previously recorded cases.

DUTCH DROPS.

A CORRESPONDENT has forwarded us a sample of "a quaint remedy for urinary disorders called 'Dutch drops,'" which appears to have vogue chiefly amongst seafaring people, its efficacy as a diuretic amounting in their minds to a conviction. "Dutch drops" are referred to in certain homely books on medicine as a residuum obtained by the rectification of turpentine or by distilling resin, but it is admitted that the original Haarlem formula is much imitated. Various formulæ are given, including the compounding of oil of turpentine, guaiacum, amber oil and cloves, balsam of sulphur, linseed oil, ammonia, and so forth. It is stated to be "detergent, diuretic, stimulant, and vulnerary." Amongst the synonyms of Dutch drops are: guttæ Hollandicæ, empyreumaticum Batavicum, ol. Haarlemensis, and Tilly's drops. The sample submitted to us appears to be the genuine Haarlem oil, which, according to its wrapper was invented as far back as 1696 by one Tilly. "This medicine," we are told, "works miracles with every one, that makes use of it, and the Grace of the Omnipotent God is experienced in it to admiration. When you take this remedy it unites itself to the Stomach, and is the same as a flying Mercury not letting the vapours rise without being mixed with them; it likewise prevents at moist humours from running through the Veins or Nerves, accompanying them until they pass through the pores. Thus it communicates itself and leaves its virtue notwithstanding afterwards it may be expelled by urine or stool." In similarly quaint terms the wrapper also declares this "medicamentum gratia probatum" to be a cure for bad-smelling urine, gravelly stone, all kinds of fevers and distempers, French disease, worms, palpitations, megrim, ulcers, cancers, disorders of the eyes and ears, colic, lying-in inconveniences, fits, and so on. The sample we received was a dark brown oil smelling strongly of turpentine. It did not contain guaiacum or ammonia. There was sulphur present in combination with the oil, for on oxidising the oil with nitric acid some sulphuric acid was produced. Further, on heating the oil with alkali and a few drops of lead acetate solution there was a distinct blackening. A slip of lead foil similarly turned sheeny black when heated in the oil made alkaline with caustic soda. The oil was completely soluble in ether. That it did not consist exclusively of turpentine and its derivatives was evident from the fact that a soap was formed when it was boiled with an alcoholic solution of caustic soda. The soap so obtained when decomposed with a mineral acid yielded fatty acids resembling linoleic acids. It seems probable, therefore, that the specimen was a true specimen of the original Dutch drops made by boiling sulphur with linseed oil or turpentine or both. The medicament clearly aims at presenting sulphur in organic combination, and preferably an oily one, resembling in this respect relatively modern pharmacological products as the ichthyols. Such attempts at presenting sulphur in the organic shape with the aid of fats and volatile oils, are interesting in view of the therapeutic success attending the use of, say, arsenic and mercury in complex organic molecules.

IMPROVEMENT IN SPONDYLITIS DEFORMANS UNDER FIBROLYSIN.

AT a meeting of the Société Médicale des Hôpitaux of Paris on Dec. 1st, 1911, M. E. Rist described a case of remarkable improvement in spondylitis deformans, with involvement of the shoulder and hip-joints (*spondylose rhizomélique*), under treatment by fibrolysin. Some years previously he reported a similar result in which after an attack of gonorrhœa the spine had been ankylosed for 14 years. The patient became an invalid unable to do any work. Under the treatment he so much improved that he could almost gain a living. In the present case the patient was a Polish hatter, aged 23 years. He was admitted into the Laennec Hospital for cough, dyspnœa, and pains in the limbs on June 24th, 1911. In January and again in March hæmoptysis occurred. In May rheumatic pains began in the lower limbs and then affected the upper. On admission he was emaciated, weighing 47½ kilogrammes. The temperature ranged from 99·5° to 100·4° F., and the respirations were 28. At the apices of the lung the respiratory murmur was weak, and in the right supraspinous fossa dry crackling sounds were heard. He coughed frequently, but expectorated little. The most striking symptom was rigidity of the neck with limitation of movements. Flexion was almost impossible and extension was only a little more free. Limitation of rotation and lateral flexion was equally marked. All these movements were painful. On endeavouring to increase them passively invincible resistance was encountered and acute pain was produced. The whole of the cervical and dorsal spine was painful and ankylosed. There was marked cervico-dorsal kyphosis, contrasting with lumbar lordosis. The left shoulder-joint was painful, and its movements were limited and accompanied by crackling; the left hand could not be placed on the head. The right shoulder was less painful, and its movements were not limited. There were also pains in the hip-joints, but they had been more severe before admission. The obliquity of the ribs was marked and respiration was entirely diaphragmatic. The case was thus a typical example of the *spondylose rhizomélique* of Marie. So was its etiology. A year before admission the patient contracted gonorrhœa and a "morning drop" (*goutte matinale*) still persisted, in which gonococci were found. The urethritis was treated by M. Legueu, and at the time of the report had disappeared. For the vertebral ankylosis M. Rist gave from July 22nd to Nov. 3rd 24 subcutaneous injections of 2 cubic centimetres of a solution containing 20 centigrammes of fibrolysin to the cubic centimetre. On July 28th, after 1·2 gramme

of fibrolysin had been injected, movements of the head and shoulders were easier and more extensive. At the end of October the movements were almost normal. Nevertheless, some rigidity of the spine persisted, and the kyphosis and lordosis were still perceptible. Movements of the left shoulder-joint did not become quite normal. The upper ribs did not regain all their mobility, and the diaphragmatic type of respiration persisted. The pains completely disappeared, the patient gained 5 kilogrammes in weight, and resumed work. M. Rist does not doubt that if he had been able to combine gymnastics and massage with the administration of fibrolysin he would have obtained a still better result. The success of fibrolysin in such cases is not in accord with the pathological theory that spondylitis is primarily due to softening of the bones (rarefying osteopathy), and that ossification of ligaments follows as a compensation for the insufficient solidity of the skeleton. M. Rist suggests that there is at first hyperplasia of the peri-articular fibrous tissues, as otherwise it is impossible to explain the action of fibrolysin. It is noteworthy that the spondylitis had not lasted more than two months when the treatment was begun. With regard to the pulmonary tuberculosis, it at first seemed more serious than it was, because some of the symptoms which were supposed to be due to it were the result of immobility of the thorax from costo-vertebral arthritis. Expansion of the apices of the lung was therefore almost completely suppressed, the respiratory murmur was diminished, and dyspnœa was increased. It is also noteworthy that the fibrolysin had no injurious effect on the pulmonary tuberculosis. The view has been put forward that the drug would interfere with cicatrisation of tuberculous lesions.

THE EFFECTS OF STRENUOUS ATHLETICS IN THE AMERICAN NAVY.

IN the *Journal of the American Medical Association* of Jan. 6th is reviewed an important pronouncement contained in the report of the Surgeon-General of the American navy on the effects of competitive athletics in the training schools and colleges. With an unparalleled opportunity for observing during their school course and in their subsequent careers large classes of young men, the Bureau of Medicne and Surgery of the Amercan Navy has come to the conclusion that spectacular and competitive athletics are undesirable. It is held that the prolonged and rigorous course of exercises necessary to excel in physical sports is injurious in its after-effects. Under the conditions of service at sea it is impossible to continue rigorous exercises; the athlete falls a prey to degenerative changes, tends to become obese and to lose physical stamina, and fails to render as many years of efficient service as does his less athletic classmate. The records of 625 athletes of the Naval Academy classes from 1891 to 1911 were examined to determine the bearing of early athletics on physical efficiency in after life. Of these, 21 died—6 from tuberculosis, 8 from mental and nervous disease, 2 from alcoholism indirectly, 1 from acute dilatation of the heart, and 1 from valvular disease of the heart. The last two deaths were directly attributed to running. One death was due to an injury received during football. Of the remaining 604 athletes in the service, 198 have had disabilities noticed in the official records to which athletics stand in a possible or probable causal relation. These disabilities have not necessitated discharge, but have caused impaired service. Of these 198 men, 48 had abnormal conditions referable to the heart and blood-vessels, such as arterio-sclerosis, organic cardiac disease, murmurs, irregular and rapid cardiac action and hypertrophy, and dilatation of the heart. In 16 the joints or motor apparatus were involved; in 11 the kidneys; in 17 there was patent tuberculosis or tuberculosis was suspected; in 16 there was neurasthenia associated with gastric complications. There were 25 cases of appendicitis and 15 of hernia, both of which conditions appeared to be associated particularly with a football record. The opinion is expressed that long distance racing is productive of serious harm. This severe arraignment of competitive athletics has been corroborated in civil life by experiences in schools and universities. The Bureau of Medicine and Surgery of the American Navy does not recommend that athletics in the navy should be entirely abandoned, but is of opinion that in their strenuous competitive form they are dangerous. Moderate athletics are encouraged, and in the Naval Academy the Swedish system of exercises is now being tried with satisfactory results.

ADMINISTRATION OF THE PHARMACY ACTS.

DURING the last few years the duty of administering the penal clauses of the Pharmacy Acts, which belongs to the Pharmaceutical Society, has entailed a much greater amount of work than was the case before the enforcement of the Poisons and Pharmacy Act, 1908, by which enactment a new class of poison sellers—namely, a class licensed to sell arsenical sheep dips, weed-killers, and the like—was created. In the year before that Act came into force the society's law department investigated 453 cases of alleged infringement of the Acts, but in the year following the enforcement of the 1908 Act four times the number of cases of alleged infringement were examined. The main cause of this increased activity was that the new class of licensed poison sellers, which consisted chiefly of seedsmen, florists, and ironmongers, had not been trained to understand the necessity of a precise observance of the precautions which the law requires to be taken when potent compounds are sold by retail. In chemists' shops the "poison book" has been used every day for the last 40 years or so, but an ironmonger had not been accustomed to take any precautionary measures of the kind when dealing with his customers, for the reason that it had been illegal for him to sell compounds of arsenic and nicotine. When the ironmonger obtained his poison licence he was apt to forget the conditions of sale with which he was required to comply, and hence the large increase in the number of cases of irregular sales of poisons which the Pharmaceutical Society was called upon to investigate. That the unqualified poison sellers are now acting with greater care seems to be indicated by the fact that last year the number of cases of alleged infringement of the Pharmacy Acts which were made the subject of inquiry was considerably less than in the previous year. Thus, according to the annual report of the registrar of the Pharmaceutical Society, which was presented at the February meeting of the council, the number of cases investigated in 1911 was 1244, against 1836 in 1910. The number of cases in which legal proceedings were instituted last year was 241, and, with few exceptions, penalties were paid by those against whom the proceedings were taken. In the majority of cases the offences were those of the sale of medicinal poisons, or the keeping of open shops for the sale of poisons by unqualified persons. In only 21 instances were proceedings taken against seedsmen or their assistants in 1911, whereas in the previous year 64 seedsmen and 39 assistants to seedsmen were proceeded against, which goes to show that licensed poison sellers are becoming acquainted with their obligations. In administering the Acts it is sometimes brought to the notice of the registrar that unqualified drug store keepers, in order to evade the Pharmacy Acts, sell preparations which should contain poisons from which the poison has been omitted. Last year

11 such cases were reported, and in two instances the sellers were summoned for infringement of the Merchandise Marks Act and fined. One of the defendants sold a preparation labelled "Laudanum—Poison," which contained no opium, an incident which shows the extremes to which an unqualified person will sometimes go in order to escape the penalty of infringing the Pharmacy Acts. The registrar's report also shows that the number of registered pharmacists in Great Britain is now 16,365, an increase of 73 on the preceding year. The membership of the society, which numbers nearly 7500, has never before been so large.

THE INTERNATIONAL OBSTETRICAL AND GYNÆCOLOGICAL CONGRESS.

A NATIONAL Organisation Committee for Great Britain and Ireland has been formed in connexion with the International Obstetrical and Gynæcological Congress, which is to be held in Berlin from Sept. 10th to 12th, 1912. The committee includes representatives from the Royal Society of Medicine (Obstetric and Gynæcological Section), North of England Obstetrical and Gynæcological Society, Edinburgh Obstetrical Society, Glasgow Obstetrical and Gynæcological Society, and the Royal Academy of Medicine in Ireland. The Central Organisation Committee in Berlin has decided to hold a formal discussion at the first session of the Congress on Sept. 10th, on the Surgical Treatment of the Peritoneum. The duties of the National Organisation Committee of Great Britain and Ireland are (1) to nominate delegates to the Congress for the United Kingdom, the number of official delegates being expressly limited by the Central Organisation Committee to three; and (2) to select a "*Rapporteur*" (not necessarily one of the three delegates) who will personally open the discussion on the Surgical Treatment of the Peritoneum as this country's representative and give the views held here on the subject. The secretaries of the National Organisation Committee are Mr. J. H. Targett, 19, Upper Wimpole-street, London, W.; and Dr. Walter W. Tate, 32, Queen Anne-street, London, W.

THE INCIDENCE OF CANCER IN FINLAND.

THE Cancer Commission which the Finnish Medical Society appointed to inquire into the incidence of cancer, including sarcoma, in Finland has now published a report[1] based on the answers received from 313 practitioners to the commission's queries as to the number and nature of cases under observation between Jan. 1st and March 31st, 1910. The inquiries were conducted on the same principle as in Sweden and Denmark, where similar investigations were held in the years 1905 to 1906, and 1908 respectively. The Finnish report shows that in several points there is a real or apparent difference in the incidence of cancer in the three countries. The value of the report is inevitably diminished by the diagnosis of cancer being in many cases uncertain, but it was confirmed by an operation or microscopic examination with sufficient frequency to illustrate the distribution of cancer in different parts of the country, and its relative frequency in different organs. In the towns the incidence of malignant disease for every 100,000 inhabitants was 28·38. In the country districts it was 16·37. This disparity is largely accounted for by the greater facility afforded the town dweller for medical attendance. The same explanation is probably also applicable to the difference between the total incidence of the disease in Finland, Sweden, and Denmark per 100,000, the figures being 18·14, 33·1, and 42·8 respectively, for the population is more dense and the patient is in closer contact with the physician in the latter countries. The frequency of the disease in men steadily increased with age till its maximum was reached at the age of 60. In women it increased till the age of 45 to 50; between the age of 50 and 55 it sank, and rose again to its maximum at the age of 55 to 60. Cancer of the lip represented 24·49 per cent. of the total in the male, while in the female it was only 3·21 per cent. Cancer of the stomach was more evenly distributed between the sexes, being 41·23 per cent. in the male and 37·18 per cent. in the female, in whom the frequency of cancer in the breast and uterus was 19·23 and 17·95 per cent. respectively. Altogether there were 244 cases of cancer and sarcoma in the male, and in the female 312, of which 116 involved the breast or uterus. No conclusive observations as to heredity, infection, local conditions, trauma, the influence of other diseases and of operations are made, nor is any new light thrown on the relation between cancer and various occupations; but the curious fact was noted that cancer was relatively less frequent in the upper than in the lower class of society, although the facilities for detecting the disease are presumably greater in the former than in the latter class.

[1] Finska Laekaresaellskapets Handlingar, November, 1911.

PRESERVATIVE TRICKS.

THE wily attempts of some persons to escape the vigilance of those responsible for the efficient administration of our food laws are well illustrated in a report recently published by the Local Government Board upon the analyses and methods of detection of certain proprietary substances sold as preservatives. Dr. G. W. Monier-Williams has found, for example, that a new preservative, sold under the name of "mystin," for preserving milk and cream has recently been advertised as possessing the advantage that its presence cannot be detected by analysis. A sample of mystin on analysis proved to contain sodium nitrite 9·85 per cent., formaldehyde 0·30 per cent., and water 89·85 per cent. As Dr. Monier-Williams points out, sodium nitrite is a dangerous drug with a powerful action on the heart. According to the directions given the addition of this compound to milk would mean that a quart of it would contain two grains of the nitrite, which is the maximum dose of this substance. Further examination of the milk so preserved brought the fact to light that the milk did not respond to the test most generally relied upon by analysts for the detection of formaldehyde in milk, so that in the ordinary routine examination of milk samples for preservatives such a sample might be passed as genuine. Moreover, the presence of nitrite of sodium in milk has not hitherto been suspected. Dr. Monier-Williams finds that the nitrous acid can be destroyed by heating the acidified milk with a little urea, after which it gives the formaldehyde reaction readily enough when that preservative is present. Reference in the report is also made to another proprietary preservative called "acoine" which contains sodium benzoate and sodium carbonate. Fluorides and sulphites are also offered as preservatives for milk products. The detection of the latter is easy, but the detection of fluorides is troublesome. Dr. Monier-Williams points out, however, the value of the titanium test, which depends upon the bleaching action of fluorine compounds upon a peroxidised titanium solution, the orange-yellow colour of which is partially discharged in the presence of fluorine compounds. It is obvious that these reports, which are issued from time to time by the Local Government Board must be of the greatest possible assistance to the analytical machinery of the Food and Drugs Acts. A question, however, which deserves very careful consideration, is whether it would not be better to control these

practices by sampling articles in the possession of the vendor, instead of relying upon the detection of preservatives in milk or cream as sold to the consumer. We have frequently pointed out the unsatisfactory position of the preservatives question, inasmuch as although regulations in regard to their use have been recommended by a departmental committee, no definite steps have been taken by the State. We believe, however, that the Local Government Board has for some time been giving close attention to the subject, and before long it is hoped that an official scheme, providing for the control of the use of preservatives in food, will be issued.

WE regret to announce the death on the night of Feb. 8th of Sir William Henry Allchin, M.D. Lond., F.R.C.P. Lond., physician extraordinary to the King and consulting physician to Westminster Hospital. A memorial service was held in the chapel of Westminster Hospital on the morning of Feb. 15th. We shall publish an obituary notice of Sir William Allchin in our next issue.

Mr. Lewis Harcourt, the Secretary of State for the Colonies, will address a meeting of the supporters of the London School of Tropical Medicine which will be held at the Mansion House, under the presidency of Sir Thomas Crosby, M.D., the Lord Mayor of London, on Wednesday, Feb. 28th, at 3 o'clock.

A DINNER was given on Thursday, Feb. 8th, at the Hotel Cecil, by the colleagues, old students, and former pupils of Sir Thomas Barlow and Mr. Rickman J. Godlee, as a compliment to the Presidents of the Royal English Colleges of Physicians and Surgeons. The chair was taken by Sir John Tweedy, and about 150 attended a very successful dinner.

Lieutenant-Colonel Sir Richard Havelock Charles, K.C.V.O., Serjeant-Surgeon to the King, and Fleet-Surgeon Robert Hill, M.V.O., R.N., Fleet-Surgeon to the *Medina*, have been promoted, respectively, Knight Grand Cross and Commander of the Royal Victorian Order. Lieutenant-Colonel Robert Bird, C.I.E., Professor of Surgery in the Medical College at Calcutta, and Mr. William Turner, M.D. Edin., Surgeon to the Colonial Hospital at Gibraltar, have been appointed Members of the Royal Victorian Order.

A MEETING of the Organisation Committee of the Seventeenth International Congress of Medicine will be held on Monday next at 5 P.M., in the Library of the Royal College of Physicians of London. We understand that H.R.H. Prince Arthur of Connaught has consented to open the Congress, and that the following have consented to give general addresses: Professor Chauffard (medicine), Professor Harvey Cushing (surgery), and Professor Ehrlich (pathology).

Sir George Hare Philipson, the President of the Newcastle College of Medicine, has been appointed by the Senate Vice-Chancellor of the University of Durham.

Surgeon-General W. B. Bannerman, I.M.S., late Director of the Bombay Bacteriological Laboratory, and now of the Madras Presidency, has telegraphed to Sir Ronald Ross, professor of tropical medicine in the University of Liverpool, that Captain W. S. Patton, I.M.S., assistant director of the King Institute of Preventive Medicine, Madras, has discovered the complete development of the parasite of kala-azar in Indian and European bed bugs.

AN EXAMINATION OF THE MEDICAL PROVISIONS OF THE NATIONAL INSURANCE ACT.

BY WILLIAM A. BREND, M.A. CAMB., M.B., B.SC. LOND.,
OF THE INNER TEMPLE, BARRISTER-AT-LAW; LECTURER ON FORENSIC MEDICINE, CHARING CROSS HOSPITAL.

II.[1]

The Benefits.

THESE are defined in Section 8, Subsection (1) of the Act, which commences with the important words qualifying the whole subsection: "Subject to the provisions of this Act the benefits ..... are ....."

Medical benefit.—"Medical treatment and attendance, including the provision of proper and sufficient medicines, and such medical and surgical appliances as may be prescribed by regulations to be made by the Insurance Commissioners."

The first point to notice is that nowhere in the Act is any indication directly given of what is meant by the words "medical attendance and treatment." In the ordinary sense medical treatment includes a great deal more than the services usually rendered by general practitioners. It embraces forms of treatment, such as the performance of major operations, determination of errors of refraction, and pathological investigations, which can only be given by those who have acquired special knowledge; as well as therapeutic measures which, though given under the orders of a medical man, would not actually be carried out by him—for example, sick-nursing, courses of massage, Weir-Mitchell treatment, &c. The question therefore arises, Is an insured person entitled to full medical attendance and treatment of every kind for any affection or injury, save maternity, from which he or she may be suffering? That is, such treatment as would be received under ordinary circumstances by a person to whom expense was no consideration. If not so entitled, to what extent is the treatment and attendance limited?

That the Act contemplates insured persons receiving some of the special forms of treatment indicated above may be inferred from other sections. Section 21, for instance, runs:—

> It shall be lawful for an approved society or Insurance Committee to grant such subscriptions or donations as it may think fit to hospitals, dispensaries, and other charitable institutions, or for the support of district nurses, and to appoint nurses for the purpose of visiting and nursing insured persons, and any sums so expended shall be treated as expenditure on such benefits under this part of this Act as may be prescribed.

This is a permissive section, but it is legitimate to infer that such subscriptions will not be granted unless the hospitals are utilised for the reception of insured persons, presumably surgical and serious medical cases. It is important to notice that the cost of neither this nor nursing necessarily comes out of the sum allocated for medical benefit. In Section 14, dealing with the rules which approved societies are empowered to make for the administration of sickness, disablement, and maternity benefit, we find "(2) no such rule shall prescribe any penalty ..... on account of the refusal by any such person to submit to a surgical operation or vaccination or inoculation of any kind, unless such refusal in the case of a surgical operation of a minor character is considered by the society or on appeal to the Insurance Commissioners, unreasonable." Clearly, again, the performance of both major and minor surgery is contemplated.

On the other hand, Section 15, which deals with the administration of medical benefit, shows that the Commissioners have discretionary powers. The essential clauses are—

> 1. Every Insurance Committee shall for the purpose of administrating medical benefit, make arrangements with duly qualified medical practitioners in accordance with regulations made by the Insurance Commissioners.
> 2. The regulations made by the Insurance Commissioners shall provide for the arrangements made being subject to the approval of the Insurance Commissioners and being such as to secure that insured persons shall, save as hereinafter provided, receive adequate medical attendance and treatment from the medical practitioners with whom arrangements are so made.....

[1] Article I. was published in THE LANCET of Feb. 10th, p. 383.

Then follow the clauses dealing with the preparation of lists of medical men to attend insured persons, and the section continues:—

> Provided that, if the Insurance Commissioners are satisfied after inquiry that the practitioners included in any list are not such as to secure an adequate medical service in any area, they may dispense with the necessity of the adoption of such system as aforesaid as respects that area, and authorise the Committee to make such other arrangements as the Commissioners may approve; or the Commissioners may themselves make such other arrangements as they think fit.....

It will be noticed that the word "adequate" is used twice in this section, but no indication is given of the meaning to be attached to it. Apparently the Commissioners are to be the sole judge of what is or is not adequate medical attendance and treatment, and they may be influenced by considerations other than those purely medical. The arrangements are to be made with "duly qualified medical practitioners.' If this meant *general* practitioners clearly the service would be limited to such treatment as they could give, and would, as a rule, exclude major surgery. But consultant physicians and surgeons are undoubtedly also "medical practitioners," and the Commissioners might consider a service inadequate which did not include a certain number of such upon each panel, or they might feel constrained to make additional arrangements for the performance of surgery and other special services.

The above considerations have been brought forward for the purpose of showing how extremely indefinite the Act is on the question of medical treatment and attendance, and how wide the powers of the Commissioners are. Until the regulations are published, it will be impossible to determine the services which are to be performed by medical men, and how far hospitals and other institutions will be utilised to reduce the amount of attendance necessary. Further, the profession is not justified in assuming that remuneration will come to them only out of the fund for medical benefit. While, as shown above, part of the actual medical treatment may be paid for out of other funds, services may be required from medical men in connexion with each of the other benefits for which they will be fully entitled to demand remuneration.

Suspension of Medical Benefit.

It is convenient here to consider what is likely to be the immediate consequence should medical practitioners decline to enter into contracts under the Act.

Section 15 provides that when in any area the Commissioners consider the service inadequate they "may suspend the right to medical benefit in respect of any insured persons in the area for such period as they think fit, and pay to each such person a sum equal to the estimated cost of his medical benefit during that period, and, where the Commissioners take any such action, themselves they shall retain and apply for the purpose such part of the sums payable to the Insurance Committee in respect of medical benefit as may be required."

An insured person will accordingly receive his money equivalent of medical benefit and will go and make his own arrangements for medical attendance, in most cases through the Friendly Society of which he is a member. Will not this be, in effect, largely reverting to the position which existed on the introduction of the Bill—viz, control of medical benefit by friendly societies? However just the opposition to the Act, the profession has no fresh cause of quarrel with Friendly Societies. Medical officers of such institutions might refuse to take new members at the old rates, but many are under contracts as regards existing members which they would find difficult to break. The experience of the past in the matter of Friendly Society appointments and united action has not been very encouraging.

Sanatorium Benefit.

"Treatment in sanatoria or other institutions or otherwise when suffering from tuberculosis, or such other diseases as the Local Government Board with the approval of the Treasury may appoint." In Section 16 it is amplified to include (*a*) treatment "in sanatoria and other institutions, with persons or local authorities (other than poor law authorities) having the management of sanatoria or other institutions approved by the Local Government Board"; and (*b*) treatment "otherwise than in sanatoria or other institutions, with persons and local authorities (other than poor law authorities) undertaking such treatment in a manner approved by the Local Government Board."

The administration of sanatorium benefit is in the hands of the Insurance Committees, but the arrangements must be "to the satisfaction of the Insurance Commissioners." A million and a half sterling is available for the founding of institutions under the direction of the Local Government Board, and a million annually for their maintenance.

It will be seen that the widest possible latitude is allowed as to the methods of procedure to be followed. Sanatoria in the limited sense of the word and hospitals for advanced cases may be built and maintained. Anti-tuberculosis dispensaries may be established in every district. There is nothing in the Act to prevent such institutions being staffed by local medical men, nor is there any reason why all the practitioners on a panel should not be recognised by the Insurance Committee as persons "undertaking treatment" within the meaning of Section 15, providing the treatment is in a manner approved by the Local Government Board. In view of the frequency of tuberculosis this opens up important possibilities. It would be quite legal for arrangements to be made whereby a general practitioner continues to treat a case of tuberculosis himself, but is able to command the assistance of a local antituberculosis dispensary for making bacteriological and other investigations and applying special forms of treatment. The person so treated would become the recipient of sanatorium benefit and the Insurance Committee would have the power of paying his medical attendant a fee from the fund available for sanatorium benefit in respect of him. It is, indeed, in the best interests of the service that medical men on the panel should be closely in touch with the administration of sanatorium benefit, for by that means early and efficient treatment of cases of tuberculosis will be secured.

Maternity Benefit.

The Act imposes no obligation upon a woman to be treated by a medical man during parturition. The benefit, a sum of 30*s*., is to be administered by approved societies, and may be in cash or otherwise. Medical men will treat such persons as private patients, but presumably they will demand higher fees from those in receipt of maternity benefit than they now get.

There is a curious provision in Section 18. The last paragraph, after stating that a woman shall have the choice of being attended by a medical practitioner or midwife, continues: "but if, in the case of a midwife being selected, a duly qualified medical practitioner is subsequently summoned in pursuance of the rules made under the Midwives Act, 1902, the prescribed fee shall, subject to regulations made by the Insurance Commissioners, be recoverable as part of the maternity benefit." It is not clear what is meant by the words "prescribed fee." No fee is mentioned in the Midwives Act, and as the arrangement will be a private one between doctor and patient in maternity cases, the Insurance Commissioners will not have the power to prescribe a fee. Under existing arrangements local authorities have agreed in some instances to pay a fee, usually of 1 guinea, to medical men called in under the Act. As the cases are specially difficult medical men have long felt that this remuneration is inadequate, and they would be fully justified in declining to treat insured persons under such circumstances at that fee.

Some interesting problems are likely to centre round the meaning to be attached to the word "confinement." Presumably it will not apply to expulsion of the uterine contents during the early months of gestation. It will be necessary therefore to fix a stage of development of the fœtus, after which the uninsured wife of an insured man will be able to claim maternity benefit. The same point will determine when an insured woman will be entitled to medical benefit for abortion, and when to maternity benefit. If any such rule as that which applies in the case of the Notification of Births Act—viz., 28 weeks' development—be adopted, difficulties will arise in practice. Theoretically, such a dividing line is excellent; practically, it cannot be determined without a considerable margin of error. In the case of the Notification of Births Act it does not seriously matter if a certain number of notifications of births under 28 weeks gestation are made. When the question of medical or maternity benefit is involved the circumstances will be more closely scrutinised. One can imagine the case where, in an uninsured woman, it has been decided to induce premature labour. If done to-day she receives no benefit; if postponed till next week, though perhaps prejudicial to her health, she receives maternity benefit.

Sickness and Disablement Benefits.

Sickness benefit is the right to periodical payments "whilst rendered incapable of work by some specific disease or by bodily or mental disablement." Disablement benefit is the right to payments after the termination of sickness benefit "so long as so rendered incapable of work by the disease or disablement."

These benefits are to be administered by approved societies, and do not, as far as the Act is concerned, directly affect medical men, since their contracts will only be with Insurance Committees. But it is obvious that for the proper discharge of their obligations approved societies will have to seek the assistance of medical practitioners. Medical certificates will be required to prove that persons are incapable of work from disease or disablement, and repetitions of these certificates at intervals so long as either benefit is claimed. Such certificates are not in the nature of medical treatment, and they impose legal responsibilities upon the persons who give them, possibly entailing attendance at civil or criminal courts. Medical men would, therefore, be justified in demanding fees for them, which would presumably be paid out of the funds available for sickness and disablement benefit. Nor are these the only medical services which may be required by approved societies. The section previously quoted places with them the obligation of determining, not only when refusal to submit to a surgical operation is "unreasonable," but what constitutes "minor" surgery. Further, the societies may make rules suspending the payment of sickness or disablement benefit on the ground that the disease or disablement has been caused by the misconduct of the person claiming the benefit. It is not likely that approved societies will settle these matters by the aid of lay opinion only.

Free Choice of Doctor.

Section 15 provides that an insured person may select from a list of medical practitioners the practitioner by whom he wishes to be attended, subject to the consent of that practitioner to attend him. The right of a practitioner to refuse persons is not absolutely unlimited, for persons who have been refused are to be distributed among the practitioners on the list, and thus a person who had been refused by every doctor would, in the end, come to one who had declined him. However, the distribution is to be made as far as possible by the practitioners themselves, and the number of such cases is not likely to be great.

A more important clause in this section is that which embodies what is known as the "Harmsworth" amendment. It provides that where persons are receiving medical attendance and treatment under any system or through any institution existing at the time of the passing of the Act such medical attendance and treatment, if approved by the Insurance Committee and Commissioners, may be treated as, or as part of, medical benefit; but no person is to be deprived under this clause of his right, if he so elects, to choose his own medical attendant.

It has been said that this provision will perpetuate the existence of institutes which provide medical attendance of an incomplete or unsatisfactory character among the poorer classes. But such a danger is probably sufficiently guarded against by the necessity of obtaining the approval of the Commissioners, and the retention by the members of the right of free choice of doctor. On the other hand, it safeguards the holders of certain existing appointments which nobody wishes to disturb. There are cases where medical men have been appointed by the management of firms or public companies to look after the health of their employés upon terms and conditions satisfactory to all parties. Such arrangements can thus be continued unchanged.

Control of the Medical Service.

The Bill when first introduced placed the administration of medical benefit in the hands of approved societies. By amendments made later it was assigned to the Insurance Committees. But owing to the constitution of these bodies it is argued that the administration will still be by approved societies, but under another name. Three-fifths of the total number are to be representatives of insured persons, and one-fifth is to be appointed by the county or borough council. Two members are to be elected by local medical practitioners, and one, two, or three medical practitioners are to be appointed by the County or borough council according to the size of the committee. The remaining members are to be appointed by the Insurance Commissioners.

If "administration" connoted "control" it is undoubted that the powers of the profession would be limited to stating their case. But perusal of the Act makes it clear that by far the largest element of control will rest with the Commissioners. In practically every matter the Committees have to act in accordance with regulations made by the Commissioners, and every arrangement has to receive the approval or consent of the Commissioners, including the arrangements made with medical practitioners and the administration of medical benefit. The Insurance Committees cannot remove a medical man from the panel, nor can they contract separately with any individual practitioner. For the protection of their interests, therefore, the profession should in the first instance look to the Insurance Commissioners. This body is required by the Act to set up as soon as possible an Advisory Committee to assist it in the framing of the regulations, and the medical profession has been promised an opportunity of nominating as members of the Committee medical men who have had personal experience of general practice. In view of the importance of the regulations, is it not a tactical mistake for the profession to decline to appoint these representatives? By making the appointments it does not in any way commit medical men to working under the Act, while if the regulations should prove unsatisfactory the profession is in a stronger position to win public support if it can say that no effort has been spared to make the present Act workable.

A local medical committee may be formed in each district, and, provided it is representative of the medical practitioners resident in that district, the Insurance Committee is required by the Act to consult it upon all general questions affecting the administration of medical benefit, including the arrangements made with medical practitioners. The constitution of these committees is left entirely to the medical men. They will be of value in helping to secure unanimity of action, not only in each district, but throughout the whole country. If formed in the first instance for the purpose, they will be able to appoint the local medical representatives upon the Insurance Committees. Medical committees will possess no direct controlling power, but their moral effect may be considerable. The lay members of an Insurance Committee will require strong justification to override the deliberately expressed wishes of the majority of the medical men in the neighbourhood.

The Insurance Commissioners may require the medical committees to perform other duties and exercise other powers. It is impossible to forecast these duties, but it would conduce to the efficiency of the service if they included the power to investigate cases of alleged malingering. They might well also be given the right to inquire into anything of the nature of unprofessional conduct by medical men, and to exercise, where necessary, modified disciplinary powers. While every medical man has a statutory right to be on the panel in his district (or, if necessary, on two or more panels), the power to remove a name rests solely with the Commissioners, who, however, cannot act until after inquiry. As the Act does not lay down any special form of procedure for the inquiry, the profession might quite reasonably ask that it should be in the first place conducted by the local medical committee.

MEDICO-PSYCHOLOGICAL ASSOCIATION OF GREAT BRITAIN AND IRELAND.—The next quarterly meeting of this association will be held at the London County Asylum, Long Grove, Epsom, on Feb. 22nd, under the presidency of Dr. W. R. Dawson. At 11 A.M. there will be an inspection of the buildings, when a description of the asylum and its heating and lighting arrangements will be given by Mr. T. G. Hine, the architect, and Mr. W. Clifford Smith, M.Inst.C.E., respectively. At 2.15 P.M. Dr. G. F. Barham and his colleagues will give a clinical demonstration of cases of interest; Dr. David Blair (Lancaster) will read a paper on Forced Feeding; and the following papers will, so far as time permits, be read by members of the medical staff at Long Grove: Dr. Barham, Insanity with Myxœdema; Dr. Bernard Hart, a case of Double Personality; Dr. Edward Mapother, Aphasia in General Paralysis and the Conditions Associated with It; and Dr. J. E. Martin, a case of Hysterical Hemianæsthesia with Torticollis and Talipes.

REPORT AND PAPERS ON EPIDEMIC POLIOMYELITIS.

THIS report, which has just been presented to the Local Government Board, is divided into five sections:—1. Dr. R. J. Reece on the Prevalence of Acute Poliomyelitis in Devonshire and Cornwall in 1911. 2. Dr. Reginald A. Farrar on Outbreaks of Disease affecting the Cerebro-Spinal System in the Midland Counties and in Dorsetshire, 1910. 3. Dr. Mervyn Gordon on Acute Poliomyelitis with Reference to its Etiology, Histology, and as to Immunity. 4. Dr. Mervyn Gordon on the Result of the Examination of Materials Received in Connexion with Dr. Reece's Inquiry in Devon and Cornwall. 5. Clinical and Epidemiological Notes on Epidemic Poliomyelitis, by Dr. Hugh A. Macewen.

The report is prefaced by an introduction by Dr. Newsholme, principal medical officer to the Board, and a copy of the memorandum on Acute Poliomyelitis circulated to the sanitary authorities in December, 1911.

Section 1: Outbreaks in Cornwall and Devon.

The attention of the Local Government Board having been called at the end of July, 1911, to several cases of illness which were considered to be of the nature of cerebro-spinal meningitis in the neighbourhood of Holsworthy in North Devon, Dr. Reece was sent down to investigate the matter.[1] He found that the illness was more widespread than had been at first suspected, and that cases occurred throughout Devon and Cornwall. A map is appended to the report which shows the distribution of the 154 known cases. Of these, 42 occurred in the rural district of Holsworthy, 17 in the Bideford district, 15 in South Molton district (all within a small radius of one another), and the remainder at various points throughout Devon and Cornwall. The list does not include the borough of Plymouth and Devonport, in which many cases were known to occur. Death took place in 34 of the 154 cases—a case fatality of 22·1 per cent., which is higher than most of the epidemics abroad, and, as the writer points out, is consistent with the view that the mild cases have escaped recognition.

A series of tables dealing with age-incidence, seat of paralysis, and time after the onset of disease at which death occurred are given, together with certain climatic, topographical, and industrial details. The clinical characters are analysed, and it is stated that examples of all the different types of the disease, as given by Wickman, were observed, except the "ataxic" type. The relative frequency of such symptoms as rise of temperature, headache, vomiting, convulsions, hyperæsthesia, anæsthesia, Kernig's sign, condition of reflexes, epistaxis, retraction of the head and neck, rashes, herpes, and sweating are given. It is interesting to note that in 14 cases definite hyperæsthesia is said to have been present, and in one case almost complete anæsthesia.

Kernig's sign was recorded as being present in 63 cases and absent in 41; in 50 cases there was no record. The writer of the report goes on to say: "As to whether it is elicited in certain cases must depend on the personal factor of the examiners; many persons in health cannot completely extend the leg on the thigh when the latter is flexed, and this fact leads to uncertainty with regard to Kernig's sign when the examiner has never examined a case where the sign is undoubtedly present." There seems some confusion here as to how the clinical sign should be elicited. It is, however, a matter of small importance, for Kernig's sign is of little or no diagnostic value. It is notable that the patellar reflex is only recorded in some 80 out of the 154 cases, and the condition of the plantar reflex is not recorded in precise terms. Herpes is described as occurring 7 times, twice in the form of herpes labialis. The report states that multiple cases in a household were met with in 11 instances. In 4 instances there were 2 cases, in 2 there were 3 cases, in 4 there were 4 cases, and in 1 instance 6 cases in a house.

The possible transportation of infection by an apparently healthy carrier is next dealt with, and a most interesting instance is given in which the father of a child with undoubted poliomyelitis apparently carried the infection to two children in an isolated farm ten miles distant. A second instance is given in which a nurse washed the body of a child who had died from the disease and subsequently attended a woman in her confinement. This woman on the sixth day after delivery had a series of convulsions associated with albuminuria and paralysis of the left arm. The diagnosis here of poliomyelitis is very arguable, for the case would seem more probably to be one of eclampsia. The examination of the cerebro-spinal fluid has been made in very few caess, as the reports say it has been most difficult to obtain these for examination. The report mentions the possibility of the disease occurring in animals, and gives facts with regard to the sudden death of two pigs and other animals in association with cases of the disease.

One of the most interesting features in the report is that of an epidemic disease which occurred at Stoke Rivers, a small village seven miles from Barnstaple, and was investigated by Dr. Harper and Dr. Adkins. (The cases in this epidemic are not included in the 154 cases mentioned above.) This village has 18 houses and a population of 119 persons. Of these, 61 were above school age, 43 attended school, and 15 were below school age. In this community 36 persons were attacked with illness—35 during the month of September and 1 in August; 9 other persons suffered in a minor degree. Of these 36 persons, 4 were over school age, 6 were under school age, and 26 were attending school. 14 out of the 18 houses in the village were affected.

The details afford most interesting reading. The illness was attended by headache, vomiting, sore-throat, fever, and diarrhœa. The absence of the knee jerk which attended or followed the illness was the most constant feature. In only three of these cases did paralysis occur. Two children had facial paralysis, and one lad, aged 17, had still on Oct. 8th "difficulty in standing."

Dr. Adkins says: "The facts are put on record for what they are worth." The writer of the Local Government report says it is difficult to resist the conclusion that certain of the cases above detailed were attacks of poliomyelitis. The conclusion is of course speculative, for among the whole 36 cases there is not a single case of definite poliomyelitis. It is admitted by all that facial paralysis, although occasionally a manifestation of poliomyelitis, is yet much more frequently due to some septic infection arising from the teeth or throat. Again, the case of the boy aged 17 with weakness of the legs cannot be accepted as an undoubted case of poliomyelitis. In none of the epidemics of poliomyelitis so far reported has the proportion of "abortive" cases amounted to 92 per cent. Neither have they failed to contain instances of the common type. Before accepting an epidemic with such unusual features as due to poliomyelitis, far more proof would be required, both with regard to the faucial conditions and also in regard to the cerebro-spinal fluid. Although we may be critical of the deductions, no one can fail to appreciate the admirable way in which the Stoke Rivers epidemic has been worked out.

Dr. Reece comments on the sanitary administration in Devon and Cornwall, and calls attention to the inadequate provision for dealing with infective disease in these two counties. Photographs of the "isolation hospital" of the urban and rural district council of Holsworthy are given. The difficulty of dealing with an infective person is shown by the case of a nurse who, taken ill during the performance of her duties, would, but for the kindness of the medical attendant who took her into his own house, have been left without a refuge.

Outbreaks in Midland Counties and Dorset.

The second section deals with an outbreak of disease affecting the cerebro-spinal system in the Midland counties and an epidemic of poliomyelitis in Dorset in 1910. The cases occurred in Nottingham and in the Melton Mowbray district. Information was obtained with regard to 83 cases; 11 of these occurred in the city of Nottingham. Of these 11 cases 6 were fatal; 1 on post-mortem examination was a case of streptococcal meningitis, another probably tuberculous meningitis, and in 6 a "Gram-negative" diplococcus was found. Dr. Farrar concludes that there were 8 cases occurring in Nottingham and 1 at Barlestone which must be regarded as true cerebro-spinal fever, leaving 74 cases which belong to a different category. He gives good reason for regarding these 74 cases as poliomyelitis, since practically all had localised paralysis of a muscle or groups of muscles, and as he points out this is a characteristic feature of poliomyelitis and a rare manifestation of cerebro-spinal fever. He also notes the age-incidence

[1] THE LANCET, Sept. 16th (p. 843) and 23rd (p. 896), 1911.

and the occurrence of the disease during the summer in support of the view that they were cases of poliomyelitis. In only 9 cases was the cerebro-spinal fluid withdrawn by lumbar puncture, and in only 4 of these was it examined, and in all of them an excess of polynuclear leucocytes was present, which would seem to point to a meningitis. In conclusion, Dr. Farrar says that pathological investigation, so far as it was carried out in respect to the 74 cases under consideration, gave no support to the view that any of these were cases of cerebro-spinal fever, and he has no hesitation in concluding that the outbreak was one of epidemic poliomyelitis, and not of cerebro-spinal fever.

The outbreak at Cerne Abbas and Up Cerne in Dorset occurred between Sept. 29th and Oct. 21st, 1910. In these little hamlets 16 cases occurred with 2 deaths. The history of these cases is given in detail. Multiple attacks occurred in three households—viz., three cases in one household and two in each of the others. The cerebro-spinal fluid was not examined in any case. The origin of the outbreak could not be discovered, but the village is a frequent resort of visitors from Dorchester and Weymouth.

Experimental and Pathological Investigations.

In the third section Dr. Mervyn Gordon gives a good digest of the work on experimental poliomyelitis in monkeys, and details as to the nature of the virus. He states that the recognition of poliomyelitis in fatal cases is easy, owing to the very characteristic histological lesions which occur in the cord. He gives a table showing the chief points of distinction between a meningococcal meningitis, a septic meningitis, a tuberculous meningitis, and a poliomyelitis.

In the fourth section Dr. Mervyn Gordon gives the results obtained from examination of material received from the cases in Devon and Cornwall. He states that the cells present in the cerebro-spinal fluid were lymphocytes, but he does not give the number of specimens examined. He suggests that the retention of the capacity of the cerebro-spinal fluid in poliomyelitis to reduce Fehling's solution may be of value in the distinction between the cerebro-spinal fluid of poliomyelitis and that of tuberculous meningitis. A series of excellent photographs are given illustrating the changes found in cases of acute poliomyelitis. He acknowledges his indebtedness to the courtesy of Professor Levaditi, of Paris, for the animal experiments he has carried out with the material from this outbreak. Professor Levaditi reported that two monkeys injected with emulsions of the cord from two cases developed typical poliomyelitis.

Clinical and Epidemiological Aspects.

The fifth section is a digest of the clinical and epidemiological aspects of acute poliomyelitis compiled by Dr. Macewen from various sources.

Dr. Newsholme in his introduction notes the importance of watching for the occurrence of epidemic poliomyelitis in England in order to take a suitable opportunity to make a comprehensive study of its clinical and epidemiological characters. He summarises the facts which have already been given in the above report, and states that "it is evident that much further research work is needed both in the laboratory and by exact and painstaking inquiry into the circumstances of local outbreaks, with a view to the more exact determination of means of communication of this disease, and to the discovery of practically available methods of recognising the presence of infection in early cases of suspected disease, and in contact with known cases of the disease."

EIGHTH CONGRESS OF THE GERMAN ROENTGEN SOCIETY.—This Congress will take place at Berlin (Langenbeckhaus) on Sunday, April 14th, commencing at 9 A.M. punctually. On the previous evening at 8 P.M. any projections which may be necessary to show in connexion with the next day's papers will be then exhibited in order to unburden the proceedings on the Sunday. Papers and demonstrations must be sent before March 1st to Herr Dr. Immelmann, Lützowstrasse, 72, Berlin, W. 35. Communications with respect to membership and subscriptions should be made to Herr Melzer, Ziegelstrasse, 10/11, Berlin, N. 24. Dr. A. Köhler, of Wiesbaden, is the President for the year 1912.

VENTILATION AND OZONE.

AT a meeting of the Royal Society of Arts held on Feb. 7th, Lord Sanderson being in the chair, Dr. Leonard Hill read a paper entitled "The Influence of Ozone in Ventilation."

Chemical Purity of the Air.

At the commencement of the paper, which was a joint communication by himself and Dr. Martin Flack, and occupied about an hour in delivery, Dr. Hill said that the good effects which resulted from efficient ventilation and open-air treatment were generally supposed to be due to the chemical purity of the air, but this was an error, because the effects in question were really due to the movement, coolness, and relative humidity of the air, and to the ceaseless variations of these qualities. The chemical purity of the air could be considered from three points of view—namely, the concentration of carbon dioxide, the concentration of oxygen, and the supposed presence of organic poison exhaled in the breath.

Concentration of Carbon Dioxide.

It was an error to imagine that respired air was rendered poisonous by the presence of carbon dioxide in amounts exceeding a very few parts per 1000. The truth of the matter was quite otherwise, for whatever the percentage of carbon dioxide in the atmosphere might be, that in the pulmonary air was kept constant at about 5 per cent. of an atmosphere by the action of the respiratory centre. At each breath a person rebreathed into his lungs the air in the nose and large air-tubes (the dead space air), and about one-third of the air which was inhaled into the lungs was "dead space" air. This re-breathing of one's own breath was a natural and inevitable performance for both human beings and the lower animals. By a series of observations made on rats confined in cages with small ill-ventilated sleeping chambers Dr. Hill and Dr. Flack found that the temperature and humidity of the air—not the carbon dioxide and oxygen concentration of the air—determined whether the animals stayed inside the sleeping chamber or came outside. If the air was cold they stayed inside, even when the carbon dioxide rose to 4 or 5 per cent. of an atmosphere. When the sleeping chamber was made too hot and moist they came outside.

In breweries the men who tended the fermentation vats worked for long hours in concentrations of carbon dioxide of 0·5 to 1·5 per cent., and such men were no less healthy and long-lived than those engaged in other processes of the brewing trade. It was only at higher concentrations of carbon dioxide, such as 3 to 4 per cent. of an atmosphere, that the respiration was increased so as to become noticeable to the individual himself; the limit of panting was then soon reached and the power to do work was checked. Divers who followed their occupation in diving dresses and men employed in compressed-air caissons constantly worked in concentrations of carbon dioxide higher than 1 per cent. of an atmosphere, and so long as the carbon dioxide was kept below 2 to 3 per cent. of an atmosphere they were capable of doing efficient work.

Concentration of Oxygen.

Turning now to the question of the percentage of oxygen present in inhaled air, Dr. Hill said that the oxygen in the worst ventilated schoolroom, chapel, or theatre was never lessened by more than 1 per cent. of an atmosphere, but in all the noted health resorts of the Swiss mountains, such as St. Moritz, the concentration of oxygen was considerably less than this. In Potosi, a city of 100,000 inhabitants at an altitude of 4165 metres in the Andes, the barometric pressure was only about 450 millimetres of mercury, but the people nevertheless displayed great agility in dancing and in bull-fights. Dr. Hill and Dr. Flack had watched students shut up in an air-tight chamber until they came to breathe air containing 3·5 per cent. of carbon dioxide and only about 16 per cent. of oxygen—air in which they found they were unable to light a match and smoke a cigarette. There was then too low a percentage of oxygen to support combustion, but of this the occupants of the chamber were quite unaware. All the evidence went to show that it was only when oxygen

was lowered below a pressure of 14 to 15 per cent. of an atmosphere that signs of bodily distress for want of oxygen arose.

Supposed Presence of Organic Poisons.

The facts already mentioned with regard to the atmosphere in which certain brewery workers, caisson workers, and divers followed their occupation proved that concentrations of carbon dioxide such as occurred in the most crowded and worst ventilated rooms were not directly injurious to health. Forced to admit this, the hygienist has fallen back on the hypothesis that organic chemical poisons were exhaled in the breath, and that the percentage of carbon dioxide was a valuable guide to the concentration of these. It was necessary, said the hygienist, to keep the carbon dioxide below 0·1 part per 1000, so that the organic poisons might not collect to a harmful extent. The supposed existence of organic chemical poison in the expired air was based upon experiments made by Brown-Séquard and d'Arsonval, who injected into guinea-pigs and rabbits either the condensation water obtained from the breath or water which they had used several times over to wash out the trachea of dogs. The water was injected subcutaneously and in large amounts, and produced in their hands signs of illness, collapse, and death. A few confirmatory results have been obtained by some experimenters who used such absurd methods of investigation as to collect condensation water by breathing through a cooled flask and to inject 1 or 2 cubic centimetres of this fluid into a mouse weighing about 13 grammes, a proceeding equivalent to injecting 5 litres of water into a man weighing 65 kilogrammes. Who would not be made ill by the injection of about 9 pints of cold water beneath his skin? The experiments of Brown-Séquard and d'Arsonval have been repeated by many others, and with negative results by those whose methods of work demand most respect—Dastre and Loye, Van Hofmann, Wellenhof, Lehmann and Jessen, Haldane and Smith, and Weir Mitchell and Borgey.

Brown-Séquard and d'Arsonval in their experiments either (1) gave intravenous or subcutaneous injections of condensation water from the breath or washings from the trachea, or (2) they kept animals in cages communicating in series, a current of air being drawn throughout the entire length of the series. Dr. Hill and Dr. Flack suggested that the deaths of injected animals were due either to the excessive amount of the fluid injected or to the inclusion in it of droplets of saliva which produced the well-known phenomena of the anaphylactic shock. Anaphylaxis signified the condition in which an animal became sensitised by the subcutaneous injection of a protein derived from an animal of a different species, and an animal thus sensitised might be poisoned by a subsequent injection of the same protein. When the animals in the last of the series of cages died, the fatal effect was probably due to suffocation from the proportion of carbon dioxide in the air having been allowed to rise to 10 or 12 per cent. Dr. Hill and Dr. Flack, after studying the literature of the subject and making various experiments, have come to the conclusion that there was not at present any trustworthy evidence of the presence of organic chemical poisons in exhaled air.

Effects of Electric Fans.

They enclosed eight students in a small chamber holding about three cubic metres of air and kept them therein until the carbon dioxide had reached 3 or 4 per cent. and the oxygen had fallen to 17 or 16 per cent. The wet-bulb thermometer rose meanwhile to about 85° F. and the dry-bulb thermometer to one or two degrees higher. The discomfort was very great, but this was relieved to an astonishing extent when electric fans placed in the roof were set in motion, whirling the air in the chamber, and so cooling the bodies of the students. In a crowded room the air confined between the bodies and clothes of the people was almost warmed up to body temperature and saturated with moisture, so that cooling of the body by radiation, convection, or evaporation became nearly impossible. This led to sweating, wetness and flushing of the skin, and a rise of skin temperature. The blood was sent to the skin and stagnated there instead of passing through the brain and viscera. Hence arose the feelings of discomfort and fatigue, but the fans whirled away the layer of stationary wet air round the students' bodies, replacing it by the somewhat cooler and drier air in the rest of the chamber, and so relieved the heat stagnation from which they suffered.

Prophylaxis of Catarrhal Infections.

Catarrhal infections of bacterial origin were spread by the expulsion of droplets of saliva during the acts of speaking, coughing, or sneezing, and could not be prevented by ventilation. The true prophylactic against such infections was the avoidance of whatever might diminish the natural immunising power of the animal organism. Exposure to overheated dry air dried up not only the skin but the membranes of the nose and throat, and so lessened immunity. Exposure to overheated moist air brought the blood into the skin, lessened the circulation through the viscera, and decreased the evaporation from the respiratory tract; the system also suffered from the absence of the stimulating effect of cold on the cutaneous nerves. Hence arose diminished health and strength together with increased susceptibility to catarrh. Those who habitually exposed themselves to cold rarely took cold. Confinement in overheated stagnant air, which too often pervaded places of business and amusement, was one of the chief causes of the depressed physical and mental vigour of town dwellers.

Properties of Ozone.

Dr. Hill here showed an automatic ventilating fan to be inserted in the window of an apartment; at temperatures below 60° F. it remained closed but above 60° it remained open. He also showed some ozone-generating apparatus of the Ozonair Company. Each complete element of this apparatus consisted of a thin sheet of micanite covered on each side by a square of gauze made of an aluminium alloy and having 40 meshes to the inch. Ozone was produced by the silent discharge of a high-tension electric current from one sheet of gauze to the other across the micanite. Mammals exposed to different concentrations of ozone in a closed chamber were killed by prolonged breathing of an atmosphere containing about 20 parts of ozone per 1,000,000 parts of air, the cause of death being an acute irritative inflammation of the respiratory tract. The ozone in such concentrations made the eyes water and caused coughing. When ozone was employed in ventilation it was arranged so as to produce none of these symptoms of irritation. Ozone could be used in high concentrations for sterilising water, this being one of its most valuable applications. It also destroyed all disagreeable smells. Ozone itself had a peculiar odour, which could be perceived by the nose in concentrations of far less than 1 part in 1,000,000, and for continuous breathing it should be present in concentrations not greater than that which was scarcely perceptible by the nose. Its powerful deodorising properties made it useful in places where offensive trades were carried on, and in improving the atmosphere of tube railways.

MEDICINE AND THE LAW.

Thirty Years of Unqualified Practice.

BEFORE the stipendiary magistrate at Leeds, William Henry Gisburne Bowell, 72 years of age, was recently charged upon five summonses with offences under Section 40 of the Medical Act of 1858, and having been convicted upon one was fined £10, including costs, the other four charges not being proceeded with. Section 40, it will be remembered, is directed against persons who falsely and wilfully pretend to be qualified medical practitioners, the taking or using of titles implying medical qualifications being a manner of committing the offence specially mentioned in the section in the form of an alternative. The career of the defendant has been somewhat remarkable, for he has apparently been generally regarded among his lay neighbours for many years as a qualified medical practitioner, although, presumably, such medical men as were aware of his existence knew that his name was not on the Medical Register.

In the case which was gone into before the magistrate the defendant's lack of qualification and his readiness to give certificates in his assumed character of medical practitioner were brought to light by the naval authorities at Sheerness in a manner unfortunate for the patient implicated in the transaction. A young seaman in the Royal Navy had gone to Leeds on furlough, and on the

way there had injured his knee. Desiring to prolong his leave on account of his injury, he obtained a certificate to that effect from Bowell, paying him a fee of half-a-crown. When it was noticed that the signature upon the certificate was not that of a registered practitioner the young sailor was punished for his action in presenting it by a fine and the loss of a stripe. Apparently the defendant had described himself in a local directory as a medical practitioner and surgeon, and had been acting as surgeon to a Friendly Society's lodge. It was urged on behalf of Bowell, who admitted his offence, that he had assisted an uncle, a qualified practitioner, in his practice from 1859 to 1874, and after that had done the same for a nephew, who succeeded the uncle, from 1874 to 1881, so that he had a lengthy experience. Since 1881 he had practised on his own account without anyone interfering with his doing so, but apparently not with any great success, as he was described by his advocate in an appeal for leniency as being in very poor circumstances. The fine ordered to be paid is half the maximum penalty allowed by the section, and under the conditions indicated will no doubt prove sufficient to prevent the repetition of the illegalities, but the case was not one where mercy was called for.

The local Friendly Society can hardly be congratulated upon the care exercised by it in the choice of a medical attendant for its members; but bone-setters and herbalists have been employed, we believe, by some clubs at the direct instance of their members. An interesting part of the case is the trouble that was brought upon the injured man, whose plight is a hard one. Bowell seems to have been absolutely accepted by the local community as a medical man, and the unlucky seaman went to him in all good faith.

The Chairman of the London County Council and the Council's By-laws.

Mr. Edward White, J.P., chairman of the London County Council, was summoned recently at Marylebone police court by the Marylebone borough council for having constructed at his residence in Upper Berkeley-street soil-pipes of iron instead of drawn lead with proper wiped plumber's joints, as required by by-laws of the London County Council, made under the Metropolis Management Acts of 1855 and 1899, and also for having the work carried out without having previously deposited "plans, sections, and particulars" of it with the borough council. After evidence had been given, and the point had been raised by Mr. White that to constitute an infringement of the by-law the soil pipe complained of must be inside the house, whereas a very small portion of it only was so situated, Mr. Plowden held that the by-law did not contemplate a pipe such as that in question, and that as the council had not satisfied him that the whole pipe was inside the house they could not succeed upon that point. With regard to the failure to deposit plans, he decided in favour of the council and against the defendant, whom he fined 10*s.* with 2*s.* costs. Mr. Plowden does not appear to have taken a very serious view of an offence by the chairman of the body responsible for the sanitation of the County of London against its sanitary by-laws. Nor does Mr. White himself appear to have expressed himself with any very great respect for the regulations made in the interest of the public health by the Council over which he presides, if Dr. C. Porter, medical officer of health of the Borough of Marylebone, is correctly reported to have said in evidence that when he called Mr. White's attention to the matter of the soil pipe he received the reply from Mr. White, who seemed surprised, that he "had had something to do with the passing of the by-laws and thought that some of them were a little silly." It can hardly be encouraging to a borough council in its efforts to secure proper sanitary conditions within its area to find the chairman of the Council of the metropolis describing that Council's own regulations, which it is the duty of the local authority to enforce, as "silly." Nor is a medical officer of health likely to find his own duties rendered more easy to perform by such a pronouncement. If the chairman of the London County Council considers its by-laws silly or not worth attention, his proper course would seem to be to obtain, or to endeavour to obtain, their amendment. Of course, we quite agree that Mr. White's default was only technical, and sympathise with him in having to pay a fine.

VITAL STATISTICS.

HEALTH OF ENGLISH TOWNS.

IN the 94 largest English towns having an estimated population of 17,559,219 persons in the middle of this year, 8799 births and 7276 deaths were registered during the week ending Feb. 10th. The annual rate of mortality in these towns, which had steadily increased from 14·8 to 18·6 per 1000 in the three preceding weeks, further rose to 21·6 per 1000 in the week under notice. During the first six weeks of the current quarter the mean annual death-rate in these large towns averaged 17·0 per 1000, while in London during the same period the average annual death-rate did not exceed 16·3 per 1000. The annual death-rates last week in the several towns ranged from 10·0 in Stockton-on-Tees, 10·1 in Walthamstow and in Southend-on-Sea, 10·7 in Ilford, 11·9 in Devonport, and 12·1 in Swindon, to 31·5 in Plymouth, 32·1 in Gloucester, 32·8 in Merthyr Tydfil, 34·2 in Aberdare, and 40·4 in Walsall.

The 7276 deaths from all causes in the 94 towns were 998 in excess of the number in the previous week, and included 435 which were referred to the principal epidemic diseases, against numbers rising from 297 to 401 in the three preceding weeks. These 435 deaths from the principal epidemic diseases included 186 from whooping-cough, 98 from measles, 64 from diphtheria, 49 from infantile diarrhœal diseases, 22 from scarlet fever, and 16 from enteric fever, but not one from small-pox. The mean annual death-rate from these diseases last week was equal to 1·3 per 1000, or 0·3 per 1000 above the average recorded in the five preceding weeks. The deaths attributed to whooping-cough, which had been 81, 94, and 166 in the three preceding weeks, further rose to 186 last week, and caused the highest annual death-rates of 2·4 in Barrow-in-Furness, 2·7 in Preston, 3·7 in St. Helens, 3·9 in Dewsbury, 4·5 in Walsall, and 5·7 in Merthyr Tydfil. The deaths referred to measles, which had been 64, 72, and 63 in the three previous weeks, rose to 98 last week; the highest annual death-rates from this disease were 1·2 in Manchester, 1·4 in Oldham, 1·8 in Newport (Mon.), and 7·1 in Warrington. The fatal cases of diphtheria numbered 64, against 60, 53, and 71 in the three preceding weeks, and included 15 in London and its 14 suburban districts, 4 in Bolton, and 3 each in Norwich, Plymouth, Nottingham, and Preston. The deaths attributed to infantile diarrhœal diseases, which had been 55, 47, and 67 in the three previous weeks, declined to 49 last week; 19 deaths were recorded in London and its suburban districts, 3 in Birmingham, 3 in Liverpool, and 3 in Manchester. The 22 deaths referred to scarlet fever were equal to the average recorded in the three preceding weeks, and included 4 which were registered in Liverpool. The 16 fatal cases of enteric fever, of which 4 occurred in Sheffield, were also equal to the average in the three previous weeks.

The number of scarlet fever patients under treatment in the Metropolitan Asylums and in the London Fever Hospital, which had steadily decreased from 2213 to 1500 in the 12 preceding weeks, slightly rose to 1512 on Saturday last; 178 new cases of this disease were admitted to these institutions during the week, against 162, 158, and 169 in the three preceding weeks. These hospitals also contained on Saturday last 1172 cases of diphtheria, 369 of whooping-cough, 137 of measles, 50 of enteric fever, and 2 of small-pox. The 1763 deaths from all causes registered in London were 225 in excess of the number in the previous week, and were equal to an annual death-rate of 20·3 per 1000. The deaths referred to diseases of the respiratory system, which had steadily increased from 290 to 394 in the four preceding weeks, further rose last week to 545, and were no fewer than 141 in excess of the number recorded in the corresponding week of last year.

Of the 7276 deaths in the 94 large towns 222 resulted from different forms of violence, and 541 were the subject of coroners' inquests. The causes of 85, or 1·2 per cent., of the deaths registered in the week under notice were not certified either by a registered medical practitioner or by a coroner after inquest. All the causes of death were duly certified in London and in 13 of its 14 suburban districts, in Leeds, Bristol, Bradford, Salford, Cardiff, Bolton, and in 44 other smaller towns. The 85 uncertified

causes of death last week included 18 in Birmingham, 17 in Liverpool, 5 in Sunderland, 4 in Nottingham, 4 in Manchester, and 3 each in Stoke-on-Trent, Coventry, Southport, and Darlington.

HEALTH OF SCOTCH TOWNS.

In the 18 largest Scotch towns having an estimated population of 2,182,400 persons in the middle of this year, 1080 births and 953 deaths were registered during the week ending Feb. 10th. The annual rate of mortality in these towns, which had increased from 17·3 to 19·1 in the three preceding weeks, further rose to 22·8 per 1000 in the week under notice. During the first six weeks of the current quarter the mean annual rate of mortality in these Scotch towns averaged 18·8 per 1000, and was 1·8 per 1000 above the mean rate recorded in the 94 large English towns during the same period. The annual death-rates in the several Scotch towns last week ranged from 10·4 in Govan, 11·3 in Motherwell, and 15·3 in Falkirk, to 26·6 in Glasgow, 29·5 in Greenock, and 31·8 in Perth.

The 953 deaths from all causes were 156 in excess of the number in the previous week, and included 100 which were referred to the principal epidemic diseases, against 89 and 100 in the two preceding weeks. Of these 100 deaths, 62 resulted from measles, 14 from whooping-cough, 13 from diphtheria, 6 from infantile diarrhœa, 3 from scarlet fever, and 2 from enteric fever, but not one from small-pox. These 100 deaths from the principal epidemic diseases were equal to an annual death-rate of 2·4 per 1000, or 1·1 per 1000 above that recorded in the 94 large English towns. The deaths attributed to measles, which had been 56, 39, and 55 in the three preceding weeks, further rose to 62 in the week under notice, and included 49 in Glasgow, 7 in Greenock, 2 in Edinburgh, and 2 in Aberdeen. The deaths referred to whooping-cough, which had been 18, 18, and 14 in the three previous weeks, were again 14 last week; and of this number 7 occurred in Glasgow and 3 in Coatbridge. The 13 fatal cases of diphtheria were 1 in excess of the average number in the five preceding weeks, and included 5 in Glasgow and 2 in Aberdeen. The deaths referred to infantile diarrhœal diseases, which had increased from 9 to 13 in the three preceding weeks, declined to 6 last week; 3 deaths were registered in Glasgow. The 3 fatal cases of scarlet fever were 2 fewer than the number in the previous week, and comprised 2 in Aberdeen and 1 in Partick. The 2 deaths attributed to enteric fever were registered in Glasgow and Hamilton respectively.

The deaths referred to diseases of the respiratory system, which had increased from 120 to 144 in the three preceding weeks, further rose to 220 last week; and 22 deaths resulted from different forms of violence.

HEALTH OF IRISH TOWNS.

In the 22 town districts of Ireland, having an estimated population of 1,157,014 persons in the middle of this year, 526 births and 688 deaths were registered during the week ending Feb. 10th. The annual rate of mortality in these towns, which had steadily increased from 18·0 to 24·6 per 1000 in the six preceding weeks, further rose to 31·0 per 1000 in the week under notice. During the first six weeks of the current quarter the mean annual death-rate in these Irish towns averaged 23·1 per 1000; in the 94 large English towns the mean annual death-rate during the same period did not exceed 17·0, while in the 18 Scotch towns it was equal to 18·8 per 1000. The annual death-rates in the several Irish towns last week were equal to 26·6 in Dublin (against 20·3 in London), 41·7 in Belfast, 23·8 in Cork, 20·4 in Londonderry, 17·7 in Limerick, and 20·9 in Waterford; while in the 16 smallest of these Irish towns the death-rate last week was equal to 27·5 per 1000.

The 688 deaths from all causes in the 22 Irish towns were 143 in excess of the number in the previous week, and included 49 which were referred to the principal epidemic diseases, against 30 and 31 in the two preceding weeks; of these 49 deaths, 25 resulted from whooping-cough, 8 from diarrhœal diseases, 6 from diphtheria, 5 from measles, 3 from enteric fever, and 2 from scarlet fever, but not one from small-pox. These 49 deaths from the principal epidemic diseases were equal to an annual death-rate of 2·2 per 1000; the death-rate from these diseases did not exceed 1·3 in the large English towns, while in the Scotch towns it was equal to 2·4 per 1000. The deaths attributed to whooping-cough, which had been 15 in each of the two preceding weeks, rose to 25 last week, and included 15 in Belfast and 5 in Dublin. The deaths referred to diarrhœal diseases, which had been 5 and 7 in the two previous weeks, were 8 last week, all but one of which related to infants under two years of age; 4 deaths were recorded in Dublin and 2 in Kilkenny. The fatal cases of diphtheria, which had been 3 in each of the four preceding weeks, rose to 6 last week, and comprised 3 in Dublin and 3 in Belfast. The 5 deaths attributed to measles were 3 in excess of the number in the previous week, and included 4 recorded in Dublin. The 3 deaths referred to enteric fever occurred in Dublin, Belfast, and Limerick respectively. The 2 fatal cases of scarlet fever, which were registered in Dublin and Galway respectively, were one fewer than the average in the three preceding weeks.

The deaths referred to diseases of the respiratory system, which had steadily increased from 83 to 184 in the seven preceding weeks, further rose to 239 in the week under notice. Of the 688 deaths from all causes in the 22 Irish towns last week, 185, or 27 per cent., occurred in public institutions, and 13 resulted from different forms of violence. The causes of 34, or 4·9 per cent., of the total deaths were not certified either by a registered medical practitioner or by a coroner after inquest; in the 94 large English towns the proportion of uncertified causes of death last week did not exceed 1·2 per cent.

THE SERVICES.

ROYAL NAVY MEDICAL SERVICE.

THE following appointments have been notified:—Fleet-Surgeons: J. McElwee to the *Indomitable*, and for general staff duties on transfer of flag; P. V. Jackson to the *Shannon*, and for general staff duties, on recommissioning; and E. A. Shaw to the *Antrim*, on recommissioning. Staff-Surgeons: A. R. H. Skey to the *Indomitable* on recommissioning, until she becomes flagship of Second Cruiser Squadron; N. H. Harris to the *Indomitable*, on transfer of flag; and E. F. Ellis to the *Shannon*, on recommissioning. Surgeons: G. A. Bradshaw to the *Bramble*, additional, and on recommissioning; and F. W. Quirk to the *Moorhen*.

ROYAL ARMY MEDICAL CORPS.

The undermentioned officers are placed on retired pay:—Lieutenant-Colonel Frederick P. Nichols (dated Feb. 9th, 1912). Major Ernest C. Anderson, D.S.O. (dated Jan. 30th, 1912).

The undermentioned Captains to be Majors (dated Jan. 25th, 1912):—William L. Baker, Frederick W. Cotton, Frank M. Parry, Bertram R. Dennis, William J. P. Adye-Curran, John Powell, William Bennett, Thomas Biggan, Basil S. Bartlett, Dermot O. Hyde, Albert E. Hamerton, D.S.O., George J. Houghton, John G. Churton, Arthur D. Waring, Alfred F. Weston, James Dorgan, Charles H. Furnivall, and FitzGerald G. FitzGerald.

Surgeon-General J. G. MacNeece, C.B., principal medical officer of the Sixth (Poona) Division, Southern Army, India, proceeds home. Colonel F. H. Treherne has taken up duty as Principal Medical Officer of the Bangalore and Southern Brigades at Ootacamund. Lieutenant-Colonel N. C. Ferguson, C.M.G., has taken over charge of the Military Hospital at York. Lieutenant-Colonel G. Cree, medical inspector of recruits in the Eastern Command, has been selected for the increased rate of pay under Article 317 of the Royal Warrant. Lieutenant-Colonel W. Turner has taken up duty in charge of the Connaught Hospital at Aldershot. Lieutenant-Colonel A. L. F. Bate has arrived home from India. Lieutenant-Colonel T. B. Winter has assumed command of No. 9 Company of the Royal Army Medical Corps at Colchester on appointment as Senior Medical Officer. Lieutenant-Colonel W. L. Gray has embarked for a tour of service in India.

Major H. N. Dunn, commanding the Station Hospital at Dagshai, Simla Hills, has been detailed for duty on board the hired transport s.s. *Dongola*, leaving Bombay for Southampton on Feb. 23rd. Major H. G. F. Stallard has been

transferred from Cherat to Peshawar. Major E P. Connolly has taken up duty with the Third (Lahore) Division of the Northern Army in India. Major A. W. Bewley has been transferred from Landour cantonment to Meerut. Major H. S. Taylor has been appointed to the Scottish Command. Major E. M. Morphew has taken up duty at Preston. Major F. J. W. Porter, D.S.O., has been transferred from Reading to the Military Hospital at Cosham. Major P. H. Collingwood has taken up duty at Plymouth. Major A. C. Fox has arrived home for duty from Hong-Kong. Major J. W. West has been appointed to Rawal Pindi. Major W. G. Beyts has been transferred from Ranikhet to command the Station Hospital at Roorkee.

Captain J. Tobin has been ordered to join at Gibraltar. Captain J. J. O'Keefe has been granted eight months' general leave of absence home from India. Captain W. J. Waters has joined for duty at Tientsin. Captain H. F. Shea has been appointed Surgical Specialist at the Station Hospital, Ambala. Captain F. A. Stephens has embarked for a tour of service in India. Captain J. S. Bostock has joined for duty at Delhi. Captain W. Davis has been transferred from Bareilly to the Station Hospital at Meerut. Captain W. J. S. Harvey has arrived in Jamaica for a tour of foreign service. Captain M. B. H. Ritchie has arrived home on leave of absence from India. Captain F. C. Lambert has been appointed to Preston for duty. Captain A. H. C. Gray has been selected for attachment to the Dublin University Contingent of the Senior Division, Officers Training Corps. Captain J. B. Meldon has been posted to the Military Hospital at Dover. Captain E. M. Glanvill has been transferred from Leeds to Newcastle. Captain H. Harding has taken up duty at York. Captain B. A. Craig has been appointed to the Royal Army Medical Corps Depôt at Aldershot for a course of instruction. Captain J. H. Campbell has joined for duty at Newport.

The following lieutenants have been appointed for duty: H. G. Monteith, D. W. Bruce, L. Buckley, A. G. J. MacIlwaine, and I. R. Hudleston to the Aldershot Command; and B. H. H. Spence, S. P. Sykes, E. J. H. Cowen, W. Stewart, and R. Davidson to the Eastern Command. Lieutenant D. H. C. MacArthur has been transferred from Dagshai to Ambala. Lieutenant C. H. O'Rorke has taken up duty at the Station Hospital, Bareilly. Lieutenant R. G. M. Kinkhead has been appointed to the Military Hospital at Queenstown. Lieutenant J. Gilmour has embarked for service in Egypt. Lieutenant P. M. J. Brett has been transferred from the Royal Victoria Hospital, Netley, to Cosham. Lieutenant M. White, on arrival in India, has been posted to Lucknow to undergo a course of instruction in military sanitation.

INDIAN MEDICAL SERVICE.

Colonel T. Grainger, C.B., has been selected for appointment as Principal Medical Officer of the Fifth (Mhow) Division, in succession to Colonel C. F. Willis, C.B. Lieutenant-Colonel A. W. Dawson has taken over civil medical charge of Roorkee in addition to his military duties, vice Captain J. J. O'Keefe, R.A.M.C.

Major E. F. G. Tucker has been appointed to officiate as Presidency Surgeon, Third District, and in medical charge of the Common Prison, House of Correction and Byculla Schools, Bombay, vice Major A. W. Tuke. The services of Major H. D. Peile, Superintendent of the Central Prison in the United Provinces of Oudh and Rohilkhand, have been placed at the disposal of the Home Department of the Government of India. Major R. H. Elliot has returned to India from leave of absence home. Major J. H. McDonald has been appointed Civil Surgeon at Surat, vice Major C. C. Murison transferred. Major J. W. Cornwall has been granted two years' furlough home from India.

The services of Captain J. E. Clements have been placed at the disposal of the Government of the United Provinces for employment in the Jail Department. Captain D. M. C. Church has been granted one year's leave of absence home from India. Captain V. B. Nesfield, officiating deputy sanitary commissioner, has been appointed to act as Civil Surgeon at Bijnor. The services of Captain S. B. Mehta have been replaced at the disposal of His Excellency the Commander-in-Chief. Captain R. B. Nicholson has been granted leave of absence for one year. Captain H. S. Hutchison has been appointed to officiate as Deputy Sanitary Commissioner for the Sind Registration District. Captain N. S. Wells has been granted one month's extension of his leave of absence home on the recommendation of a medical board. Captain W. P. G. Williams has been appointed to officiate as Superintendent of the Central Jail at Cannanore, Madras Presidency. Captain B. B. Paymaster has been granted two years' furlough. Captain R. E. Lloyd, professor of biology at the Medical College, Calcutta, has been granted two years' furlough home. Captain W. J. Frazer has been transferred from Chanda to Dehra Dun for a course of instruction at the X Ray Institute. Captain F. T. Thomson has been granted six months' leave of absence on the recommendation of a medical board. Captain J. B. Christian has been appointed Civil Surgeon at Tippera. Captain J. M. A. Macmillan has taken up duty at Hoshangabad as Civil Surgeon. Captain R. E. Wright has been appointed to officiate in the Bacteriological Department, and his services have been placed at the disposal of the Government of Madras. Captain A. G. McKendrick has taken up duty as Statistical Officer to the Government of India in the Sanitary and Medical Departments during the absence of Major S. P. James on deputation to visit the Panama Canal Zone and to attend the Far East Tropical Medical Association.

Lieutenant F. J. Kolaporewalla has been appointed a Specialist in the Prevention of Disease and placed in charge of the Bacteriological Research Laboratory at Rangoon. Lieutenant P. Connellan has been placed under orders to embark for India.

SPECIAL RESERVE OF OFFICERS.

Royal Army Medical Corps.

Lieutenant Charles W. C. Myles is seconded for service with the Dublin University Contingent, Officers Training Corps (dated Feb. 10th, 1912).

No. 18 Field Ambulance: Lieutenant Thomas Carnwath resigns his commission (dated Feb. 10th, 1912).

Correspondence.

"Audi alteram partem."

KING EDWARD'S HOSPITAL FUND FOR LONDON AND THE EVELINA HOSPITAL.

To the Editor of THE LANCET.

SIR,—We venture to trouble you with the following observations in order to remove a misapprehension as to the attitude of King Edward's Hospital Fund which may arise from the published letter of the chairman of the Evelina Hospital. In his statement of the reasons for the refusal of a grant by the King's Fund, the chairman presents the necessary result of a deliberate act of his committee as if it were the arbitrary act of the Fund; he has omitted to mention that in the Fund's official notification of the reasons why no grant could be made it was stated that "no application could be considered until *the regulations of the Revised Uniform System of Hospital Accounts were complied with by* the replacement of the sum of £3620 transferred from the General Fund to the Samaritan Fund."

The Revised Uniform System of Hospital Accounts was adopted in 1906 by the King's Fund, the Hospital Sunday Fund, and the Hospital Saturday Fund, with the concurrence of a representative committee of hospital secretaries in order to enable the yearly financial operations of the various London hospitals to be correctly compared. In fairness both to the hospitals generally and to the subscribing public the King's Fund is bound to see that the system is observed by institutions applying for grants.

The regulation which the Evelina committee have ignored is one not of form but of substance, and the effect on the accounts is important. A sum of £3620, which they have full power to apply to the general purposes of the hospital, particularly to meet a deficit in working, is shown on their balance-sheet under the heading specially reserved for funds which cannot be applied to meet a deficit in working or other general purposes. Similarly the income from this considerable sum is excluded from the income and expenditure account.

If, therefore, these accounts are published as being in accordance with the Revised Uniform System, the balance

sheet is to this extent incorrect and the income and expenditure account is incomplete; if these accounts are not intended to be interpreted according to the Uniform System, then the hospital committee are confessedly not observing the system and are making the hospital ineligible for a grant. There is thus nothing arbitrary in the King's Fund action; it is the automatic result of the free choice by the hospital committee of a course which inevitably produces this dilemma.

The Fund appreciates the courteous terms in which the chairman of the hospital refers to its previous relations with the Fund, but we must point out that the Fund has not interfered with the management of the hospital. The customary stipulation that there should be an inquiry officer can hardly be so described, and if it could it is not the point at issue. Even with regard to the method of publishing the accounts, the Fund is only concerned because the receipt of a grant would imply that the accounts were in the recognised form which enables the financial position and operations of one hospital to be compared with those of other hospitals. Unfortunately the accounts of the Evelina Hospital are not in this form.

We are, Sir, your obedient servants,

SAVILE CROSSLEY, JOHN G. GRIFFITHS, } Honorary Secretaries.

7, Walbrook, London, E.C., Feb. 8th, 1912.

M. BERGSON'S "CREATIVE EVOLUTION."

To the Editor of THE LANCET.

SIR,—Dr. R. F. Licorish has referred to me in his letter in THE LANCET of Feb. 10th on the above work, and I should like to be allowed to add a few observations. M. Bergson is not the first to deal with what I would call the "New Teleology." The first to raise the question of a "determining" power was James Croll in his essay, "What Determines Molecular Motion?—The Fundamental Problem of Life."[1] Darwin left it unanswered, but while his theory of natural selection only *assumes* the possibility of adaptive variations arising, what *causes* them is not suggested, beyond recognising some "direct action" of a changed environment. However, he more than once attributes them to the Creator.[2] Since, however, the existence of adaptive variations is (as he says) a mere "accident,"[3] there being no natural law of cause and effect to account for adaptations or uses, Haeckel was justified in saying, "Darwin gave us the clue to the monistic explanation of organisation,"[4] for any *directed* adaptation is incompatible with a non-directed accident.

As far as I know, the next attempt was in an article of my own on "Directivity" in the *Hibbert Journal*.[5] This word was coined by the eminent chemist, Sir H. H. Church, upwards of half a century ago. He told me that he felt the want of a word to express the fact that as he could "direct" various inorganic substances in his laboratory, with which, by synthetic processes, he could produce certain so-called organic compounds as madder, indigo, certain sugars, urea, &c., what is it in plants and animals which can do the same thing as himself? So he invented the word "directivity."

Directivity, however, covers a much wider ground than organic products, for it applies to the *making of any and every structure* which has some definite purpose in view. In other words, it lies at the basis of evolution. Scientists limit themselves to all phenomena which come under the possibilities of inorganic matter and force. What transcends their activities falls under philosophy and natural theology. Directivity stands on the borderland of both, as being a purely abstract term. But if we ask what or who directs? the only scientific answer is "Life."

The activities of life are observable, just as those of electricity, heat, magnetism, and other forces are; but we know no more of the *nature* of *force* than we do that of *life*. Dr. A. Russel Wallace in his latest work, "The World of Life, a Manifestation of Creative Power, Directive Minds, and Ultimate Purpose," would endeavour to combine "directivity" with, or as an "extension" of, natural selection; but, they are, in fact, mutually exclusive. He is right, however, when he says: "What we must assume is not merely a force, but some agency which can and does apply, direct, guide, and coördinate a great variety of forces ..... so as to build up that infinitely complex machine, the living organism, which is not only self-repairing but self-renewing, self-multiplying, *self-adapting to its ever-changing environment.*" These words which I have italicised remind me of the title to one of my volumes of the International Scientific Series—viz., "The Origin of Plant Structures by Self-adaptation to the Environment" (1895). Protoplasm has been called "Purposive Matter" as the cause of adaptations; but matter, being inert and lifeless, is powerless to do anything. It is the life infused in protoplasm which is the active agent throughout all the activities of organic beings. Similarly, the old term "Vital Force" is a misnomer, for no force is alive; but it is *Life* which *directs forces* to *move matter*, so that a purposeful, concrete, organic structure is the result.

The conclusion, therefore, is that directivity resides in life alone, and not in any force or kind of matter itself. Beyond that science cannot advance; but philosophy or natural theology takes up the question and returns to Paley, but with a change of the title. "Argument of Design" becomes "Self-adaptation" by response to changed conditions of the environment; the result is evolution under the directivity of life.

I am, Sir, yours faithfully,

Bournemouth, Feb. 11th, 1912. GEORGE HENSLOW.

To the Editor of THE LANCET.

SIR,—Dr. R. F. Licorish, in THE LANCET of Feb. 10th, advances what professes to be an interpretration of Bergson's philosophy. His main point is that Bergson agrees with the Neo-Lamarckians in believing in the inheritance of acquired characters. Bergson condemns the Neo-Darwinian theory as being an inadequate explanation of evolution, but the one point on which he agrees with the Neo-Darwinian is that a tendency to the inheritance of acquired characters, if it ever occurs, can occur but rarely. This is one of the most definitely expressed opinions in his "Évolution Créatrice."

I disagree absolutely with Bergson's theory, but this is no reason for allowing a serious misrepresentation of it to pass unnoticed. Fundamentally Bergson's idea of the universe is no more than a modernised version of Paley's "Evidences." It is perfectly obvious that the most modern of the most modern branches of science fail to explain many important phenomena, among them the origin of life and consequently of man's intellectual capacities. Failing the explanation of such phenomena, Bergson, following in the footsteps of many others of at least equal reputation, assumes the existence of a metaphysical power which has directed and continues to direct evolution. Whether, in the absence of physical evidence with regard to the cause of a phenomenon, it is justifiable to assume the existence of a power beyond our understanding and incapable of proof, must remain a matter for each to decide for himself. Personally, I prefer to wait with an open mind in the hope that some further evidence may be forthcoming.

The fact that has struck me most forcibly in Bergson's writings is his total misunderstanding of the theory of evolution by natural selection. His misrepresentation of the belief of the Neo-Darwinian is almost as grotesque as that of the Neo-Lamarckian. And the curious thing is, that one of the most important *raisons d'êtres* of his theory as propounded by himself is that the Neo-Darwinian theory is inadequate.

I am, Sir, yours faithfully,

Glasgow, Feb. 11th, 1912. CHARLES WALKER.

THE FATE OF THE APPENDIX AFTER ABSCESS FORMATION.

To the Editor of THE LANCET.

SIR,—I can fully endorse many of the points which Mr. Dodds-Parker has emphasised in his interesting and valuable contribution to the surgery of the appendix. That it is not only desirable but essential for the safety of the patient to perform a secondary operation for the removal of the appendix after it has been the seat of suppuration there can be no doubt whatever; it is a damaged organ and is therefore liable to be the cause of further trouble. I have often seen it distorted in outline, kinked, or bound down by

[1] Phil. Mag., July, 1872.
[2] See Origin, &c., the last sentence.
[3] An. and Pits., under Dom., ii., p. 431.
[4] Riddle, &c., 264, 5.
[5] Vol. vi., p. 159.

adhesions, and I have also seen the distal part almost separated except for a band of cicatricial tissue. At the same time I suppose every surgeon can recall cases in which there has been no more trouble after an appendix abscess after the lapse of years, and where the patient was willing to run the risk rather than undergo a secondary operation; although this may occasionally happen it is well recognised that further trouble is by no means infrequent.

I should also like to refer to the frequency of ventral hernia in children after appendix abscess; I believe it is of more frequent occurrence than in the adult. I quite agree with Mr. Dodds-Parker that the rectus incision is the best for interval operations, but where a ventral hernia or a weak scar exists I excise the scar and utilise the incision for the removal of the appendix and restoration of the abdominal wall.

I have often been struck by the almost complete absence of adhesions after an appendix abscess, nothing but a few web-like threads are sometimes met with except just around the appendix itself, which may be bound down by adhesions to the cæcum and surrounding structures.

I am, Sir, yours faithfully,

Wimpole-street, W., Feb. 14th, 1912. DOUGLAS DREW.

To the Editor of THE LANCET.

SIR,—I was much interested in Mr. A. P. Dodds-Parker's paper, read before the Oxford Medical Society on Dec. 8th, 1911, and published in your columns last week. For the past eight years it has been my practice to remove the appendix after every case of abscess formation as soon as the resulting sinus has healed (if I could obtain permission to do so). My experience with regard to hospital and private patients has been different from Mr. Dodds-Parker; that in the last eight years of hospital practice I have only had one patient who refused to be operated on after the abscess had healed, and, curiously enough, this patient returned one year later under my care with an acute attack of perforative appendicitis, so I was able to remove his appendix at the operation, whereas in private practice I have only been able to get permission in a few cases to remove the appendix after abscess formation, owing in most cases to the popular idea that the appendix is destroyed in such cases. My operative experience in the past eight years of removal of the appendix after abscess formation is 34 cases. In all these cases the appendix has been found and removed, and in all it could be clearly demonstrated that the appendix was not destroyed, the perforation had healed, and that the lumen was patent to a greater or lesser extent. Many contained concretions, and several were examined pathologically, and I firmly believe that every one of these appendices was capable of taking part in another attack of acute appendicitis. It was interesting to note that in two of my cases the appendices had been separated from the cæcum, and that the separated base had got attached to parietal peritoneum in the iliac fossa, the lumen was patent in both, and both contained concretions. And that such a separated appendix was capable of producing an acute attack of appendicitis I was able to prove a few weeks ago when I was asked to operate on a little boy 36 hours after the commencement of an acute attack. This patient had had a severe attack a year and a half previously but was not operated on. I found the appendix lying under the cæcum, its tip was attached to the mesentery of the small intestine, and its base was adherent to a mass of adhesions adherent to the peritoneum in the iliac fossa. Having separated this end I found it was a blind end also, there was a concretion in the middle and a perforation by the side of it. The pelvis was full of muco-pus. I could clearly demonstrate the healed stump of the appendix on the cæcum. Drainage tubes were used, there was no sign of a fæcal fistula, and the wound healed in three weeks.

In conclusion, I should like to add that in THE LANCET of Oct. 1st, 1904, having operated on several of these cases, I published a case under the heading of "An Unusual Case of Suppurative Appendicitis." I published this case chiefly for the reason that Mr. (now Sir) Anthony Bowlby, in a clinical lecture published in THE LANCET of July 9th, 1904, p. 61, on these cases, stated that "suppuration destroyed the appendix." In my remarks on the case that I published I then stated that removal of the appendix after the occurrence of an abscess seems to me to be just as important as removal of the appendix after an attack of non-suppurative appendicitis, and from further experience I am convinced that the appendix should always be removed after abscess formation, but if every case of appendicitis was operated on within the first 48 hours there would be no need to study the condition of the appendix after abscess formation!

I am, Sir, yours faithfully,

H. J. GODWIN,
Hon. Surgeon to the Royal Hampshire County
Winchester, Feb. 12th, 1912. Hospital, Winchester.

DIABETIC GANGRENE.

To the Editor of THE LANCET.

SIR,—Mr. Lockwood, in his clinical lecture on Amputation for Diabetic Gangrene,[1] after a very complimentary reference to my book on "Physiological Principles in Treatment," goes on to say, "And yet it seems strange to me that at the end of that chapter (on Diabetes and Acidosis) he does not say, 'Therefore you must give these patients as much oxygen as you can get them to take.'" He has apparently overlooked the fact that on p. 232 (second edition) I say, "In a condition which ..... we believe to be associated with deficient oxidation, to which the characteristic air-hunger also points, inhalations of oxygen may reasonably be tried." I go on to point out that as in acid intoxications the cell lacks oxygen because a link is missing, not much can be expected from such inhalations. Just in the same way the cell needs dextrose, but in severe diabetes is unable to utilise it. We need nitrogen in our food but cannot use the nitrogen of the air for this purpose. Mr. Lockwood has seen great benefit from oxygen inhalations in his operation cases of diabetic gangrene. I would suggest that this was because of their stimulating effect on the heart, for he notes that before administration there was marked cyanosis and the exuded blood was very dark. Such cyanosis is very unusual in uncomplicated diabetic coma, and even at the necropsy the blood is brighter than usual, presumably because of the defective interchange between the blood and the tissues. I think, therefore, that we are talking of rather different conditions. I am, Sir, yours faithfully,

Welbeck-street, W. W. LANGDON BROWN.

THE ADMISSION OF VENEREAL CASES TO GENERAL HOSPITALS.

To the Editor of THE LANCET.

SIR,—If your correspondent had read my letter more carefully she would have seen that I expressed no opinion whatever either for or against the admission of venereal cases to general hospitals, and certainly urged no plea, valid or otherwise, against the provision of special accommodation for them. On the contrary, I took their admission for granted, and urged that in addition to the special wards and special training for the medical men in charge of them, advocated by Dr. Douglas White and Lieutenant-Colonel Melville, there should be a special staff of trained women to nurse them. Surely "Charity's mantle" can be worn by experienced women as well as by young girls in training; and have young probationers no "claim on our human sympathies" so that we matrons may protest against their being compulsorily employed in a special class of nursing for which neither their age nor experience fits them?

I am, Sir, yours faithfully,

Feb. 13th, 1912. A HOSPITAL MATRON.

GUARDIANS AND DISSECTION.

To the Editor of THE LANCET.

SIR,—The letter which you published last week from Mr. F. G. Parsons with reference to the refusal by the Southwark board of guardians to permit unclaimed bodies under their control to be used for dissection reveals a very serious state of affairs. All medical men must agree with Mr. Parsons's fair and logical statement of the case for the schools

[1] THE LANCET, Feb. 10th, 1912, p. 349.

of anatomy, and I hope that you, Sir, will endorse his appeal for a campaign of public enlightenment.

I am, Sir, yours faithfully,

Feb. 13th, 1912. M.D.

*** We intend to deal with the subject of Mr. Parsons's letter in an early issue of THE LANCET.—ED. L.

THE MEDICAL PROFESSION AND THE NATIONAL INSURANCE ACT.

To the Editor of THE LANCET.

SIR,—In a recent article on the National Insurance Act, you remarked that the profession would now welcome the intervention of the great medical corporations as guides to a constructive policy. Nothing, I believe, of more fundamental importance could be said. I am no longer on the Council of the Royal College of Surgeons of England and I have no information as to what course it and the Royal College of Physicians of London are taking. The services which the Colleges, I have no doubt, are prepared to render alike to the public, the Government, and the profession, cannot be obtained from any other source, and they may well be the turning point in the construction of a position which can be accepted as sound and equitable. The vital interests of the community and the profession are beyond doubt very gravely involved as matters stand. Had the whole question been made the subject of a conference between the Government and the two Colleges before the Bill was framed the present deadlock might have been avoided, because the real facts of the case would have been brought to light. I can remember instances when I was on the Council in which the Government consulted the Colleges and in which those bodies were able to render material assistance. I remember, also, the generous terms in which these services were acknowledged by the Government of the day.

I am, Sir, yours faithfully,

Cambridge. HOWARD MARSH.

To the Editor of THE LANCET.

SIR,—Will you allow me to put before you and your readers some arguments why, even though the Insurance Act has been passed, it should not without considerable amendment be put into practice. Without consulting those who have considered, and under all sorts of difficulties and largely at their own expense have dealt with, the sickness in the land, Mr. Lloyd George and the House of Commons settled down to discuss details; they did not trouble to think of the principles which should underlie the Act.

One acquainted with the traditions of Dartmoor is irresistibly reminded of

> "Lidford Law,
> Where in the morn they hang and draw
> And sit in Judgment after."

Though the Act is passed it is not irrevocable, and we medical men have an idea that even the Government, though they forced the Bill through Parliament and have presented it to a country which looks askance at the gift, are now, though late in the day, not disinclined to "sit in judgment after."

In the minds of the advocates of the Act there is a conception of the origin and treatment of disease which is erroneous. It is supposed that if a man or woman is not deterred by pecuniary considerations from consulting a doctor disease will be aborted or arrested; in other words, it is supposed that chronic disease leading to disablement comes from the neglect of some definite condition. It would be easy to demonstrate, whether in the out-patient rooms of any large hospital, or in the dispensary of a doctor in the East of London, or in the consulting-room of the West-End physician, that, except in cases of infection and injury, most of the diseases, preferably described as morbid conditions, which lead to total or partial disablement from work, do not come on suddenly and definitely, but slowly and insidiously, and that they depend on faulty hygiene and faulty habits. The only cure for them is prevention, and the only way to prevent them is through the education of the patient by the doctor.

From personal experience as a general practitioner for 18 years, and subsequent special practice, and from remarks made to me by not a few other doctors, I know that the general practitioner and the hospital physician alike are at present unable to devote the necessary time to the instruction of the patient. And everyone who knows anything of general medical practice is convinced that under the Insurance Act there must be a great augmentation of the work of the already greatly overworked general practitioner. Of course, there are doctors with plenty of spare time, but the public have decided that their services are not worth seeking. Now in the vast majority of cases, what a patient, especially an ignorant and unintelligent patient, asks a doctor is not "What can I do to get quite well?" but "What can you give me to ease my present pain or discomfort?" So that under the new Act, with an increased number of cases to attend to, the doctor will have even less time and opportunity than he has now to teach his patients rationally, and with a view to permanent amelioration; and sickness, leading to disability, will not be lessened.

If you had space I would ask you to print an extract from Sir F. Treves's work, "The Other Side of the Lantern," where he shows that the exceptionally low mortality of the Japanese in their war with Russia was due to their realising that the only proper cure of disease on a large scale is its prevention. What is true of the treatment of disease in an army is true of the treatment of disease in a nation. From this point of view another very serious defect or omission in the Act is the failure to provide for any proper dental service. I think it was Napoleon who said that "an army marches on its belly." What is true of an army of soldiers is true of an army of workers, and it would be right to say that a "nation works on its belly." It would be easy to demonstrate in the out-patient rooms of any hospital that one large factor, possibly the largest factor, in the causation of chronic disease depends on some morbid condition of the alimentary canal; another indication of this fact might be found in the numerous advertisements of pills and patent medicines which disfigure our landscapes and provide a large revenue for our daily and weekly journals. It is becoming more and more recognised that to prevent these conditions a clean mouth and sufficient teeth to masticate properly are essential. At the present time the vast majority of labourers have defective teeth and unclean mouths.

Dr. Harry Campbell writes in the *British Medical Journal* of Jan. 27th, 1912, "I estimate that among the inhabitants of these islands there are upwards of 200,000,000 carious teeth, and as many alveolar abscesses," and as regards the teeth, I do not think his estimate is too large. In 1000 well-to-do patients seen consecutively I found that nearly 40 per cent. had markedly defective teeth, and over 20 per cent. had septic mouths. Seeing that in all these cases food is improperly masticated, and in septic cases is actually poisoned before it is swallowed, until this condition of affairs is altered a really high standard of health is impossible, and to attempt to improve the health of the labouring class to any great extent without providing for adequate dental service is more foolish than to try to make bricks without straw; it is to attempt impossibilities.

There is a third point that I should like to put before your readers. It has been enacted that for some fixed pecuniary consideration the services of a large number of medical men are to be at the call of one-third to one-half of the inhabitants of the British Isles, whenever the latter may choose to demand them. Now it does not seem to have occurred to many that to this idea of compulsory medical service there is a definite corollary—viz., that the patient should be under some compulsion to carry out the doctor's orders. The public must get rid of the idea that when a man is sick his recovery depends on his taking some medicine or other; it depends infinitely more on what he himself does or refrains from doing. "Don't rely on the medicine I prescribe, but do what I tell you," is very often, with intelligent medical men, the parting injunction to their patients. At present, assuming a patient does not follow the doctor's advice and returns time after time with the same complaint he has at any rate to pay the doctor a fee for each unnecessary quarter of an hour he takes up. But in future he can return and waste the doctor's time as often as he likes. In the military and naval services and in the workhouse infirmaries where there is contract medical service, and in the wards of general hospitals, where gratuitous relief is given by many of the ablest medical

men, the patient *has* to do as he is told. At present in club practice the patients are the more intelligent and thrifty of their class, and as it is their own money that is being spent when they are on the sick list there are inducements for them to take the doctor's advice. But in future the less intelligent and less thrifty are to be entitled to free medical treatment, and with no compulsion or even inducement to follow the doctor's advice.

Let me give a case to illustrate my point. The patient is a man, aged 35, a mechanic. During the last five years he has frequently been incapacitated for work owing to what has been called a weak heart. His real trouble is flatulent distension of the stomach, causing pressure on the heart. This is caused: (1) by defective teeth; (2) bolting his food; and (3) unsuitable food. He will not have his teeth attended to, and will not correct his habits. He spends at least £10 a year on doctors and patent medicines. Why should any doctor be compelled—as under the Insurance Act he will be—to attend this man, whether it be at 6*s*. or 10*s*. per annum, if, and as long as, he refuses to take advice and acquire habits which alone could cure him? If this man chooses to play the fool, why should it be at other men's expense? Can anyone imagine a solicitor agreeing—still less can anyone imagine a solicitor being compelled—to give advice at so much a year to all and sundry and to be compelled to devote time to getting them out of difficulties they had got into by not following the first advice he gave them? From Mr. Lloyd George upwards and downwards lawyers would say it would be preposterous to suppose they would undertake such work—at contract rate.

Is it too late to suggest to the members of the Government that now that they realise as they never did before the difficulties that surround national sickness insurance and the *prevention* of national sickness, they should act as statesmen and not as mere politicians? That they should bring in a Bill to suspend the operation of this Act for at least two years (such a Bill would be welcomed by practically all the Members of the House), and that the Commissioners selected to administer the Act, with or without additional members, should be appointed a Commission to inquire into, and report on, the best method of providing for the prevention and treatment of sickness among the working classes, and for the maintenance of the worker during periods of ill-health. If this were done, and took two years to do, the time would be well spent in preparing an edifice to be built on rock in the place of one which has its foundations in the shifting sands and that already is in need of reconstruction before ever it has been put to use.

I am, Sir, yours faithfully,

Llandrindod Wells, Feb. 10th, 1912. R. ACKERLEY.

PS.—The foregoing letter has dealt with illness from the medical side only. It ought to be realised by the Chancellor and the public that hitherto the greater part of the major surgical work for the industrial classes has been done without the least cost to the patient and without the surgeon receiving any remuneration. If an attempt is made to bring the Insurance Act as passed into practice, it is conceivable that surgeons will not continue to do all this gratuitous work; and can any lawyer tell us why they should?

To the Editor of THE LANCET.

SIR,—I agree that an unsuccessful strike would be dreadful, in the loss of prestige. But there is some reason for disagreeing with the conclusion that a successful strike would be deplorable in its public effects, as you suggest in your leading article of Feb. 3rd. There is no necessity to base our refusal to accept the terms of Mr. Lloyd George on pecuniary considerations, but there is every reason for basing such refusal on the ground of belief that the acceptance of the present proposals will be a matter involving great disaster to the cause of progress in the science of medicine and surgery, and consequently a detriment to the public health of this country.

I cannot recollect on any previous occasion when politicians have devised instruments for damaging the interests of medical science that the Royal Colleges of Surgeons and Physicians have taken up a proper position. On this occasion—too tardily, it must be admitted—both of the Royal corporations have made pronouncements, upon which they may be congratulated, and it is much to be desired that these corporations will receive loyal support. I observe that the Chancellor had stated that his Commissioners are, from A to Z, no political partisans. Well, that is possibly true so far as the official parties are concerned, but the question arises as to past and present membership of, say, the Fabian Society or the Social Democratic party. So far as my observation serves me, the principles of State interference with personal freedom are permeating every class in this country, and it is quite patent that the past action of the British Medical Association has been much influenced by the supporters of these principles. The time has indeed now arrived when the enemy should be labelled, and that the two political parties should be frankly—Socialist and Anti-Socialist. As matters now stand, it is always possible to deny political partisanship, because Socialism is not reckoned as being the serious political factor it undoubtedly is.

The conclusion at which I have arrived is that the safest course for the medical profession is to refuse to be drawn into more conferences, official or unofficial, or more political breakfast parties, but to await the time when the Commissioners put their cards on the table, and to recollect that the profession holds an overwhelming hand in trump cards.

I am, Sir, yours faithfully,

Hatfield, Feb. 6th, 1912. LOVELL DRAGE.

To the Editor of THE LANCET.

SIR,—Our system of club practice may not be perfect, but the National Insurance Act seems to me to make it infinitely worse for all except highly paid officials. The present proposals would not affect many of us in the least; hence I write from a purely disinterested point of view. On conversation with a highly trained workman I find that he is perfectly satisfied with the present arrangement, but bitterly resents being put on a level with the thriftless. Whatever solution is reached for the problem, let us secure that our leaders recognise that the *six points* are only the *irreducible minimum*. Like many others, I regard my guarantee to a defence fund solely conditional on the reconstitution of the British Medical Association and their adoption of the six points as their platform.

I am, Sir, yours faithfully,

Feb. 10th, 1912. JOHN CROPPER, M.D. Cantab.

To the Editor of THE LANCET.

SIR,—During the past week many letters, hostile to the medical profession, have appeared in some of the lay newspapers, and their general tenor is to the effect that the medical profession will find that the Act includes their "six points." The following references will show clearly that this is not the case.

1. Under Section 15 (3) the regulations which the Insurance Commissioners are bound to make do no more than authorise the Insurance Committees to require any persons whose incomes exceed a limit to be fixed by the Committees, and to allow any other persons ..... to make their own arrangements, &c. This authorising and this allowing do not involve any compulsion, and *pro tanto* (to say nothing of the composition of the Insurance Committees) the "first point" remains unsatisfied.

2. Section 15 (2) (*c*) allows the insured person to select the doctor, and the doctor to decline the assured person, but this has to be read (1) along with (*d*); and the very probable cases of each one of the doctors declining to attend certain assured persons have still to be provided for; and (2) along with Section 15 (4), which deals with persons (i.e., all present and future members of societies) entitled to receive medical attendance, &c., under any system ..... existing at the time of the passing of the Act; and it says that the regulations shall provide that, in the case of these persons, the "medical attendance, &c., may be treated as ..... and may provide for the Committee contributing," &c. There is no compulsion on the Committee, and, even if there were, the "persons" would be enticed to "select" the "club doctor," to whom this Subsection (4) gives no right to decline to attend the "persons."

3. By Section 14 (1) medical benefits, it is true, are to be administered by and through the Insurance Committees, but seeing that three-fifths of these Committees stand for the insured persons, while only one-fifteenth or one-twelfth or so, according to the size of the Committees, are allowed to the doctors, it is idle to say that the medical benefits are

not administered by the societies, and the same with respect to the maternity benefit, which, in the case of members of a society, is to be administered actually by the society itself.

4 and 5. Section 15 (1) opens the door to "bargaining" (for payments) by doctors with the representatives of the societies, and this is just the indignity to which, I apprehend, the medical profession declines to subject itself. (Fancy solicitors or members of my own profession being called upon to submit to such conditions!) Again, the possible Medical Committees contemplated by Section 62, which are to be "recognised" (!) and "consulted" by the Insurance Committees, are not likely to be able to prevent or remove difficulties, seeing that there is no suggestion that the Insurance Committees are to act upon any advice or recommendation tendered by the Medical Committees.

6. The fact that self-respecting medical bodies have declined, this month, to take part in an *in camerâ* "talk" affords no explanation of the "inadequate" representation of the medical profession on the Commission and on the Insurance Committees which is arranged for in the Act.

Suppose the whole medical profession were to stand aside, how would the Act be "worked"?

I am, Sir, yours faithfully,

Lincoln's Inn, W.C., Feb. 12th, 1912. BERNARD O'CONNOR.

To the Editor of THE LANCET.

SIR,—Will you allow me to ask a few questions concerning the Insurance Act? I believe 6*s.* per head are allotted to medical aid per annum. Now, how much is going to the chemist and how much to the general practitioner? I am told it will not be possible to supply medicine at less than 2*s.* 6*d.* a year, which will only leave the general practitioner 3*s.* 6*d.*

But it will be necessary to have a schedule of drugs to be kept by the dispenser; these drugs must be up to standard. In order to ensure this, periodical testing of the drugs will be required, as in Germany; a staff of analysts must be maintained for the purpose; so that they may be above temptation, they must be well paid. Out of which fund is the money to come?—I am, Sir, yours faithfully,

J. E. FORSTER, M.D. Leipsic.

Brockley-road, S.E., Feb. 6th, 1912.

To the Editor of THE LANCET.

SIR,—I have read with interest the tabulated list of clauses in the Act as affecting the medical profession supplied to you by a correspondent, who, it is stated, has been officially engaged in working upon the Act. The list is published on p. 404 of your issue of Feb. 10th. Why is Section 63 omitted? In none of all the numerous letters appearing in your columns has this section been adequately discussed. Section 63, in my opinion, is one of the fundamental clauses of the Act. In its far-reaching subsections are provisions which will influence for good the homes and environment of generations yet to come.

If Mr. Lloyd George had done nothing more to stamp him as a strong man, Section 63 of this Act would be enough do so. I am, Sir, yours faithfully,

A. B. DUNNE, M.B. Cantab., D.P.H.

Doncaster, Feb. 9th, 1912.

*** Section 63 deals with excessive sickness and inquiries into its cause.—ED. L.

ASSOCIATION FOR PROMOTING THE TRAINING AND SUPPLY OF MIDWIVES.—The eighth annual meeting of this association will be held at Caxton Hall, Westminster, on Thursday, Feb. 29th, at 3.30 P.M. The chair will be taken by Mr. H. Cosmo O. Bonsor, and among the speakers will be Mr. F. E. Fremantle, medical officer of health of Herts.

COLONIAL MEDICAL SERVICES.—*West African Medical Staff:* The following have been selected for appointment to the staff:—Dr. B. A. Percival, Dr. J. W. Thomson, and Mr. R. Willan (Northern Nigeria); Mr. E. J. J. Quirk (Southern Nigeria); and Dr. E. J. Powell (Sierra Leone). *Other Colonies:* Dr. D. C. Robertson has been selected for appointment as a medical officer (Grade III) in the Federated Malay States.

MANCHESTER.

(FROM OUR OWN CORRESPONDENT.)

Annual Report of the Royal Infirmary.

THE report just issued states that steps have been taken to purchase a site in the city for the purposes of a central branch, which, with the buildings to be erected on it, is to cost £45,000. A considerable part of the report deals with the Insurance Act. There seems to be a consensus of opinion that the necessity for hospitals and the work and expenditure thereon will be in no way diminished by the Act. At an interview with hospital authorities the Chancellor of the Exchequer has said that the hospitals of the country were essentially a part of the machinery of civilisation, and he could not imagine any country allowing any single hospital to be closed because it was short of cash. This would seem to imply that if the hospitals are not supported voluntarily they will be supported by taxation, which will probably lead to their ultimately becoming State hospitals. After the removal of the infirmary to its present site the board pointed out that £12,000 in new annual subscriptions would be required to enable the institution to pay its way. The response had been only £3220, while during 1911 there had been a further decrease of £563. The in-patients in 1911 numbered 8631 as compared with 5169 in 1908, while the out-patients reached 63,949, as compared with 46,856 in 1908. The number in all departments of the hospital who received the benefits of the charity during the past year totalled 74,540. There has been a remarkable increase in the number of minor casualties, perhaps due to the operation of the Workmen's Compensation Act. They reached 22,654, as compared with 18,381 in 1910. Legacies to the amount of £10,607 have been received during the past year. A medical expert has been appointed to devote his whole time to research in cancer.

Manchester Royal Eye Hospital: Annual Meeting.

The annual meeting of the trustees of this hospital was held recently. Again a large increase in the activity of the hospital has to be recorded. The out-patients admitted were 25,222 at Oxford-road, an increase of 3155, and 14,037 at St. John-street, an increase of 1262. The number of in-patients at Oxford-road was 2008, and the average duration of their stay was 20·5 days. The number of accident cases treated at the two hospitals was 9350, giving an average of nearly 30 a day. This increase of patients, in and out, necessitates a corresponding increase in expenditure. The ordinary annual expenditure now exceeds the ordinary income by £544. Arrangements have been made with the University of Manchester for the appointment of a laboratory steward to the hospital, who will work under the supervision of the professor of pathology of the University. This arrangement is intended to facilitate the examination of pathological specimens in connexion with diseases of the eye. It is also hoped that great progress may be made in the preparation of sera and vaccines for use in the treatment of such diseases. The professor of pathology (Dr. J. Lorrain Smith) is appointed honorary pathologist to the hospital, and will become a member of the medical board. Founded in 1815, the hospital at that time had an expenditure of £202 for the year. Now this expenditure is £7000. Last year out-patients increased largely and increased subscriptions are urgently needed. A certain amount of the increased work was due to the education authorities of the city having taken up the question of the eyesight of school children. The result has been that the children attend the hospital earlier in their career when any visual defect is found. The only legacy received during the year was one of £1000 from Mr. Armitage. A conditional legacy of £130 was left by Mrs. Rose Hylam, the condition being that within 12 months' time two lady members should be appointed to the board of management. In view of their system of government by a board of management of business men, by a ladies' committee who attended to the interior work of the hospital, and by a medical board who gave advice as to the medical part of the hospital, the board of management unanimously came to the conclusion to make no alteration, in which conclusion it was supported by the ladies' committee.

Cats as Transmitters of Disease Germs.

It is well known that cats may be the means of carrying

various forms of infection. The most recent case is in connexion with the cats in the workhouse of the Bolton guardians, who decided to destroy the cats in the workhouse, and accordingly this has been done. Mr. L. A. Buck, the medical officer of the union, after fully investigating, by means of the X rays, the many cases of ringworm among the child inmates of the cottage homes, came to the conclusion that many of the cases were of animal origin. Only cats that are usefully engaged in the store-rooms have been retained. It is hoped that this measure will practically stamp out the disease.

Manchester and Salford Hospital for Skin Diseases.

The annual report states that there is a debt of £858 due to the bank, and therefore the committee appeals for new and increased subscriptions. The income for the past four years has been far from equal to the expenditure, so that the board has been forced to utilise legacies and donations which might have been otherwise added to the permanent funds. The net result is that the board is faced with an annual deficiency of between £400 and £500. At the meeting of the British Hospitals Association held in Manchester in September the opinion was expressed that in consequence of recent legislation the hospitals would suffer. The report states that the board has already received intimation from several subscribers that although they have not up to now refused to subscribe, yet the working of the National Insurance Act will be carefully considered before they can renew their subscriptions. In 1884, when the hospital first opened its doors, there were 632 patients; last year the number reached 9688. The highest number treated in one day during the past 12 months was 262, and the maximum number of attendances in one week was 1212.

Cruel Sports.

Dean Weldon, preaching at the Manchester Cathedral on Jan. 31st, dealt with the relation of man to the lower animals. Man, he said, possessed the express right of taking the lives of animals for his own support and even for his own pleasure. There was no doubt, too, that if it lay within man's prerogative to take the lives of animals, he could not do it without inflicting a certain amount of pain. It was, however, an absolute duty to reduce that pain to a minimum. Man was bound to see that in slaughter-houses the inevitable death of the animal was made as painless as possible. As to sport, a glance over Christian history showed that one cruel sport after another had been condemned at the bar of public opinion. It was at least probable that as civilisation and sympathy advanced, humane, cultured, Christian gentlemen would find their pleasure—their sport, if he might so call it—elsewhere than in the taking of animal life. But he did not wish to condemn sport. With reference to vivisection, the Dean observed that after all every new discovery must be tried on somebody, either man or animal, and if the life of a human being was more precious than the life of an animal it was difficult to sanction sport and condemn vivisection. He held the view strongly that whenever living animals were subjected to experiment in the interests of progressive science it should be done under anæsthesia.

Formal Opening of St. Mary's Hospital for Women and Children.

The new St. Mary's Hospital for Women and Children in Oxford-road was formally opened by the Earl of Derby, the President, on Feb. 9th. The hospital was built and equipped by Mr. E. Reid, acting as the sole surviving trustee of the late Mr. Manassah Gledhill. After completion it remained unused for some months as the necessary money for its upkeep was not available. A year ago the hospital was hopelessly insolvent, but as the result of an urgent appeal to the public to remove this reproach the trustees raised £40,000, and increased their subscription list by £1600 a year. A further £5000 a year, however, is still required to carry on the hospital as it ought to be carried on. The working women of the city have helped by their contributions in pence and halfpence, aggregating a sum of £1000. The hospital contains 111 beds, 86 for women and 25 for children, and already the accommodation is in full use. St. Mary's Hospital has existed for 122 years. During the first year 400 maternity patients were treated, including 72 in-patients. Last year 4500 maternity cases were treated, 800 operations were performed, and 11,300 out-patients received attention. Lord Derby promised to try to obtain Royal recognition for the hospital.

Feb. 13th.

LIVERPOOL.

(FROM OUR OWN CORRESPONDENT.)

Liverpool University: Degree in Hygiene.

THE Council of the University, on the recommendation of the Senate and Medical Faculty, has decided to provide courses of study leading to a new degree, that of Master of Hygiene. The degree will be open only to graduates in medicine, and will be conferred after examination and a course of study extending over a considerable period. It is intended that the degree shall be of a high standard, and it is hoped that graduates desiring the highest qualifications in the branches of their subject affecting public health will avail themselves of the opportunity of working for this degree. The University will still continue to grant the diploma in Public Health.

Annual Dinner of the Medical Students of Liverpool University.

The annual dinner of the medical students of the University of Liverpool was held on Jan. 20th, at the Exchange Station Hotel, under the presidency of Dr. T. R. Bradshaw, the senior physician to the Liverpool Royal Infirmary. Over 100 were present and the speakers included the chairman, Professor A. M. Paterson, Dr. O. T. Williams, and the representatives from the Leeds University. The meeting was a great success.

Chester Infirmary.

The annual meeting of the governors of the Chester Infirmary was held on Jan. 30th, under the chairmanship of the Mayor of Chester. The report of the board of management, the 157th since the establishment of the institution, showed that the number of patients treated during the year 1911 was 9131, as compared with 9655 in 1910. The average cost per occupied bed was £62 6*s.* 1*d.* The total receipts amounted to £6094 10*s.* The total ordinary expenditure amounted to £7097. The board recommended the appointment of an honorary assistant ophthalmic surgeon. Dr. J. R. Thompson, in seconding the adoption of the report, expressed the fear of the managers, in common with that of other hospital managers, as to the effect on the resources of the hospital of the National Insurance Act. It was not for him to criticise the Act. The Act would not come into operation until July, and he was told by those who were capable of expressing an opinion that it was quite possible that, in response to pressure, the time for the Act to come into operation might be postponed, which would give further opportunity to consider matters. There was no doubt, however, that whatever happened the hospitals of the country must be preserved in their absolute entirety. If the Act affected them in the matter of patients it would be out-patients probably, but the beds would be quite as much required in the future as they had been in the past. He understood the Act provided that the Commissioners would be authorised to contribute liberally to hospitals.

The Royal Albert Institution.

Arrangements have been made for the annual election of patients in connexion with the Royal Albert Institution, to be held at Barrow-in-Furness during May next, and the friends of eligible candidates should at once write to the secretary (Mr. S. Keir, the Royal Albert Institution, Lancaster), for forms, as the list of candidates will shortly be closed. Seventy names have already been accepted by the committee, including 29 from Lancashire, 20 from Yorkshire, 5 from Cheshire, 2 from Westmoreland, 3 from Cumberland, 8 from Durham, and 3 from Northumberland. The institution was founded and is supported by voluntary contributions, and for nearly 50 years past has been successfully engaged in caring for and training the improvable feeble-minded of the seven northern counties of England, 84 per cent. of the inmates having been materially improved, in many cases to such an extent as to be rendered capable of earning their own livelihood. The committee are proceeding with a farm colony for 40 additional inmates, towards the cost of which donations amounting to over £1600 have been received, and others colonies of a similar kind will be formed if there be a sufficiently generous response to the committee's appeal for £12,000.

Feb. 12th.

BRISTOL AND THE WESTERN COUNTIES.

(FROM OUR OWN CORRESPONDENTS.)

University of Bristol: Markham Skerritt Memorial.

THE late Dr. E. Markham Skerritt did much for the Bristol Medical School. He was professor of medicine, and for many years was dean of the Faculty of Medicine. Accordingly it was thought proper to commemorate his services to the cause of medical education by some definite University memorial. At first it seemed possible to establish a chair of anatomy in his name, but owing to a series of unfortunate mischances the project had to be abandoned; and the committee appointed to undertake the collection of subscriptions has just handed to the University a sum of £337 for the purpose of establishing a biennial prize for original work in medical science. This is an altogether admirable way of perpetuating Dr. Markham Skerritt's memory, as the promotion of original research in medicine was a matter in which he took much interest. Moreover, it is sadly in need of encouragement in Bristol, even more perhaps than in most British centres of medical education.

Bristol Dispensary for the Prevention of Consumption.

A letter has been sent to medical men and others by the committee of this institution, stating that it will be open for patients on Feb. 19th at 2 P.M. Female patients and children will be seen on Mondays and Thursdays from 2 to 5, and men on Fridays from 2 to 5, and also by arrangement on Tuesdays from 7 to 9. No patient will be seen by the medical officer, Mr. O. J. Campbell Faill, without a card or letter of recommendation from his or her medical man or from the medical officer of health. Medical men may, if they wish, enlist the help of the dispensary by writing "dispensary" on the form of notification of tuberculosis under the Infectious Diseases Acts. Patients so recommended will be examined and treated if suffering from tuberculosis, and their homes will be visited and "contacts" examined. Visitors will be received on Wednesdays at 3.30, when the medical officer will explain the working of the institution, which is supported by voluntary contributions. In a footnote to this letter, Dr. G. Parker, who is a member of the committee and also chairman of the Bristol Division of the British Medical Association, says that after the resolution passed by the Bristol Division the institution feels that it can rely on the active support and hearty coöperation of the medical men of the city. Mr. Faill, the newly appointed medical officer, has worked under Dr. R. W. Philip in Edinburgh, and also at the Paddington Dispensary.

Association of Alumni of Bristol University.

This association held a most interesting meeting at the University recently, an exhibition of memorials of eminent Bristolians lent by various collectors being the principal feature. Among these were various manuscripts and autographs of Southey, Coleridge, Longfellow, Richard Hakluyt, Sydney Smith, Hannah More, and others. The object of the association—to bring together past graduates, and thus to maintain their connexion with the University—was fully achieved by this meeting, as it attracted a large company of members.

The Bristol Royal Infirmary.

The annual meeting of the subscribers to the Bristol Royal Infirmary was held on Feb. 12th under the presidency of Sir George White. The medical report stated that during 1911 the out-patients numbered 56,440, and 4712 in-patients were admitted. The financial statement showed the receipts amounted to £17,182, and the expenditure was £18,586. The total deficit against the institution is now £5391. The chairman stated that the Bristol Royal Infirmary King Edward VII. Memorial will be ready in a few months for the reception of 180 additional patients.

The Royal United Hospital, Bath.

The annual meeting of the subscribers of the Royal United Hospital, Bath, was held on Jan. 31st, under the presidency of the mayor. The medical report stated that during 1911 the in-patients were 1590 and the out-patients 15,943, both figures being in excess of the previous year. In addition, 229 patients were treated at their own homes. The financial statement showed that the expenditure was £7120, and a favourable balance of £4 remained at the close of the year. This was due to the fact that legacies, unless especially bequeathed, were treated as income; if this had not been done there would have been an unfavourable balance of £750. The chairman, Mr. Stanley Wills, made a strong appeal for more financial help. He referred to the inadequate support given to the charity, and added that the institution was being worked as economically as was consistent with efficiency.

Bristol Medical Dramatic Club.

The members of the Bristol Medical Dramatic Club are giving performances of the comedy, *Dr. Wake's Patient*, by W. Gayer MacKay and Robert Ord, at All Saints' Hall, Clifton, from Feb. 13th to 17th inclusive. This is the thirty-fourth annual performance of the club, and the profits will be given to the Bristol Orthopædic Hospital.

The Clifton Dispensary.

The annual meeting of the subscribers of the Clifton Dispensary was held on Feb. 6th. The ninety-ninth annual report stated that the financial position was satisfactory, and a favourable balance of £72 remained at the close of the year. The medical report showed that 2617 medical, 313 surgical, and 71 midwifery cases had been treated during 1911. The committee, in appealing for increased support, refer to the fact that the dispensary has now entered upon the hundredth year of its work.

The Somerset Education Committee and Children's Teeth.

At the last meeting of the Somerset Education Committee it was decided, upon the recommendation of the health committee, that the children in the elementary schools should have their teeth examined and treated by a whole-time dental surgeon, at an annual cost of about £400 per annum, on condition that half the cost be defrayed by the parents and private subscriptions, the other half to come from the public funds.

Death of Mr. J. Frederick Parsons, M.R.C.S. Eng., L.S.A.

Mr. J. Frederick Parsons, honorary surgeon to the Frome (Somerset) Cottage Hospital, died at his residence, "Garston," Frome, Somerset, on Feb. 9th. The deceased received his medical education at St. Mary's Hospital, London, and took the M.R.C.S. and L.S.A. qualifications in 1871. After holding the post of resident obstetric officer at St. Mary's Hospital, Mr. Parsons went into partnership with his father, the late Mr. Joshua Parsons, at Frome, and eventually succeeded to his practice. Mr. Parsons was medical officer of health for the Frome urban district and also certifying factory surgeon. He was highly esteemed and respected in Frome and the neighbourhood. His brothers include Mr. Alfred Parsons, the famous painter, and Dr. H. Franklin Parsons, the well-known epidemiologist, formerly assistant medical officer of the Local Government Board.

Feb. 13th.

SCOTLAND.

(FROM OUR OWN CORRESPONDENTS.)

Medical Inspection of School Children in Aberdeen.

Dr. G. Rose, medical officer of the Aberdeen School Board, has issued his annual report, in which he states that the total number of inspections made during the year was 18,418, in addition to the cases sent in by teachers for advice and those examined by the nurses for cleanliness. Altogether a number equalling two-thirds of the school population passed through the hands of the medical staff during the year. Dr. Rose remarks that the routine of school work is undoubtedly disturbed by the details of medical inspection, but that any inconvenience and additional work is most cheerfully borne and undertaken, most of the teaching staff being strongly in sympathy with school inspection, the good results of which are already showing themselves. The staff consists of two medical officers, three nurses, one typist, and one inspector for dealing with verminous cases; the last-named was added this year. Dr. Rose reports on the cleaning regulations and ventilation (the plenum system in most of the schools) favourably, but suggests that the experiment of shutting off the gymnasia from the general system of ventilation should be made in some schools. Dr. Rose remarks that "Physical exercise can be carried out even in a low temperature. It would be better that the

gymnasium should not be connected with the main school building. A building cheaply got up, well ventilated by cross ventilation, and sufficient to afford shelter from the storm is all that is required, and is infinitely better than one where the ventilation is defective, and which forms an entrance hall to the classrooms." Regarding the heating, Dr. Rose reports that considerable variations were found in the temperatures of the different schools. In a few the temperature was too high. He recommends that the temperature of each classroom should be taken three times during each attendance, and entered on a chart placed beside the thermometer. When the chart showed a temperature above or below a certain standard it could be submitted to the medical officer, who could thus exercise a check on the janitor and teacher. Footwear and clothing showed a marked improvement over last year. The heights and weights of children between 5–6 and 13–14, who were all weighed and measured, were of the average for Aberdeen, though differing slightly from the standard laid down by the Anthropometric Society. In conclusion, Dr. Rose remarks that "while some medical men desire as complete an examination of each child as in life insurance, this is an impossibility without trebling the staff, and were it done it would be of doubtful utility. There are so many known and easily recognisable defects to remedy that there is no need to dream of detecting every incipient case of disease and trying to prevent its development. Such dreaming will remain a dream. That already two out of every three children who were examined have had their defects remedied or seen to leads to the belief that in the early future only a small percentage of those suffering will remain uncared for."

Notification of Measles in Aberdeen.

The town council of Aberdeen is to have under consideration the desirability of including measles among the notifiable infectious diseases. The Medico-Chirurgical Society has communicated with the town council regarding the matter, the society having at a recent meeting discussed the very large death-rate among the children of the city during the recent measles epidemic and passed a resolution to the effect that, in the society's opinion, and especially in view of the circular recently issued by the medical officer of health, all cases of measles in children under three years of age should be notified, and that the usual fee should be paid for such notification.

Feb. 13th.

IRELAND.

(FROM OUR OWN CORRESPONDENTS.)

Dinner of the Royal College of Surgeons in Ireland.

THE annual Charter Day dinner of the Royal College of Surgeons was held on Feb. 10th in the Hall of the College, the President, Mr. Robert H. Woods, being in the chair. His Excellency the Lord Lieutenant was present. The President spoke of the lack of response on behalf of the Treasury when asked for help for the school of the College. In spite, however, of all lack of public help the school never had more pupils than at present. Mr. O'Connor, Solicitor-General, spoke of the place occupied by the College in the public life of the country; and Dr. D. J. Coffey, President of University College, made a graceful speech, referring to the relations between the College and the medical profession. In the course of the evening a handsome presentation was made to the President and Mrs. Woods in recognition of their services to the College. At the request of Sir Charles Cameron the Lord Lieutenant handed to the President a massive silver cup and to Mrs. Woods a necklet and pendant.

"Phantasms of Life."

Under the above title Dr. Walter J. Smith gave an interesting lecture last week before the Royal Dublin Society dealing with those curious crystalline forms which simulate living beings. While holding strongly to the view that physico-chemical processes did not explain the phenomena of life, Dr. Smith pointed out that there was no known definition of life which excludes certain crystalline formations. The most distinctive functions of life were nutrition, organisation, and growth, and all of these could be exhibited under certain circumstances by crystals. Similarly, they exhibited reactions to stimuli of intrinsic and extrinsic origin. Some of the phenomena exhibited by "flowing crystals" closely mimicked the forms and movements of living creatures, such as bacteria.

Tyrone and Fermanagh Asylum.

It was reported on Feb. 8th that since the last meeting one female patient had died of enteric fever, and that all the other typhoid patients were now convalescent. The resident medical officer reported that while the sewerage system was condemned he could not regard the asylum as being in a satisfactory state. He asked that the permanent staff should be increased, and the committee granted temporarily two nurses and two attendants.

Monaghan and Cavan Asylum.

At a meeting of the committee of management of this asylum, held on Feb. 8th, a resolution was passed protesting against the adjournment of the inquiry into the auxiliary asylum question, which had arisen through the application of the Cavan county council, and by which the accommodation question had been delayed.

High Death-rate in Belfast.

The death-rate for the week ending Feb. 3rd was from all causes 31·1, and from the principal zymotic diseases 2·5. A great deal of bronchitis, pneumonia, and influenza prevails in Belfast at present.

The National Insurance Act.

The National Insurance Act is becoming more unpopular in Ireland, and especially among that moderate sensible class who belong to none of the political parties, and who are dissatisfied with what they remain convinced, all denial notwithstanding, is the political character of the appointments already made under the Act. They fear that the same principle will continue to prevail, as there is such a rush of candidates for further posts, who are basing their claims solely on political services, without any examination check, as in the Civil Service. Further, it is becoming more and more evident that the approved societies under the Act will be sectarian. Last week at a meeting of the Ancient Order of Hibernians (which is entirely political and sectarian, and of which Mr. J. Devlin is the head) it was decided to ask recognition for that society under the Insurance Act; and other religious bodies of various denominations are taking action each to form its own society. The natural result may be that everything will tend to become more and more sectarian, and that Protestant and Catholic will soon cease to work on any common platform in Ireland, while all voluntary philanthropic efforts will cease.

The Irish Milk Commission.

The Irish Milk Commission began its sittings in the City Hall, Belfast, on Tuesday, Feb. 13th. It is to last four days.

The Chancellor's Speech.

The attack made by Mr. Lloyd George on the medical profession in his speech in London on Feb. 12th has had the effect of stiffening the medical profession in Ireland against the Insurance Act.

Feb. 13th.

PARIS.

(FROM OUR OWN CORRESPONDENT.)

A Superior Commission on Medical Instruction.

THE President of the Republic, on the report of the Minister of Public Instruction and Fine Arts, has established at the Ministry of Instruction under the presidency of the Minister a Superior Commission on Medical Instruction. The Commission is to report on all the questions submitted to it by the Minister. It will meet twice a year, but can be convened in extraordinary session. All the members have the right to submit to the Minister proposals or representations on any questions within the competence of the Commission, and these are committed to a subcommittee which examines them and, after hearing their authors, should they so desire, advises the Minister, who in turn endorses their report or remits it for the consideration of the Commission as a whole. The 76 members of the Commission were named at the same time by the Minister of Instruction, and include, among others, the vice-rector of the Academy of Medicine,

the Director of Higher Instruction, the representatives of the Faculties of Medicine on the Superior Council of Public Instruction, the doyens of the Faculties of Medicine and of the mixed Faculties of Medicine and Pharmacy, the president and the permanent secretary of the Academy of Medicine, the Director of Assistance and Public Hygiene at the Ministry of the Interior, the Director-General of Public Assistance in Paris, and the Director of the Military Sanitary Service at the Academy of Val-de-Grâce.

Injections of Serum in Meningitis.

At the Academy of Medicine on Jan. 30th M. Netter presented a report on the work of M. Cantas, in which was demonstrated the cause of certain failures in the use of anti-meningococcic serum in the treatment of cerebro-spinal meningitis. In certain cases closures of the spinal canal are found, which prevent the spread of the liquid throughout the whole extent of the cord. In such cases an injection must be made higher up, even if necessary as high as the cervical vertebræ, to obtain the desired success.

Education of the Vital Processes.

The vital functions of nutrition occupied the attention of the Société de Médecine de Paris during the January session. M. Maurice Faure stated that so far back as 1903 he had established the fact that functions such as respiration, micturition, defæcation, and vomiting, were not exempt from the laws of education. These functions were for the most part dependent on the muscles of the thorax, the abdomen, and the perineum, muscles which were perfectly susceptible to education. Even the smooth (*lisses*) muscles of the viscera were not so entirely refractory to education as was commonly supposed, and in the subjects of contractures, ataxy, and atony, useful effects could be attained by appropriate education. M. Laquerrière and M. Nuytten then presented the results obtained by them up to date with the electrical gymnastic method of Professor Bergonié. This method consists in electrically inducing muscular contractions of the whole body, and, it is claimed, has none of the disadvantages of voluntary exercise. It is indicated in various troubles of nutrition, and especially in obesity and in those cases in which voluntary exercise is difficult or impossible. It can be applied also in the case of the asthenic and the vitally depressed. M. Heckel said that he was not absolutely convinced of the efficacy of this treatment; he thought the exercise should be neuro-muscular, and not simply peripheral in the muscular fibre itself. The neuron allowed the functional nervous adaptation so indispensable to the obese and to those of lowered nutrition, who had always more or less nervous insufficiency. Further, it was to be feared that this mode of incomplete exercise would not obviate relapses.

Gift to the French Medical Faculty at Beyrouth.

At the last meeting of the Academy of Sciences Prince Roland Bonaparte informed the President that he had placed at the disposal of the Academy the sum of 35,000 francs for the use of the French Medical Faculty of Beyrouth.

Medical Expert Decisions.

In order to be recognised in a French court as a medical expert, save in exceptional cases, it is requisite to have official recognition by the Courts of Appeal, which every year, assembled in council, inscribe on the lists submitted by the courts of first instance the names of the doctors of medicine on whom they confer office. But it too often happens that justices of the peace, in the case of industrial accidents, select an outsider whom they favour in place of choosing a medical expert from the official list. In such cases the "expert" decision is worthless, and a judgment based on it must be rejected, now that the Fourth Chamber of the Tribunal has declared void the expert decision of an unofficial expert nominated merely by a justice of the peace.

Feb. 12th.

LITERARY INTELLIGENCE. — Messrs. Witherby and Co. are shortly publishing for Mr. P. H. Bahr two important reports, the one on "Filariasis and Elephantiasis in Fiji," and the other on "Dysentery in Fiji." The reports embody the results of a year's study of these subjects in Fiji, and are to be illustrated with plates in colour and monochrone, and charts.

CONSTANTINOPLE.

(FROM OUR OWN CORRESPONDENT.)

The Turkish Medical Mission to Tripoli.

THE arrest by the Italians of the 29 members of the Ottoman Red Crescent Association on the French liner *Manouba* has raised a most vigorous protest from many quarters. I hear, however, from a reliable source that some of those arrested did not belong to the Association, but were Turkish officers in disguise. The mistake of the Italians was to detain all the 29 members after the identity of over 20 had been fully established. Dr. Kerim Sabati, a member of the Red Crescent Association, now on duty in Tripoli, had telegraphed to Constantinople for reinforcement for the ambulance staff, upon which the above 29 men were despatched. The Turks thought, however, that they could combine what ought to have been purely medical work with political designs. Dr. Kerim now telegraphs that the detention of the medical mission is causing serious prejudice to the efforts of the ambulance corps. The latter conducts its work in the field for the benefit of Turks and Italians alike. Happily, the French-Italian conflict which had arisen over this matter has now been satisfactorily settled. A local newspaper says that the three doctors, who had been submitted to a professional test by French medical authorities, were completely successful. The German Red Cross Mission sent to Tripoli has reached its destination without any hindrance, and is now doing excellent service at the seat of war together with other and various medical agencies.

Cholera Epidemic in Epirus.

Official reports from Epirus speak of a very serious outbreak of the cholera epidemic in various places of that province. Especially distressing is the condition in several garrisons because of the lack of proper treatment and the scarcity of medical men. A veritable panic has taken possession of the inhabitants, many of whom are leaving their homes for Greek territory. Here they are arrested by the authorities and confined in hospitals and lazarets for supervision. The panic created among the soldiers is so great that many of them have deserted and fled in all directions. Last week 17 cases of cholera occurred in the garrison of Yanina, and the Ottoman Government has ordered the establishment of a lazaret near by. The Greek Government is also doing its best to stem the propagation of the epidemic and to reinforce the frontier guards.

The Earthquake on the Ionian Islands.

The details that have reached Constantinople of the last earthquake on the Ionian Islands are very distressing indeed. The catastrophe began at midnight. The shock was of long duration, according to some reports about three minutes. It was followed by several other shocks. The places that suffered most were Zante and Cephalonia, which are supposed to have been the centres of the earthquake. The inhabitants remained in the fields for days. Almost all the public buildings and the majority of private houses have been destroyed at Zante. Human victims were, happily, few in this town. At Cephalonia, however, more than 30 dead bodies were found among the débris of buildings. The shocks extended to the western coast of the Peloponnesus, but without causing much damage. Assistance, medical and otherwise, has been sent to all the places of the visitation. The Greek Government has appointed a Special Commission to collect subscriptions for the sufferers. Private initiative for relief work is very active both at Constantinople and Athens.

Cholera in Aleppo.

News has just arrived of a cholera epidemic at Aleppo. It is rapidly spreading through the whole city. According to official reports about a dozen deaths occur daily, but there, as everywhere in Turkey, the relatives of the patients are attempting to mystify the medical authorities and to hide cholera cases. This is always one of the chief causes of propagation of our epidemics. It is believed that the disease has been brought by pilgrims. The municipal authorities are said to be indifferent, neglecting to take preventive measures. The streets remain dirty, and no disinfection whatever is carried out. There is also a lack of medical men, a usual evil in the provinces of Asia Minor.

Feb. 6th.

JOSEPH, BARON LISTER

Member of the Order of Merit
Fellow and Sometime President of the Royal Society
Knight Grand Cross of the Danish Order of the Danebrog
Knight of the Prussian Order pour la Mérite
Associé Étranger de l'Institut de France
Fellow of the Royal College of Surgeons of England
&c. &c.

Obituary.

LORD LISTER, O.M.,

SERJEANT-SURGEON TO KING EDWARD VII.; LATE REGIUS PROFESSOR OF CLINICAL SURGERY IN THE UNIVERSITY OF EDINBURGH AND OF SURGERY IN THE UNIVERSITY OF GLASGOW; EMERITUS PROFESSOR OF CLINICAL SURGERY, KING'S COLLEGE, LONDON.

LORD LISTER, whose lamented death occurred early on Saturday morning last, Feb. 10th, was one of the most remarkable men who have ever adorned the medical profession. No previous physician or surgeon has ever impressed his day and generation in an equal degree, and he has now gone to his rest full of years and honours, leaving an imperishable name. He will have a permanent place in history as the maker of discoveries which have revolutionised surgery and have thereby conferred inestimable benefits on suffering humanity. In the investigations which led to such fruitful results he had to rely altogether on the promptings of his own genius, unaided by suggestions from any source except a memoir communicated to the French Academy of Sciences on the preservation of watery solutions of decomposable substances. To Louis Pasteur, the author of this memoir, who, however, was not a medical man, Lord Lister at all times most freely acknowledged his indebtedness. Following up the line of thought thus initiated, he showed the conditions which made the difference between success and failure in the majority of surgical operations, and by successive steps he improved the methods of carrying into practical effect the principles then for the first time laid down, until it was everywhere recognised that in the healing art a new era had begun. Lord Lister, who died at Walmer in his 85th year from pneumonia, was ill only four days and the end came without pain.

Lord Lister in Edinburgh days.
(*Reproduced from the frontispiece of the first volume of the Collected Papers.*)

It was a judicious course that on being raised to the peerage Lord Lister did not adopt a territorial title, but retained his family name, which had for many years been so well known to the medical and scientific world. His father's parents were John Lister of Stoke Newington, London, a wine merchant, and his wife Mary Jackson, both of them being members of the religious body known as the Society of Friends. Mr. John Lister died at the unusually advanced age of 98 years. Their son, Joseph Jackson Lister, born in London in 1786, although following his father's business, possessed great scientific aptitude, which enabled him to become a distinguished microscopist and a Fellow of the Royal Society of London. His improvements in the design of achromatic object-glasses for the microscope were communicated to the Royal Society in 1830; they were published in the *Philosophical Transactions*, and have been descibed by most of the authors who deal with the optical theory of the instrument as well as by Lord Lister himself, in the account of his father's life and work which he wrote for the "Dictionary of National Biography"; this memoir will be found in Vol. XXXIII. of that work, published in 1893. In 1818 Mr. Joseph Jackson Lister married Isabella, daughter of Anthony Harris, of Maryport, Cumberland; they had seven children, four sons and three daughters, their son Joseph Lister, for whom so great a future was in store, being born at Upton, in Essex, on April 5th, 1827. Mr. Joseph Jackson Lister lost his wife in 1864 and died at Upton House, Essex, on Oct. 24th, 1869, in the eighty-fourth year of his age.

The district which bears the names of Upton and Upton Park has undergone many changes since that time. Being in the western portion of the county of Essex, between Stratford and Barking, it lies a short way outside the County of London, but is nevertheless included in the Eastern metropolitan postal district. It is now a populous locality partly within the borough of West Ham. Lord Lister's father's house is still in existence; it stands in Upton-lane, Forest Gate, and is now the vicarage of St. Peter's Church, which adjoins it.

Lister's school education was received at Tottenham, after which he spent several years as a student of arts and medicine at University College, London, graduating in the University of London as B.A. in 1847 and M.B. in 1852; in December of the latter year he was also admitted a Fellow of the Royal College of Surgeons of England. During the first 13 or 14 years of his professional career he was busily engaged in histological and physiological work. His first published paper appeared in the *Quarterly Journal of Microscopical Science*, and was entitled "Observations on the Contractile Tissue of the Iris. By Joseph Lister, Esq., B.A." The principal specimen examined was obtained from a patient operated on by Mr. Wharton Jones at University College Hospital, in August, 1852; the volume containing the article was dated 1853, but the paper, which is illustrated with seven camera-lucida drawings, was no doubt written in the previous year, apparently before the author had taken his medical degree. The same volume contains a second paper by him, entitled "Observations on the Muscular Tissue of the Skin. By Joseph Lister, M.B. Lond., F.R.C.S."; it was dated June 1st, 1853, and was written as from University College Hospital, where he held the successive appointments of dresser and house surgeon under Mr. (afterwards Sir) J. E. Erichsen.

His connexion with Edinburgh began immediately afterwards. Mr. James Syme, who had been for nearly 20 years professor of clinical surgery in the University of Edinburgh, had long been recognised as one of the most eminent surgeons in the kingdom; he was, moreover, well known at University College Hospital, where he had held a temporary appointment as surgeon for

a few months in 1848. In order to gain experience under so distinguished an authority Lister proceeded to Edinburgh in 1853, and soon entered on the position of house surgeon to Mr. Syme's wards in the old Royal Infirmary, since replaced by a new building on a different site. Syme was by nature outspoken and tenacious of his opinions—so much so, indeed, that sharp encounters had taken place on various occasions between him and some of his professorial colleagues; Lister, however, held him in high esteem both as an operator and as a clinical teacher, and between them there was a warm friendship only broken by Syme's death in 1870. On April 23rd, 1856, at Mill Bank House, not far from Edinburgh, Lister married Syme's eldest daughter Agnes. The union was a long-continued and most happy one, although not blessed with offspring. Lady Lister (as she afterwards became in consequence of her husband's baronetcy) died from acute pneumonia in April, 1893, while travelling with him in Italy.

Until 1855 he had served in the Edinburgh Royal Infirmary as Syme's house surgeon, but in this year he received the appointment of assistant surgeon, retaining, moreover, his connexion with Syme's wards. He also then began to deliver lectures on surgery in the Edinburgh extra-mural school, a circumstance which led to his name appearing in THE LANCET of Sept. 23rd, 1855, p. 267, as one of the lecturers for the session 1855–56. His home was No. 11, Rutland-street, Edinburgh. Some anecdotes relative to this period of his career, as well as a contemporary portrait of him, will be found in "Looking Back," a profusely illustrated work which appeared in 1907, and consists of a collection of reminiscences connected with the University of Edinburgh. During the seven years of his first stay in Edinburgh he wrote several important articles on histological and physiological subjects. In the *Edinburgh Medical Journal* he published two papers on the Coagulation of the Blood. The *Quarterly Journal of Microscopical Science* for 1858 contained a paper on the Minute Structure of Involuntary Muscular Fibre, read by him before the Royal Society of Edinburgh in December, 1856, and in the same journal there appeared in 1860 a paper on the Structure of Nerve Fibres, written jointly by Lister and his friend Mr. (afterwards Sir) William Turner, who subsequently became President of the General Medical Council. Several other original observations of his were accepted about this time by the Royal Society of London and the British Association for the Advancement of Science; they will be described separately in a later portion of the present notice.

Dr. James Adair Lawrie, professor of surgery in the University of Glasgow, died in the end of 1859, and in February, 1860, Lister was appointed his successor; the post of assistant surgeon to the Edinburgh Royal Infirmary which thereby became vacant was given to Dr. Patrick Heron Watson. Here it may be remarked that during the whole period of Lister's professorship in Glasgow the University occupied the venerable edifice which had stood for centuries on the east side of the High-street; the Royal Infirmary, where clinical instruction was given, was about half a mile away. It was not until 1870, or a little later, that the present University and the Western Infirmary, adjoining one another on Gilmorehill, in the west of the city, were opened, and by that time Lister had become a professor in the University of Edinburgh. While he was in Glasgow the visiting staff of the Royal Infirmary, not including the out-patient department, consisted of four physicians, four surgeons, and two physicians for the infectious wards. The infirmary, which was founded in 1791, has of late years undergone reconstruction without change of site. It was in no way connected with or dependent on the University, except that the professor of practice of medicine (at that time William Gairdner) was *ex officio* one of the physicians. The admission of students for the purpose of clinical instruction was a privilege granted by the directors, the professor of surgery in the university had to depend on their goodwill for election as a surgeon in the institution, and it was only in the second year of Lister's professorship—namely, in 1861—that he was appointed one of the surgeons to the infirmary and given charge of the wards in which a few years later he accomplished work of such tremendous results.

On June 11th, 1863, he delivered before the Royal Society the Croonian lecture on the Coagulation of the Blood. It was published in THE LANCET of August 8th and 15th in the same year. With the exception of articles on Amputation and Anæsthetics in Vol. III. of the first edition of Timothy Holmes's "System of Surgery," Lister's first published memoir on a purely surgical subject consisted of a series of three papers which appeared in our columns in March and April, 1865, describing his method of excision of the wrist-joint for caries. The cases—15 in number—were under his care in the Glasgow Royal Infirmary during 1863 and 1864, and very full details of the method of operating were given. Carbolic acid was used as a caustic in one of these cases, but there is not in the three papers any reference to the great discovery of which he was then laying the foundations, and which was two years later to be given to the world in the columns of THE LANCET. The articles which inaugurated the antiseptic system of surgery were five in number, each of them entitled "On a New Method of Treating Compound Fracture, Abscess, &c."; they appeared in THE LANCET of March 16th, 23rd, and 30th, April 27th, and July 27th, 1867. The first four of them contain the clinical histories of 11 patients suffering from compound fracture; these cases were under his care in the Glasgow Royal Infirmary during the years 1865 and 1866, and were treated by the local application of carbolic acid; the antiseptic was freely applied to the interior of the wounds in order to destroy the air-borne germs which had the property of causing putrefaction; the opening in the integuments was then covered with lint charged with carbolic acid and protected by an external layer of thin sheet metal. In the fifth of these articles the recommendations for opening abscesses were to the effect that a piece of rag from 4 to 6 inches square should be dipped into a solution of 1 part of crystallised carbolic acid in 4 parts of boiled linseed oil and then laid upon the skin where the incision was to be made. One edge of this rag being raised, the part was incised with a knife previously dipped in the oil, and the rag was instantly dropped upon the skin as an antiseptic curtain, beneath which the pus flowed out. For the subsequent dressings a kind of putty was made by mixing common whiting with the carbolised oil, and this, spread into a layer about 6 inches square, was laid over the incision. At the meeting of the British Medical Association in Dublin in August, 1867, a paper on the antiseptic principle in the practice of surgery was read by him and was printed in THE LANCET and the *British Medical Journal*. It does not describe any important modifications in the technical details, but draws attention to the marvellous improvement in the healthiness of his wards since the introduction of the new treatment. Hospital gangrene and pyæmia had formerly made a frequent appearance in two of his wards, but during the last nine months not a single case of pyæmia, hospital gangrene, or erysipelas had occurred in them. In these six papers Lister made several references to two of his house surgeons, each of whom was named Cameron. One of them was Dr. A. Cameron, who is believed to have died some years ago, while the other was Dr. (now Sir) Hector Clare Cameron, who was for many years professor of clinical surgery in the University of Glasgow, a position which he now holds in an emeritus capacity.

On Nov. 30th, 1867, Lister again wrote in THE LANCET, giving illustrations of the antiseptic treatment and explaining the principles on which it was based, while the two first communications to our columns manifesting the satisfaction of other surgeons with the new treatment appeared on Nov. 9th and Dec. 21st, 1867—the authors being respectively Mr. William Pirrie, professor of surgery in the University of Aberdeen, and Dr. John Maclatchy, of Kilmarnock, in Ayrshire. In the course of the next 12 or 14 months the dressings were rendered much more convenient than formerly by the substitution of carbolised shellac for the carbolised putty already described. The putty, although very serviceable, was awkward to handle when spread thinly and could not always be made to retain its position with certainty, whereas the carbolised shellac plaster spread on thin cloth was at once light, flexible, and strong. During the same period a great extension of antiseptic surgery was rendered possible by the introduction of ligatures of silk or catgut, which were absorbed or remained permanently buried in the living tissues. Owing to the great importance of the catgut ligature and the fact that it did not assume its final form until 1881, it will be convenient to summarise in one paragraph the leading points of its development during all these years and afterwards to return to the events of 1869.

Lister's original paper on this subject appeared in THE LANCET of April 3rd, 1869, with the heading "Observations on Ligature of Arteries on the Antiseptic System." In it he described the case of a woman, 51 years of age, whose left external iliac artery he tied on Jan. 20th, 1868, on account of a femoral aneurysm as big as a large orange and reaching somewhat above Poupart's ligament. Silk thread steeped in carbolic acid was used, the ends were cut short, and the wound was dressed antiseptically. Six weeks after the operation she walked for some time out of doors without over-fatigue, having also to descend and ascend three flights of stairs leading to her room. At the same time he recorded a very successful experimental ligature of the carotid artery of the calf, using for the purpose twisted threads of peritoneum at one place and fine catgut at another. He also published drawings showing the appearance, both naked-eye and microscopic, of the parts when examined 30 days after the application of the ligatures, and announced that surgeons "may now tie an arterial trunk in its continuity close to a large branch, secure alike against secondary hæmorrhage and deep-seated suppuration." The catgut ligatures used for this purpose were directed to be prepared by permanent immersion in olive oil containing carbolic acid, to which a very little water had been added. London surgeons, however, did not share these opinions as to the value of the catgut ligature, for eight years later—namely, in 1877—at meetings of the Clinical Society on Oct. 12th and Nov. 23rd, Mr. Bryant, Mr. Christopher Heath, Sir Thomas Smith, and Mr. Maunder reported cases under their care in which after the application of carbolised catgut ligatures there was either secondary ulcerative action, or secondary hæmorrhage, or recurrence of pulsation in aneurysms. In 1881 Lister was president of the Clinical Society and selected the catgut ligature as the subject of his inaugural address, delivered on Jan. 28th in that year. In this address, which fills more than ten columns of THE LANCET, he said that the favourable results which he had obtained with the catgut ligature were probably due to the simultaneous antiseptic treatment of the wounds continued till healing was perfect; this proviso was essential, for under ordinary treatment (i.e., without antiseptics), if there was a sinus leading to the ligature, septic processes would spread along it, and by inducing unhealthy suppuration and ulceration might give rise at last to disaster from hæmorrhage. The catgut ligatures which he had hitherto been using had, however, one disadvantage—namely, that two months at least were required for their preparation, but he had recently obtained an excellent material for ligatures and sutures by merely immersing the catgut for 48 hours in a solution of 1 part of chromic acid and 200 parts of carbolic acid in 4000 parts of water. It was then removed from the solution, dried, and placed in carbolised oil, after which it was ready for use. When catgut treated in this manner was imbedded in the living tissues it began to be superficially eroded by them after the lapse of a fortnight, and there was ultimately a "substitution of new living tissue for the dead old tissue of the catgut."

Lister had been a teacher of surgery for about ten years when he discovered the advantages of antiseptic dressings. In the lecture-room he had a pleasing delivery which was very easily followed by his hearers. His voice, though not loud and not altogether free from hesitation in pronouncing certain consonants, was neither indistinct nor stammering. Never at a loss for a word, he spoke with the calm deliberation which betokens a well-balanced judgment. His features commonly had a placid, contemplative, serious expression which easily relaxed into a smile in the course of conversation. In personal appearance he was of average height and somewhat slender build; he did not use eye-glasses; his hair, which was abundant and dark in colour, was generally worn rather long; except for small whiskers he was clean-shaven. Both in manner and in speech he was uniformly gentle, sympathetic, and totally free from abruptness, affectation, or self-assertion.

In July, 1869, Professor Syme resigned the chair of clinical surgery in the University of Edinburgh and in the following month Lister was appointed his successor. Not long after entering on the duties of his new position he endeavoured to strengthen his antiseptic precautions by means of an apparatus which could deliver a jet of carbolised spray whenever dressings were applied or changed. He also at this time wrote a long paper entitled "On the Effects of the Antiseptic System of Treatment upon the Salubrity of a Surgical Hospital." This paper, published in THE LANCET of Jan. 1st and 8th, 1870, could not but contain some references to the fact that infective surgical diseases had been notoriously prevalent in the Glasgow Royal Infirmary for many years. The directors of that institution, disturbed by the publicity given to these details, thereupon made a luckless attempt to impugn his statements in the form of a letter which appeared in THE LANCET of Jan. 29th. This production, which was signed by Mr. Henry Lamond, the secretary, plainly showed that the directors did not fully comprehend the significance of hospital gangrene appearing in a healthy wound or of pyæmia suddenly attacking surgical patients. They declared that "in their opinion ..... the improved health and satisfactory condition of the hospital, which has been as marked in the medical as in the surgical department, is mainly attributable to the better ventilation, the improved dietary, and the excellent nursing to which the directors have given so much attention of late years." The directors of the Glasgow Royal Infirmary were as enlightened, intelligent, and well-meaning as any similar public body in the kingdom, but they could not be expected to understand that medicine and surgery are progressive sciences; their minds worked in the same way as the minds of the generality of boards, committees, and councils must work when they are betrayed into dogmatising upon insufficient information. Another point which was not at that time raised by Mr. Lamond, but had no doubt received attention from the directors, was the greater expense of antiseptic than of ordinary dressings. We were able to indicate in these columns that in the Glasgow Royal Infirmary the extra outlay in this respect was regarded as of doubtful utility. Lister, of course, adhered to his belief that the use of antiseptics had a powerful effect in preventing the complications known as hospital diseases. Writing in THE LANCET of August 27th, 1870, he stated that having now been in charge of 50 beds in the Edinburgh Royal Infirmary for nine months, he had not as yet had any case of pyæmia or hospital gangrene.

As already mentioned, carbolised shellac had now for some time superseded carbolised putty in the making of antiseptic dressings, and articles on the treatment of compound dislocation of the ankle by means of this lac plaster, combined with oiled-skin protective, were published by Lister in THE LANCET of March 19th and 26th and April 9th, 1870, which afterwards, we believe, appeared in pamphlet form. At the meeting of the British Medical Association held at Plymouth in August, 1871, he delivered the Address in Surgery, giving to his discourse the title of "The Antiseptic System of Surgical Treatment"; lac plaster and other antiseptic dressings as well as the spray apparatus were shown at the meeting. The address was published in the *British Medical Journal*. After doing good service for about six years the lac plaster was in its turn superseded by gauze charged with carbolised resin, and very full directions for the preparation of this new dressing were given in THE LANCET of March 13th, 1875. This memoir was the first of a series of seven articles, occupying altogether 27 columns, which Lister contributed to this journal in that year. They were all headed "On Recent Improvements in the Details of Antiseptic Surgery." The second and third dealt mainly with various methods of employing carbolised oil and drainage-tubes. The fourth discussed the opening of certain abscesses, the sterilisation and use of sponges, and Lister's experimental proof that the septic ferments were solid particles and not some kind of material in solution; this latter subject had, however, been already set forth by him very fully in a paper published in the *Quarterly Journal of Microscopical Science* for October, 1873, with the heading "A Further Contribution to the Natural History of Bacteria and the Germ Theory of Fermentative Changes." The fifth, sixth, and seventh articles of the series were devoted to the use of boric acid as an antiseptic. In 1875 he made a visit to several university towns in Germany, and the close hold that his doctrines had now obtained upon the intelligence of all enlightened men of science was shown by the enthusiastic welcome that he received from various professors.

In this year the meeting of the British Medical Association was held at Edinburgh, the Address in Surgery being delivered by Professor James Spence. Lister was President of the Section of Surgery, and in this capacity delivered an

address dealing with the great improvement in the healthiness of hospitals in which the antiseptic treatment had been introduced. This address was published in the *British Medical Journal*. From this time forward scientific medical opinion was definitely ranged on the side of Lister's theories. His results were beyond controversy, and dissentient voices were disregarded or classed as evidence of a comic, if respectable, conservatism.

In 1876 Lister was nominated by the Crown to a seat on the General Medical Council as representative of Scotland in succession to Dr. James Warburton Begbie of Edinburgh, who died on Feb. 25th in the same year. The nomination took effect as from March 24th, and in the ordinary course would have held good for five years, but in the middle of 1877 he accepted an invitation to come to London; he accordingly resigned his seat as from August 3rd, 1877, and was succeeded on the Council by Dr. Andrew Fergus of Glasgow. During this his second stay in Edinburgh he resided in the first instance for a short time at 17, Abercromby-place, and afterwards at 9, Charlotte-square.

Sir William Fergusson, professor of clinical surgery in King's College, London, and senior surgeon to King's College Hospital, died on Feb. 10th, 1877. He had held two successive professorships in King's College—namely, that of surgery from 1840 to 1870, and that of clinical surgery since 1870; he had also gained all the distinctions which were open to a member of the medical profession. Mr. John Wood at this time filled the chair of systematic surgery in King's College, but on Sir William Fergusson's death two professorships of clinical surgery were created, one of them being given to Mr. Wood and the other to Mr. Lister; the vacant chair of systematic surgery was filled by Mr. Henry Smith. Lister in accepting this appointment stipulated for and obtained separate wards, house surgeon, dressers, and nurses. His first house surgeon at King's College Hospital was Sir W. Watson Cheyne, who came with him from Edinburgh, and in 1882, in his "Antiseptic Surgery," presented an exhaustive view of the subject in its then stage of development.

Lister delivered the introductory address at King's College at the opening of the session 1877–78, his subject being the phenomena known as fermentation, with special reference to the putrefaction of blood and the souring of milk. The causes and nature of lactic fermentation were also very fully discussed by him on Dec. 18th at a meeting of the Pathological Society, and a number of original experiments were shown and explained. A lengthy report of this address will be found in our columns and in the Transactions of the Pathological Society of London. But versed as he was in all pathological problems, it was in clinical surgery that his deepest interest lay. During the two following years two clinical lectures embodying the results of recent experience were published by him in THE LANCET. The first was on a case of excision of the knee-joint and on the use of horse-hair as a drain for wounds; it appeared on Jan. 5th, 1878. In the second, which appeared on Dec. 20th, 1879, he gave details of the progress of two cases—one in which a little boy had been operated on for empyema and one in which a tumour had been removed from a woman's back, leaving a very large open wound. Both of these cases were dressed with carbolised gauze prepared with a mixture of 1 part of carbolic acid, 4 parts of resin, and 4 parts of paraffin, the spray apparatus being brought into action at the renewal of the dressings. In this lecture he also discussed at some length the function of that part of an antiseptic dressing which he called the protective. This was a layer of material employed to protect the healing surface from irritation by the carbolic acid contained in the outer portion of the dressings. It has been said that Lister was already using the protective in 1870; the improved form which he now recommended was made of oiled silk coated on both sides with specially thick copal varnish and afterwards covered with a layer of dextrine so as to ensure its being wetted when dipped into a watery solution of carbolic acid. The test of a properly made protective was that a solution of carbolic acid might be kept in contact with one side of it for three or four hours without carbolic acid being perceptible to the tongue on the other side. In this clinical lecture and also in the course of some remarks made by him on May 13th, 1881, at a meeting of the Clinical Society of London, of which he was then President, Lister alluded to the toxic effects sometimes produced by carbolised dressings. He said that such cases were infrequent in his practice, probably because he did not repeat the direct application of carbolic acid to a wound oftener than was absolutely necessary. At the outset he destroyed the germs which might have gained access to the wound; and the excess of carbolic acid used for this purpose was soon got rid of by evaporation or absorption; this having been accomplished, the wound remained aseptic and free from carbolic acid, being covered by the protective which was impervious to the carbolic acid existing in the external dressings. Some patients, however, were intolerant of even minute quantities of this antiseptic, and owing to this idiosyncrasy a few instances of toxic absorption had come under his notice. For such cases two other very good antiseptics were available—namely, either salicylic acid in the form of salicylic jute, or a gauze charged with a mixture of 1 part of oil of eucalyptus globulus and 3 parts each of gum dammar and paraffin.

On July 1st, 1880, he was elected a member of the Council of the Royal College of Surgeons of England simultaneously with Mr. William Cadge, Mr. Thomas Bryant, and Mr. Thomas Smith; on expiry of his term of office he decided that he would not seek re-election. At the meeting of the British Medical Association held at Cambridge in August, 1880, he took part in two of the discussions and received the honorary degree of LL.D. from the University.

An interesting subject, which has already been touched upon, is the reception given to the new treatment by various leading members of the medical profession. The history of medicine abounds with instances of vigorous opposition to important advances and improvements, and Lister had for several years to encounter much hostile criticism. Within eight months of the publication of his first paper on compound fracture Sir James Simpson, professor of midwifery in the University of Edinburgh, wrote in THE LANCET of Nov. 2nd, 1867, an article five columns in length elaborately proving what was already well known and generally admitted—namely, that Lister was not the first surgeon to use carbolic acid. He, moreover, assured his readers that Lister's methods of preparing and applying antiseptic dressings were not original, but had already been in use for some years by three surgeons in Paris (Dr. Lemaire, Dr. Déclat, and M. Maisonneuve), by Dr. Küchenmeister in Dresden, and by some others. Sir James Simpson's arguments, however, did not make many converts, and his attack on Lister came to nothing. During the next 12 or 13 years many of Lister's pupils trained in Glasgow and Edinburgh practised the antiseptic treatment and spread a knowledge of its essential details, but notwithstanding all the demonstrations of its utility that had been given in the hospitals, in the lecture room, and in the medical press, not a few eminent English surgeons were as incredulous in 1880 as the directors of the Glasgow Royal Infirmary had been in 1870. As illustrations of this it may be sufficient to specify two men of great reputation, one in London and one in Birmingham, each of them proficient in the arts of controversy and exercising much influence on professional opinion. At the meeting of the British Medical Association held at Cork in August, 1879, the address in surgery was delivered by Sir William S. Savory, who spoke with his wonted fluency and eloquence in attack or ridicule of the system of antiseptic surgery. Sir William Savory enjoyed the then unprecedented distinction of being elected President of the Royal College of Surgeons of England for five years in succession, was full surgeon at St. Bartholomew's Hospital from April, 1867, to November, 1891, and afterwards consulting surgeon until his death in 1895, so that his opposition was a serious matter. Mr. Lawson Tait, of Birmingham, though not so officially important a man, was a great surgeon, and his antipathy to the Listerian doctrines was far more unrestrained. Tait was the first professor of gynæcology at Mason University College, and delivered the address in surgery at the meeting of the British Medical Association held there in 1890. A very skilful surgeon and gynæcologist, he proposed several new and valuable methods of treatment and had a remarkable success in abdominal operations, but his attitude towards the antiseptic doctrines betrayed his unlucky limitations. His opinion of Lister's antiseptic method may be inferred from the following extracts taken from two letters. In the first he wrote: "In my experience it was an almost uniform result that wounds dressed after Lister's plan suppurated, and in many cases they sloughed, and though none of the patients died many of the recoveries were anxious and protracted. ..... It is therefore to me conclusively proved that our

improved results in abdominal surgery do not depend on Mr. Lister's principles at any rate." In the second he wrote: "Lister's antiseptic doctrines and practice were based upon a conception altogether false from my point of view. ..... The Listerism of 20 and 15 and 12 and 10 years ago is dead. ..... The doctrines and practices of Lister have been the basis of the strangest surgical craze of the nineteenth century." Savory made no converts, Tait had no following, and gradually the surgeon who ridiculed Lister was seen himself to be ridiculous.

At the International Medical Congress which met in London in the beginning of August, 1881, Lister delivered two addresses—one on August 5th before the Pathological Section on the Relation of Micro-organisms to Inflammation, and one on August 8th before the Surgical Section on the Treatment of Wounds. These two addresses contain what seems to be his first published reference to pathogenic bacteria as a distinct class of micro-organisms (see THE LANCET of Oct. 22nd, 1881, p. 698, column 1; and Nov. 26th, 1881. p. 902, column 1 and footnote). At the end of the first of these addresses he explained his views on the treatment of strumous disease of joints, while the leading feature of the second one was a discussion of the success which in the practice of several surgeons had followed ovariotomy performed without antiseptic precautions. On Oct. 29th, 1883, he delivered before the Medical Society of London an address on the Treatment of Fracture of the Patella. The patients were seven in number, five suffering from recent fracture and two from ununited fracture of several weeks' standing; the fragments were wired, the wire being sometimes removed subsequently and sometimes left permanently *in situ*. The address was published in the *British Medical Journal*, and formed a very practical demonstration of what antiseptics could do; for with the Listerian methods an injury, too often under the older treatment leading to recurrent and permanent lameness, could be absolutely and safely cured.

In December, 1883, he received the honour of a baronetcy.

On Oct. 20th, 1884, he delivered before the Medical Society of London an address on Corrosive Sublimate as a Surgical Dressing. He had already, in the course of a discussion at the Woolwich Military Medical Society on Feb. 15th in the same year, drawn attention to the antiseptic properties of this substance. In this address, which will be found in our columns, he described a great many original experiments devised for the purpose both of testing the efficacy of various antiseptics and also of ascertaining the best means of applying corrosive sublimate. He found that a solution of this substance in the serum of horse's blood, although much less irritating to the skin than a solution of equal strength made with water, was nevertheless powerfully antiseptic. As the result of various experiments with serum solutions he gave the preference to a combination of 1 part of corrosive sublimate with 100 parts of serum. Gauze charged with this in the proportion of 2½ parts of the liquid to 1 part of gauze would, when dried and ready for use, contain from 2 to 3 per cent. of its weight of the mercurial salt. Although very satisfactory as an antiseptic application to wounds, this gauze was somewhat harsh mechanically and was not very absorbent; the manufacture of it was also attended with the difficulty that the necessary serum of horse's blood was not always easily obtainable.

Lister had already publicly stated that his actual practical work in surgery was drawing to a close, when in November, 1889, he delivered two discourses on a new antiseptic dressing—one of them before the Medical Society of London on Nov. 4th and the other before the Hunterian Society on Nov. 27th. Including an account of his method of treating old dislocations of the shoulder-joint, the two articles together occupy nearly 16 columns of THE LANCET. He commenced with a short reference to the serum and corrosive sublimate described, as already mentioned, some five years back, and said that a few weeks after that date he began to experiment with the double salt of bichloride of mercury and chloride of ammonium, familiarly known by its mediæval name of sal alembroth. As compared with bichloride of mercury it was more efficacious antiseptically and much less irritating, but its free solubility rendered it liable to be washed out of the dressings by the discharge from the wound. Lister therefore regarded it as untrustworthy, and concluded his account of it with the following remark: "I may say that I myself have never published anything in favour of sal alembroth dressings; I have never been satisfied with them. It has leaked out that I have used them and they have come into extensive employment, but never with my published sanction." Biniodide of mercury, prepared by precipitating a solution of bichloride of mercury with iodide of potassium dissolved in a weak solution of starch, was a useful antiseptic for applying to gauze, as the starch caused the feebly soluble precipitate to adhere firmly to the fibres; the biniodide was, however, sufficiently soluble in blood serum to become irritating. Lister therefore resumed some experiments which he had already been making with the precipitate obtained by mixing solutions of cyanide of mercury, cyanide of potassium, and sulphate of zinc. This precipitate was an amorphous powder, insoluble in water, but soluble in 130 parts of glycerine, or 3000 parts of blood serum. Its mercury component was soon found to be unexpectedly small; subsequent investigation showed that it was a true double cyanide of mercury and zinc but of an unusual type; an account of its chemical peculiarities will be found in a long paper by Professor Wyndham R. Dunstan, published in the *Journal of the Chemical Society* for 1892. This double cyanide had a remarkable power of inhibiting bacterial growth. Its germicidal efficacy or ability to destroy existing bacteria was inferior to its inhibitory power, but this deficiency was corrected by moistening the dressings with a 5 per cent. solution of carbolic acid; corrosive sublimate must not be employed for this purpose, because it formed with the double cyanide a triple compound which had the defects of being feebly germicidal and highly irritating. Lister found by experiments on his own person that the powder of the double cyanide might be kept applied to the skin for an indefinite time without occasioning any irritation. The powder moistened with a weak solution of corrosive sublimate and rubbed into hairy parts would also render the hairs aseptic. Copious directions for the preparation and use of dressings charged with this precipitate will be found in Lister's own words in THE LANCET of Nov. 9th, 1889, and Jan. 4th, 1890.

At the International Medical Congress held at Berlin in August, 1890, he delivered an address on the Present Position of Antiseptic Surgery. On this occasion he made some observations on the success in abdominal operations achieved by certain surgeons who were well known to be hostile to the use of antiseptics as employed by himself. He also mentioned that carbolic acid had now given place to the less irritating although more efficient solutions of corrosive sublimate, and that the carbolic spray had been abandoned three years previously. He further stated that the antiseptic combination of cyanides of mercury and zinc could now be prepared in a perfectly definite manner; although the new product contained twice as great a percentage of cyanide of mercury as was present in the substance originally used, it nevertheless had no tendency to cause irritation.

At the International Congress of Hygiene and Demography held in London in August, 1891, he was president of the Section of Bacteriology, and delivered the introductory address in that section.

In 1892 the regulation imposing an age-limit made it necessary for him to resign his position as clinical lecturer at King's College Hospital. When making his last appearance in this capacity at the end of July in that year he addressed the students on the Present Aspect of the Essential Parts of the Antiseptic Treatment of Wounds, spoke with some sadness of the termination of his work as a teacher, and reminded them that medical practitioners were under an obligation to labour for the good of their fellow men. In the ensuing session, 1892–93, he received the title of emeritus professor of clinical surgery, being succeeded in the duties of the chair by the late Mr. W. Rose. The authorities of King's College retained his services as surgeon to the hospital for another year, until at a meeting of the council held on July 26th, 1893, he was appointed consulting surgeon.

On Jan. 18th, 1893, he delivered at the hospital in the London post-graduate course an address on the Antiseptic Management of Wounds. As he would in a few months cease to be an active member of the hospital staff, this address, which was printed in THE LANCET of Jan. 28th and Feb. 11th and 18th, 1893, was very important as containing the results of his matured experience of antiseptic surgery. It was not, indeed, his final utterance on the subject, for Sir

Hector Cameron's small book "On the Evolution of Wound Treatment during the last Forty Years," published in Glasgow in 1907, contained an independent section of five pages headed, "Note by Lord Lister." In this "Note" Lister added a little to what he had said in the address with regard to the properties and use of the double cyanide of mercury and zinc, and he made an express reference to this address, without indicating that his views as there set forth had undergone any change. For the absorption of blood or other discharges from an operation wound he preferred sponges to any of the substitutes that had been at various times proposed. For the purification and sterilisation of such sponges, with an especial view to the destruction of both the sporeless micrococci and the spore-bearing tubercle bacillus, he preferred carbolic acid (dissolved in 20 parts of water) to any other germicide. He used a precisely similar solution for purifying the instruments, the hands of the operator, and the skin of the patient, except only in the case of the eyelids, for which carbolic acid was too irritating, and a weak solution of corrosive sublimate was probably the best substitute. In circumstances where it was impossible to exclude septic agencies, such as in operations upon the mouth or the rectum, or in putrid sinuses, or in certain compound fractures, iodoform might be dusted over the cut surfaces of a wound, after mopping with a solution of 40 grains of chloride of zinc in an ounce of water. The usefulness of iodoform was, however, rather limited. The agent which he had found the most satisfactory as the antiseptic ingredient for incorporation with the gauze of the external dressing was the double cyanide of mercury and zinc, this substance being made to adhere to the gauze by mixing it with an aniline dye called rosanilin in the proportion of a quarter of an ounce of the dye to 4 pounds of the double cyanide. Before application to a wound the cyanide gauze must be rendered damp with solution of carbolic acid. The cyanide powder dyed with the rosanilin might also be treated with enough of the 1 in 20 carbolic lotion to make a sort of soft mud or cream which might be applied with a camel's-hair brush to parts where there was very little space between the wound and some source of septic contamination such as the anus. In some circumstances the cyanide powder might possibly be used as a kind of first-aid dressing by dusting it over wounds with a pepper-box. When there was a free discharge from a wound he preferred, as a rule, to remove the first dressing after the lapse of 24 hours, but a longer interval ought to be allowed after certain amputations. Very full directions for carrying out the various procedures were given by Lister both in Sir Hector Cameron's book and also in the numbers of THE LANCET already mentioned.

On April 9th, 1895, at Marlborough House, the Prince of Wales (later King Edward VII.) presented Lister with the Albert Medal of the Royal Society of Arts which had been awarded to him in recognition of his application of antiseptic methods to practical surgery. On July 30th of the same year, in the theatre of King's College Hospital, he was presented with a three-quarter length portrait of himself, painted by Mr. Lorimer, A.R.S.A., and accompanied by an illuminated and illustrated album containing the names of his friends, colleagues, and pupils, who had agreed on this method of showing the affection and esteem which they entertained for him. The presentation was made by Sir John Erichsen, to whom Lister had been house surgeon more than 40 years previously. In the same year he obtained the proudest scientific position open to a man by being elected President of the Royal Society.

When the British Association for the Advancement of Science met at Liverpool in September, 1896, he occupied the presidential chair, and took for the subject of his address the Interdependence of Science and the Healing Art. As the British Association has no medical section communications on strictly medical topics are not received, but biology has for a long time held an important place on the programmes, and he delivered an interesting address dealing mainly with the phenomena of fermentation and bacterial growth, the relation of bacteria to the healing of wounds and to the causation of certain diseases, the results of the application of the germ theory to surgery, the value of vaccination as a preventive of small-pox, and Metchnikoff's observations on phagocytosis. It was not the first time that he had contributed to the proceedings of the Association, for as long ago as 1857, when the Association met at Dublin, physiology being included as a subsection in the Section of Botany and Zoology, Lister read a paper on the Flow of the Lacteal Fluid in the Mesentery of the Mouse; he found that the lacteals, though known to be muscular, did not, in the mesentery at least, promote the flow of the chyle by contraction, rhythmical or otherwise; indigo mixed with the food of the mice passed freely along the intestines, but none of it was ever seen in the chyle.

Lister's elevation to the peerage was the most conspicuous feature of the New Year honours conferred by Queen Victoria in the beginning of 1897, the same year in which she at a later period celebrated the sixtieth anniversary of her accession to the Throne. Nothing was more noticeable than the universal approval which the appointment called forth from all quarters, the press of every party and shade of political feeling being hearty in its praise of the creation of the new peer, whose titular distinctions were manifestly independent of political considerations, because it was under a Liberal administration (Mr. Gladstone's) that he became a baronet and under a Conservative administration (Lord Salisbury's) that he became a peer. He took his seat in the House of Lords on Feb. 23rd, being introduced by Lord Watson and Lord Playfair, and delivered his maiden speech in the middle of May in the course of a debate on venereal disease amongst the troops in India. He did not take any part in political debates, but spoke fully upon the Vaccination Bill in 1898.

On March 29th, 1897, at the Royal College of Surgeons of England, a portrait of him, painted by W. W. Ouless, R.A., was formally presented to the College on behalf of the subscribers. The honorary medal of the College was awarded to him on April 8th, the actual presentation of it being made on June 10th. During the end of August and beginning of September, 1897, the British Association for the Advancement of Science and the British Medical Association held their annual meetings, not in the United Kingdom as usual, but in Canada; Lister was present at both and was in a variety of ways cordially welcomed by the Canadian representatives of medicine and science. On Oct. 8th, 1898, he opened the Thompson-Yates Laboratories of physiology and pathology in Liverpool and received the degree of Doctor of Science from the Victoria University of Manchester. On Feb. 28th, 1899, he was nominated a special foreign member of the Paris Academy of Sciences, and on April 22nd he was again in Liverpool presiding at the inauguration of the School of Tropical Medicine in that city; this school subsequently had at its disposal the Mary Kingsley Memorial Medal, which was founded for the purpose of recognising the work of those who had accomplished much in the cause of tropical medicine, and in February, 1908, the medal was awarded to Lister.

Professor Thomas Henry Huxley, who died on June 29th, 1895, had commenced his professional career as a student in the medical school of Charing Cross Hospital in 1842, and in memory of him a special prize and a scholarship for students in that school were founded; a lectureship was also created, the lecture to be delivered every second year and to deal with recent advances in science and their bearing on medicine and surgery. The first of these Huxley lectures was delivered by Professor Michael Foster, of the University of Cambridge, on Oct. 5th, 1896; the second by Professor Rudolf Virchow, of Berlin, on Oct. 3rd, 1898; and the third by Lord Lister on Oct. 2nd, 1900. Lister's discourse was entitled "Early Researches leading up to the Antiseptic System of Surgery," and narrates the whole story from the chief actor's point of view. The researches in question were pursued during the period of about 12 years between 1852, when he took his degree, and 1864, when he made persistent but unavailing trials of sulphite of potassium as recommended by Dr. Polli of Milan in the treatment of pyæmia. The chief points touched upon in the Huxley lecture were suppuration, inflammation, the coagulation of the blood, and the diversified phenomena presented by the circulation of the blood and the movement of the pigment granules as seen with the microscope in the web of the frog's foot.

At a comparatively early stage in his career Lister's microscopical observations of certain vital phenomena received favourable recognition from the Royal Society of London, and in later years the highest honours at the disposal of that learned body were bestowed on him. As these various events occurred at intervals during a period of more than 40 years it will be convenient to group them

in one or two paragraphs separately from his surgical work. In his student days medical microscopy was very different from what it now is, but he was an adept in the methods of manipulation then practised, and particularly expert in drawing microscopic objects by means of the camera lucida. Some of his papers communicated to the Royal Society have been already mentioned. The first four, written while he was assistant surgeon to the Edinburgh Royal Infirmary, were as follows: (1) An Enquiry Regarding the Parts of the Nervous System which Regulate the Contractions of the Arteries; (2) On the Cutaneous Pigmentary System of the Frog; (3) On the Early Stages of Inflammation; and (4) Preliminary Account of an Enquiry into the Functions of the Visceral Nerves, with special reference to the so-called "Inhibitory System." Nos. 1, 2, and 3 were communicated for him by Dr. William Sharpey, secretary of the society; they were read on June 18th, 1857, and were printed consecutively in Vol. CXLVIII. of the Philosophical Transactions of the Royal Society (the annual volume for 1858), where they fill 96 large pages, and are illustrated by two full-page plates of drawings, both plain and coloured. No. 4 was in the form of a letter to Dr. Sharpey, and was printed in the Proceedings of the Royal Society, Vol. IX. (1857-59), being marked, "Received, August 13th, 1858." On June 7th, 1860, he was elected a Fellow of the Royal Society. On June 11th, 1863, he delivered before the society a Croonian lecture on the Coagulation of the Blood, which, as already mentioned, was soon afterwards published in THE LANCET. In 1880 one of the Society's Royal Medals was conferred on him. In reference to this award Mr. William Spottiswoode, in his presidential address delivered on Nov. 30th in that year, said that "Lister's claims to the honour of a Royal Medal are based upon his numerous and valuable contributions to physiological and biological science during the last 30 years." On Dec. 31st, 1890, Sir William Thomson was elected President of the Royal Society. He was soon afterwards raised to the peerage with the title of Lord Kelvin, and on the completion of the usual period retired on Nov. 30th, 1895. Lister was on that day elected President in succession to Lord Kelvin, and accordingly occupied the chair at the meeting held on Dec. 5th. Although several physicians have been presidents of the Royal Society Sir Benjamin Collins Brodie is the only surgeon upon whom this honour has been conferred except Lister. It is customary for the President of the Royal Society to deliver five official addresses, one at the conclusion of each year of office. In Lister's case the first one was published in the Proceedings of the Society, and the subsequent ones in its Year-book. At the annual meeting of the society in 1902 he received the Copley medal. Replying for the medallists at the dinner usually held on the evening of the meeting, he commented on the unsympathetic attitude of many surgeons towards the antiseptic system in the earlier period of its history, proving that he knew, though his attitude had been throughout so steadily forbearing, that animus had been employed against him. His revenge in this his jubilee year (he was admitted M.B. Lond. and F.R.C.S. Eng. in 1852) was very complete, for most of his opponents' names and all their words had been by this time forgotten. The *British Medical Journal* published on Dec. 13th, 1902, a number especially in celebration of Lister's jubilee of medical work.

Lister's admiration for the researches of Pasteur naturally led him to take a deep interest in the movement for the creation in this country of an establishment specially devoted to the bacteriology of infectious diseases and having objects of a general similarity to those of the Pasteur Institute in Paris and the Imperial Hygienic Institute in Berlin. At a meeting held in London at the Mansion House on Dec. 5th, 1890, an executive committee was formed to take measures for the purpose, and of this committee Lister was appointed chairman. Cambridge was at first considered to be an advantageous centre for carrying on work of this kind, but a site was eventually secured in Chelsea Bridge-road, London, overlooking the River Thames. The new establishment was originally called the British Institute of Preventive Medicine. There was at the outset some difficulty in obtaining a licence from the Board of Trade, but this was satisfactorily arranged, and the articles of association were duly signed at Lister's residence in London on July 21st, 1891, by himself as chairman of the council, Sir Spencer Wells, Sir Henry Roscoe, Sir George Humphry, and others. The work of the institute was begun in temporary premises at 101, Great Russell-street, London, during the erection of the permanent buildings which were not ready for occupation until May, 1898. In connexion with a benefaction bestowed by the Jenner Memorial Committee in 1898, the establishment on Dec. 6th in that year underwent a change of name, being then designated the Jenner Institute of Preventive Medicine. At the annual general meeting of the institute held in June, 1899, it was announced that Lord Lister would be chairman of the governing body. On Sept. 13th in the same year permission was obtained for an alteration of the memorandum of association in consequence of a gift of £250,000 received from Lord Iveagh. After the change of name to Jenner Institute of Preventive Medicine a curious and unexpected difficulty came to light—namely, that a manufacturer of calf lymph carrying on business at no great distance from the institute had already called his premises the "Jenner Institute for Calf Lymph" and was using Jenner's name as a hall-mark for his wares. On account of the similarity of the two names it would have hardly been possible to avoid creating some bewilderment in the minds of the public if the Jenner Institute of Preventive Medicine manufactured calf lymph. The problem was solved at a meeting held at the institute in Chelsea Bridge-road in July, 1903, when a motion to alter its name to "The Lister Institute of Preventive Medicine" was unanimously adopted, and in the course of the next two months the legal formalities necessitated by the change of name were completed.

Lister was on more than one occasion honoured by receiving appointments as surgeon to the reigning sovereign. During his professorship in the University of Edinburgh he became one of Queen Victoria's surgeons in Scotland, but on his removal to London in 1877 he necessarily vacated this position. At this time Sir James Paget was one of the Queen's serjeant-surgeons, and after the death of Sir Prescott Gardener Hewett in 1891 he remained the only one. Sir James Paget having died on Dec. 30th, 1899, it was announced in the *Gazette* of March 20th in the following year that Lister had been appointed to the vacancy; he had already for some time been surgeon extraordinary to Her Majesty. After the death of Queen Victoria, which occurred in January, 1901, Lister was during the first year of the new reign sole serjeant-surgeon to King Edward VII., but he subsequently shared this dignity with a colleague promoted to the same rank.

Lister's eightieth birthday, which fell on Friday, April 5th, 1907, brought to him congratulatory letters and addresses from all parts of the world. At a meeting held at the Royal College of Surgeons of England on the previous day under the chairmanship of Sir Henry Morris, President of the College, it was decided that the anniversary would be suitably commemorated by a republication of Lister's scientific papers which, as he himself said in his Huxley lecture, were "scattered through a variety of media of publication extending over a pretty long period." It was also agreed to preface the volumes with an introduction which, without being in any sense a biography, would enable the various steps in his discoveries to be rightly appreciated. This most valuable contribution to the history of surgical progress was completed in 1909, the collected papers being published in two substantial volumes.

In 1908 he was invited to accept the position of Chancellor of the University of Glasgow, but felt himself compelled to decline the invitation because of the feeble state of his health; in that year, however, he published in THE LANCET and *British Medical Journal* three important original papers which had not previously been in print, although parts of them had been written several years before. The first one appeared on Jan. 18th, and contained a description of the preparation of catgut for surgical purposes; the catgut was directed to be placed in a solution of chromium sulphate prepared by mixing solutions of sulphurous and chromic acids, and after 24 hours' immersion was to be dried on the stretch. The second paper, which appeared on April 11th, was on the treatment of fractures of the patella of long standing; and the third, which appeared on June 27th, consisted of remarks on some points in the history of antiseptic surgery. They were the last on the long list of original articles which he had contributed to THE LANCET during a period of 43 years.

Among the various tokens of general public esteem bestowed on him, mention may be made of the freedoms of some municipalities. On June 15th, 1898, he received

the freedom of the city of Edinburgh, and on June 28th, 1907, the freedom of the city of London. On Jan. 21st, 1908, he was enrolled a freeman of the city of Glasgow, a letter from him being read expressive of his regret that illness prevented him from being present at the ceremony. As mentioned in the early part of the present article, Lister's birthplace is now included within the extra-metropolitan borough of West Ham, which is of comparatively recent creation, and at the annual meeting of the council held at Stratford in Essex on Nov. 9th, 1908, his acceptance of the freedom of the borough was announced by the mayor, who at the same time read a letter from him thanking the council for their courtesy; on account, however, of the weak state of his health it had been found necessary to dispense with the usual ceremonies.

In addition to the qualifications which originally admitted him to the medical profession, Lister held various honorary degrees from the Universities of Edinburgh, Dublin, Glasgow, Oxford, Cambridge, Würzburg, Bologna, Budapest, Geneva, and the Victoria University of Manchester. He was a Fellow of the Royal Societies of London and Edinburgh, of the Royal College of Surgeons of Edinburgh, of the Faculty of Physicians and Surgeons of Glasgow, and of University College, London; a laureate of the French Academy of Sciences; an associate member of the French Institute and of the Paris Academy of Medicine; a corresponding member of the Paris Surgical Society; and an honorary member of the American Academy of Arts and Sciences. A peer and a member of the Privy Council, he also possessed the British Order of Merit, the Grand Cross of the Danish Order of the Danebrog, and the Prussian Ordre Pour le Mérite.

We have purposely confined this obituary notice of the world's greatest surgeon to a list of the actual things that he did with the dates on which he did them. No panegyrics are needed: the greatest modern Englishman is dead.

Messages of sympathy have been received by Lord Lister's family from the King, from Queen Alexandra, and from other members of the Royal Family. The first part of the funeral service will be held to-day (Friday, Feb. 16th), in Westminster Abbey, at 1.30 P.M., and the interment will take place privately at Hampstead Churchyard. The pall-bearers will be: Lord Rayleigh, Lord Rosebery, Lord Iveagh, Sir Archibald Geikie, Sir Hector Cameron, Sir W. Watson Cheyne, Mr. Rickman J. Godlee, and Professor F. M. Caird. The offer of burial in Westminster Abbey was declined by the executors, because of Lord Lister's expressed wish to be buried beside his wife.

The portraits which we publish will be recognised as reproductions of the frontispieces to Lord Lister's Collected Papers. The plate was taken by Messrs. Barrauds, Limited, and the inset illustration by Messrs. Moffatt, of Edinburgh.

VIENNA.

(FROM OUR OWN CORRESPONDENT.)

Genealogy of the Austro-Hungarian Heir-Apparent.

THE well-known historian Otto Forst has recently published an elaborate monograph on the genealogy of the Archduke Francis Ferdinand, heir-apparent to the throne of Austria-Hungary, and several parts of the work will possess much interest for medical readers. The antecedents of the Habsburg family are very complicated, for numerous families of different nationalities have a place in the history of this famous and ancient house. The genealogical table of the Archduke Francis Ferdinand, who in due time is expected to succeed to the throne of his uncle, the present aged Emperor, contains 1204 ancestors, many of whom belong to more than one of the names mentioned, as the Habsburgs at various times frequently married into families of the same line. There are 112 different families altogether, from whom the archduke can claim descent. Of these, 71, or 63 per cent., were of German nationality, 20 were Polish, 8 were French, 7 were Italian, and 1 each belonged to the Russian, Scotch, Swedish, Roumanian, and Hungarian nations. It may be mentioned that all the ruling families of Germany are represented in the table, the Bavarian family of Wittelsbach predominating with 52 persons, who appear 204 times in the list. This was naturally to be expected, but at the same time the records show that 57 families, or about 50 per cent., had a place among the less important orders of the nobility, whilst some of the ancestors even belonged to the lower ranks of the population. Another interesting feature of the genealogy is the fact that the medical profession is represented, for the archduke is a descendant of the Medici, the famous Italian rulers, who had several pills in their coat of arms in memory of their ancestral occupation as apothecaries and medical men.

Proposed Reform of the Medical Curriculum.

The present system both of teaching and also of conducting examinations in the course of medical education is not very congenial to the majority of the students in this country, and several representations explanatory of their views have been sent to the Ministry of Education within the last few years. The principal changes desired by the students' committee are as follows. The examination on biology, botany, and chemistry should take place at the end of the second or third semester instead of one year later, as hitherto, so as to give one year more to clinical study. The examinations should last longer than the 15 minutes now granted to each candidate, and should be of a more general character than hitherto. Instruction in several branches of medicine, which hitherto has been only optional, should be made compulsory, the systematic teaching of otology, physical therapeutics, and serology being especially wanted, as their importance was growing daily. A final hospital year should be made compulsory before the student could graduate at the University, as is the rule in Germany. The students find much support in their endeavours amongst the professors and the profession generally, and their requests will most likely be complied with before long, as they do not involve any considerable expenditure of public money.

The New Scale of Prices (Arzneitaxe) for Drugs.

On Feb. 1st a new scale of prices for drugs came into force in this country, in spite of the opposition by the Krankencassen, which will find it a heavy burden on their finances. Pharmacy in Austria is controlled by the Government; the drug-stores are not only limited in number, but even the premises which they occupy are restricted as regards local situation, and the prices of the drugs are also fixed by a Government Order. The increase of prices is nearly universal for all drugs and remedies, the advance being from 40 to 100 per cent. above last month's prices. The alkaloids are now twice as dear as formerly owing to the manufacturers having organised a "trust" in this branch. Thus, for instance, a gramme (16 grains) of codeine now costs 1*s.* 8*d.*, whereas formerly it was 10*d.* Extract of opium has become dearer by 50 per cent.; ipecacuanha root is also dear. Phenol costs now a penny per gramme which formerly cost a halfpenny. Morphine has been raised from 7*d.* to 1*s.* 4*d.* per gramme, and bromide of sodium is dearer by 35 per cent. Ether for inhalation as an anæsthetic, menthol, and digitalis are now dearer by 50 per cent., but chloroform has become cheaper. As compensation for the increase of the price of the drugs, the charge for manipulating them (mixing, powdering, and dissolving in liquids) has been lowered, so that the public will not have to bear the full burden of the rise of prices. The pharmaceutical chemists still find that their business is not satisfactory, for the numerous ready-made preparations are so much asked for by the public that the profit made on the prescriptions dispensed in accordance with the old style is insignificant. The apothecaries would therefore like to restrict the sale of the ready-made preparations, as they derive little profit from it. On the other hand, the Krankencassen urge their medical officers to prescribe the necessary remedies in the cheapest possible way, to substitute equivalents for expensive drugs, and to make as little use as possible of alkaloids. The result is that the druggists find themselves in an unpleasant position, and suggestions have already been made to the effect that pharmaceutical businesses should be turned over to the Government and made a monopoly, like the sale of tobacco and salt in this country.

Clinical Material in Vienna.

In the General Hospital of Vienna, and in the other hospitals of this city where medical students receive instruction, over 34,000 in-patients were admitted in the year 1911, and their diseases were explained to, and watched by, the students. The number of new out patients in the same institutions was

a little over 100,000 that year; minor operations on all parts of the body were performed on out-patients and in a good many cases by the students themselves. Some 3000 post-mortem examinations were conducted in these hospitals—with us there is only very little difficulty in obtaining permission for such examinations in the case of a patient dying in a hospital—and the same number of births happened in the two obstetric clinics only. Thus, there was plenty of material for the instruction of the students, as well as for post-graduate classes and special courses. For practising surgical operations on the dead body there is ample opportunity in this city.

Feb. 10th.

THE NATIONAL INSURANCE ACT.

LECTURES ON THE PROVISIONS OF THE ACT.

THE secretary of the Insurance Commissioners has given notice that the National Health Insurance Commission (England) are organising a series of lectures in London with a view to explaining in detail the provisions of the National Insurance Act to officials of organisations likely to become, or assist in the formation of, approved societies. Each course, it is said, will consist of a sufficient number of lectures to cover the whole Act, so far as it relates to health insurance. Afternoon and evening courses have been arranged. Societies which desire that their responsible officials should attend these courses are requested to communicate at once with the secretary to the National Health Insurance Commission (England), Buckingham Gate, London, S.W. Where sufficient demand is shown to exist the Commissioners hope to arrange similar courses of lectures in provincial centres.

The recent declaration made by the Chancellor of the Exchequer as to the position of the medical men under the Act will require a good deal of explanation from the lecturers, if they are to do their duty and make clear those parts of the National Insurance Act which have reference to the medical profession.

"AN APPEAL FOR A STRONG BUT MODERATE POLICY."

Under this title a circular letter has been issued to the medical profession by a number of practitioners "attached to no particular party and committed by no pledges to support or oppose the present Council of the British Medical Association." On the one hand, they declare, is the so-called "No service whatsoever" policy of the *Practitioner* and of certain other bodies outside the British Medical Association. On the other hand is the policy already approved by a considerable number of divisions of the Association, including the general body of Scottish and Welsh Divisions—namely, "No service unless the six points and adequate remuneration are first definitely assured by the Commissioners in their regulations." The signatories believe that the former policy would be fatal to the interests of the profession, while the latter would lead to certain victory. They maintain that it is a delusion to suppose that the profession could by the former policy prevent the Act from coming into operation, or even prevent the medical benefits from being given in one form or another. It is too readily assumed, the circular continues, that if the profession refused to form panels, a whole-time service would be attempted. The Commissioners may also "suspend the benefit," giving the insured the equivalent in cash. In such case the approved societies, strengthened in numbers and in prestige, would undoubtedly undertake the organisation of separate medical services. They would be free from any of the restrictions which the Act places upon the Insurance Committees. They would be free to appoint doctors and dismiss them at their pleasure. They could make individual bargains with doctors, playing one off against another in the way that has produced all the abuses of cheap contract practice in the past. If the profession began by putting their case before the Commissioners and the public in a reasonable way, and their reasonable demands were refused, they would be in a strong position to resist. But if the profession began by refusing to negotiate, public sympathy would undoubtedly be alienated. The circular next asserts that the published opinions of counsel show conclusively that the six points can all be obtained under the Act as it stands. But in existing conditions no person or persons should be endowed with plenipotentiary powers. Whatever negotiations may take place, the complete control must be kept by the rank and file of the profession in their own hands. Any committee appointed to put the case for the profession before the Commissioners should be appointed for that purpose only, and should have no authority to settle terms. The circular was sent out at first with 52 signatures, and further names have since been added.

THE BRITISH MEDICAL ASSOCIATION.

In preparation for the Representative Meeting on Feb. 20th and 21st, at the Guildhall, London, many local divisions have already met, and some have favoured us with the results of their consideration of the Council's report and of the recommendations which we printed in our issue of Feb. 3rd. The information so far made public as to the intentions of the divisions has, however, been so partial that it would be unfair to draw any broad conclusion from it.

The Reform Committee of the British Medical Association have now drafted the Bill "to Amend the National Insurance Act," whose principal headings we published in advance last week. This amending Bill has been prepared by counsel. The Reform Committee recognise that it is outside the range of measures which can be brought forward by private Members, and they issue it as a definite scheme containing the minimum demands of the profession.

THE MEDICAL FEDERATION, LIMITED.

About 250 practitioners assembled at the Royal Hotel, Bristol, on Feb. 13th, to hear of the progress made by the project to which the Bristol Division of the British Medical Association has committed itself. The Federation is a limited company which has been registered under the Companies' Consolidation Act, 1908, with a provisional directorate composed of the executive committee of the Bristol Division of the Association. Its officers also are officers of the Association Division. At this meeting Mr. H. F. Devis, secretary to the Federation, explained its origin and its purposes. He showed that the movement is in no sense opposed to the Association, that on the contrary the two are in close touch with each other, and that success on the part of the Federation will go far to consolidate the Association. In a word, it is designed to collect quickly a large fund out of which medical men suffering financially through obedience to the advice of the Federation may be fully indemnified. It has been so contrived that it can be amalgamated with the British Medical Association or with any other body having as its chief aim the consolidation of the profession for purposes of defence. The promoters of the scheme anticipate that its membership will soon become co-extensive with that of the Association, since it offers an efficient fighting weapon. As soon as the movement attains national proportions the present provisional government will be superseded by a more widely representative one, and at the same time the Federation will be able to undertake a definite line of action in regard to the present crisis. It is announced that the scheme has been pronounced financially sound by experts to whom it has been submitted. After questions had been answered by Dr. T. M. Carter, the chairman, and Mr. G. Scott Williamson, managing director of the Federation, a resolution of confidence in the management was carried unanimously.

MR. LLOYD GEORGE AND THE MEDICAL PROFESSION.

The Chancellor of the Exchequer addressed a meeting of supporters of the Government at the London Opera House on Feb. 12th, and in the course of a speech of an hour and three-quarters' duration made the following reference to the medical provisions of the Insurance Act.

They talked about an amending Act, said Mr. Lloyd George. By all means; nothing was perfect, even in a Liberal House of Commons. But let them get on with the really good things in the Act and all these things would be added unto them. The Tories were doing their best to stir up the doctors to deprive the workmen of the only medical aid which many of them could afford in time to save their lives. A more dastardly enterprise no human being could conceive, and when they stood themselves, as they all had to stand in turn, in need of medical assistance, he was afraid their action now would not do much to relieve their anxieties. He wanted to tell the truth, the whole truth, in this matter, and spare not the false prophets. What about the doctors? He proposed to give them a perfectly frank statement of the Government's position, and he was confident that so long as the doctors did not mix up business and politics it would satisfy them and

every reasonable man among the medical profession. What was the position? A great deal was said about contract practice. What was contract practice? It was an undertaking whereby the doctor engaged to provide medical treatment for a man at a flat rate—it might be 4*s*., 5*s*., or 6*s*., or some other figure per annum. Sometimes it was a flat rate by which the doctor undertook to cure the whole of a man's family. In some districts it was 3*d*. a week, in others 4½*d*. per week. It varied. Contract practice might be good or it might be bad; it had not been created by the Insurance Act. More than half the workmen of the country were cured now by contract—more than half, when they took all the various methods of contract cure into account. Contract practice had its advantages as well as its disadvantages. What were its advantages? It avoided the necessity a doctor was under when he was dealing with a man earning a small weekly wage of sending him in a big bill after a long illness and getting paid in driblets or not getting paid at all, which unfortunately was very often the case. After all, no doctor wanted to be on what he might call "judgment summons terms" with his patients. No professional man he ever met cared to keep account books. They hated it. A doctor did not want to take up his time with the worry of keeping an account, of being paid 5*s*. on account of a bill of £10 and of receiving another 6*s*. in the street perhaps, putting it down, making up the balance, and sending it in at Christmas. He would rather not. So in the working-class districts of this country they had devised this method of contract practice of saying, "Give me 4*s*. or 5*s*. a year and I will cure you of all the ills that flesh is heir to." That was one advantage. There was another advantage for a doctor. It was a kind of retaining fee for the family practice. If the doctor cured the head of the family for 4*s*. he would cure the rest of the family for a good deal more. He could send in bills for the rest of the family. He did not say the doctor would charge more, but even if he did, and he (Mr. Lloyd George) thought possibly he would, there was this advantage in the bargain—that where the head of the family was ill there was no one to earn, whereas if someone else in the family was ill the earner of the family was there to pay the bill. It was a double advantage. It was an advantage to the man himself, and it was an advantage to the doctor who was building up a practice.

What were the disadvantages? It was underpaid. The doctors had themselves to blame for that. He had read a speech by his friend, Mr. Handel Booth, in which he described very vividly the under-cutting, the under-selling, the under-bidding that went on very often between doctors. They would not be surprised to hear that Scotsmen had taken full advantage of it, and that the result was that in Scotland the average rate of pay in every contract district was decidedly lower than in England. He saw a case in an important city like Aberdeen where a doctor undertook contract practice for 2*s*. 6*d*. The average in England was 4*s*. That was thoroughly bad. Underpaid work was shoddy work. It was not to the advantage of the patient or of the doctor. It was far better for the doctor to feel that he was fairly treated and getting a fair wage for the very difficult, delicate, responsible work which he had to accomplish. All this was bad. But he was not responsible for it; the Insurance Act was not responsible for it. The Insurance Act did not perpetuate it, did not extend it, and certainly did not create it. In so far as the Act was concerned, all they had done was to provide substantial funds which would increase by a very large percentage the pay the doctors were now getting for contract practice. He would put the doctors' grievances. The doctors had three great grievances, and he would say at once that he sympathised with them. The doctor's first grievance was that he objected to what he called society control. There were many members of Friendly Societies present, and he was sure they would bear with him while he dealt with this point. The doctors' complaint was that they were under the domination—or, as they put it, under the heel—of the Friendly Society, that it imposed upon them harsh terms. He was not going to express any opinion upon that. If it was true it was a real grievance. He knew that Friendly Society men would instantly protest; it was useful to remind doctors that there were two sides to the question. The second grievance was this: the doctors said, "We don't mind attending men who are earning low wages on contract terms, but we do object to well-to-do people creeping into the Friendly Societies and claiming to be treated on the same terms as the labourer earning 15*s*. a week." He had analysed many of the Friendly Societies of the country and he found they were by no means confined to working-men; there were tradesmen, farmers, publicans, schoolmasters, and professional men among the membership, and the doctors said it was unfair to expect them to treat these men at 4*s*. a head. He would tell the audience why the doctors said that. He was sure the profession would not quarrel with him when he made this statement. The doctor's bill was charged at a scale which had reference to the means of the patient. He did not charge a workman the same fee for a visit as he would charge a well-to-do tradesman or a professional man. The doctor said very truly, "It is because I am able to charge the well-to-do patients more that I am able to treat the workman for less." That was the doctor's case.

What was their third grievance? They said there were districts in England and Scotland and Wales where there was no contract practice at all at the present moment, where the doctors had refused to treat the patients on contract terms, and where the ordinary relations existed between doctor and a patient, where the doctor sent in his bill for time, attendance, medicine, and so on. There were districts in Lancashire—working-class districts—where they had no contract practice at all; there were certainly a very large number of rural districts where there was none, and doctors said, "Why should you force this obnoxious contract practice into districts where it does not exist at present?" He would give his answer to the doctors' grievances.

The first complaint was that they were under Friendly Society control. Under the Act they were no longer under the control of the Friendly Societies. There was an exception under what was known as the Harmsworth amendment, and he commended that amendment to the notice of certain newspapers which had taken full advantage of it to create trouble between the doctors and the Government. He would remind them that most of the trouble had arisen through the Harmsworth amendment, but that exception simply dealt with existing rights, and did not deal with the bulk of the insured persons. It did protect existing institutions, and he stood absolutely by that amendment. Speaking on behalf of the Government, whatever happened they declined to budge from that amendment. Dealing with the new practice that came into existence under the Act, what happened? The Government had set up an independent authority. It was true the insured persons constituted a majority, but that was only the very essence of things. They could not hand over to a committee power to spend money they were not responsible for finding. They must give the majority on a committee to persons who were responsible if any deficit arose. There were on this body representatives of the Government, of the County Council, and of the doctors. The committee could not arrange terms for paying the doctors without consulting the Local Medical Committee, representing the whole of the doctors in that district, and as though that was not enough an appeal had been allowed to the Insurance Commissioners upon the whole of the terms. Was not that an improvement on the present system under which the doctors dealt face to face with the societies without any appeal to anybody?

The doctors' second grievance had reference to the income limit. What had the Government done there? It had empowered the Insurance Committee to fix an income limit in a district, and as the Insurance Commissioners had full powers with regard to approving contracts they would have a word to say as to that. He wanted to give one word of warning—the fixing of a national income limit was impossible. Take the mining districts. Suppose an income limit of £2 was fixed, and they said that no miner earning over that should be treated on contract terms. That was a departure from the existing system and they could not work it. This year a miner might be earning under and next year over £2. On the other hand, they had a district where very few workmen earned anything like £2 a week. What happened if a man was outside the income limit? Was he to be left without any doctoring at all? Special provision was made for him, and that led up to the doctors' third point, that in some districts there was no contract practice—that the doctors vowed they would not submit to it. Under the Act they need have none. What happened? The money which was set aside for doctoring would be paid into a general pool in that area. The doctors would attend to their patients on exactly the same terms as of old, and would send in their bills as against that general pool. If there was a balance the workman would have to pay it. Of course, the local medical men must form some kind of committee to prevent any unfair charge upon the funds by one of their number. No doctor was forced by the Act to take contract practice; no patient was forced to take a doctor on contract unless he wished to. Every doctor who had a contract practice and wished to carry it on would get 50 per cent. more from his patients.

That was the position, and what were the doctors doing? He had no word to say against the British Medical Association, which represented the general practitioners of the country. The Association passed a resolution the other day that it did not see its way to meet the Commissioners until it had first of all had a meeting of the Council. The Association had been criticised a good deal by its own supporters, and it was naturally afraid to commit itself until it had a new meeting of the Council and heard what the doctors of the country wished it to do. Therefore the Association excused itself when an invitation was sent to them by Mr. Masterman. He was not complaining of that; he did not think the action of the Association was unreasonable. But he did not think that quite applied to the Royal Colleges of Surgeons and Physicians, who sent a curt, undignified, discourteous refusal to meet a Government department to discuss matters affecting the profession which they officially represented. These Colleges were formed under a charter, under an Act of Parliament, and when they refused an invitation of a Government department to discuss matters affecting the body they had been called into existence to represent, it was an example of rude ineptitude which was utterly without parallel in the history of the country. There was not a strike committee in the land which would have demeaned itself in that way. The Colleges said the Act was unworkable; the finance was inadequate; it was no use discussing it. That was the very reason why they should discuss it. Why did they not come and point out where the measure was inadequate? Why did they not come there like men and show where the deficiency arose? Why didn't they, if they knew, point out where the Act could be amended? The Commissioners were there to listen to all kinds of suggestions, but to refuse to appear there was behaviour of so extraordinary a character that it showed the societies absolutely unfit for the position which they assumed. For the future negotiations would be conducted with societies that really were prepared to discuss solemn and important matters like business men and were prepared to treat Government departments without regard to their political complexion.

The doctors said, "It is perfectly true you have all these conditions to protect us, all these safeguards; but the finance of the Bill is too limited, it is too insufficient, and there is no scope for negotiations." He had two answers for that. Doctors who were already engaged in contract practice could get 50 per cent. more than they were getting now; doctors who were not engaged in contract practice need not take it for the future. The only thing that would happen to them would be they would charge exactly what they were charging now and would send their bills in as now. The only thing was, there would be a fund to help their patients pay the bills. Surely they did not object to that? He wished there was a body like that to pay lawyers' bills. If all the doctors of the kingdom contemplated dropping their present methods of private practice and entering into contract arrangements with their patients, they might say the finance was inadequate. The question was open to argument, and the Government would listen to the doctors. All they had to do was to demonstrate to the satisfaction of the Commissioners that the finance provided was unsatisfactory. The Commissioners would give every consideration put before them impartial and careful attention, and if the Commissioners were satisfied that the case was made out, on their recommendation it would be the duty of the Government to advise Parliament to find all money necessary to provide a satisfactory medical service for the insured people of the country. But merely to send stiff and discourteous letters declining to discuss with a Government department the best methods of dealing with the question would meet with the reprobation of every business man. The Government was prepared to listen to every fair suggestion—not wild and extravagant demands; one gentleman who represented a certain section sent in a bill for an additional three millions. It was not bringing the demand within proportions that were debatable. Any fair proposal they would consider.

What would happen if the profession followed the advice of its extremists and declined to discuss terms, refused to administer the Act, to recognise committees set up by a statute of the realm, if they defied the law of the land, and said they would have nothing to do with it—

what twould happen? Nothing! Except this—all the safeguards inserted in the Act for the protection of the medical profession would be wiped out at once. It was assumed by those critics of the Act who had been stirring up the doctors to do foolish things that the moment they refused to what they called "work the Act," that it was as dead as Queen Anne The Act would be as alive as ever, but the safeguards for the protection of the profession would be dead. One of the troubles they suffered from was that there were men trying to work various parts of the Act without ever reading it, and those who advised the profession to take that extravagant course could never have read it. Did they really think the Government was so simple that it had not provided for a contingency of that sort? Did they look like it? They had just overlooked one little provision of the Act—that the Government had large "suspensory powers." What did that mean? (A voice: "Hang the doctors!") It might serve, Mr. Lloyd George retorted, to hang those who gave the doctors bad advice. Did the use of the suspensory powers mean that the benefits of the Act would come to an end? The 10*s.* a week, the 5*s.* a week, the consumptive benefit, the maternity and medical benefits would all go on. The insured persons would not be deprived of benefits. What would happen? The money allocated for medical benefit would be handed over to the insured persons through their societies. The doctors who had been compassing sea and land to get away from the Friendly Societies would suddenly find themselves face to face with them once more, and through their own action! There would be no Local Insurance Committee to arrange terms, no committee upon which the doctors were represented, the Societies would not be compelled to consult the Local Medical Committee, there would be no appeal to the Commissioners. All that would be suspended. How would a strike avail under those conditions? Would the local doctors send word to the committee on which their own patients were represented that they declined to meet them, that they would not discuss terms with them? It must be remembered it would not be Friendly Societies merely, but trades unions, industrial insurance companies, which would be dealing with money handed over to them bodily to treat with the doctors. Take the man who had a contract practice—the doctor for the local Oddfellows or Foresters—what would he do? He had worked up a practice laboriously, he had got hold of the heads of the family and had got the rest of the family through them. Was he going to say to the Oddfellows or Foresters, "I am going to throw up my practice"? Was he going to throw up the work of years and allow other doctors to scramble for his practice, and scramble with them under this disadvantage—that he would have quarrelled with his patients? Take the case of a man who was attending a works staff. Was he going to say, "Where do you get your money from? Is it true that there is a subsidy from the Insurance Fund?" The reply would be, "Yes, of course there is." "Well, then," the doctor would reply, "no more works staff for me! I won't touch it if it savours of National Insurance; they can take the unclean thing away." So the doctor would throw up his practice. Could they not see him doing it? If they did not, all the pledges in the world would be of no use to them.

He would utter two warnings. There were such things as medical institutes and dispensaries—about 70 or 80 were already established—where men were engaged on a whole-time service, and those institutions were spreading. If they wanted to encourage them, get up a doctors' strike; that was the way to help them along. They were being run now at 4*s.* a head; under the Act it would be 6*s.*, and if the doctors refused to work the Act the working classes could not be without medical attendance, so medical institutes and dispensaries would swarm in the land. His second warning was this: It was with great difficulty that the Government succeeded in getting the safeguards in the Act. Friendly Society men present would know that the Government came pretty near a quarrel with the societies in order to protect the doctors. The Friendly Societies resented the safeguards as showing want of confidence in them. If the doctors threw over those safeguards, and if the old relations ensued, let them not forget the Government found the position difficult when facing societies with four or five million members. There would be 14 million members in the future. Would any Government face the risk of resuming those safeguards in the teeth of 14 million people, after the experience this Government had had with the doctors? If these people who were "egging" the doctors on—he did not say their leaders, they were generally persons outside, busybodies meddling for purely political purposes, who would not have done it unless they thought they could break down the Act by doing it—if these people succeeded, did they really think they would be able to make the Act unpopular? Quite the reverse. What was unpopular was taking these powers from Friendly Societies. There was nothing they wanted more than to have their powers restored and to have freedom of action. If as a result of a refusal to work the Act the insurance funds were handed over to the societies to deal with as they pleased, it would be hailed with joy by all the Friendly Societies.

He still believed the arrangements of the Act were the best, and he was prepared to work patiently through the temporary unpopularity associated even with the safeguards he had referred to, because he thought they were the best for the medical profession, and best for the working classes in the long run; but if impulsive, misinformed men lured on the medical profession for political reasons, let its members not send the bill to the Government, but to the men who had enticed them to their destruction.

PARLIAMENTARY INTELLIGENCE.

PARLIAMENT assembled on Feb. 14th. The first few days of the session in the House of Commons will be devoted to the debate on the Address, and it is expected that allusions will be made to the attitude of the medical profession on the Insurance Act. Indeed, on the opening day Mr. BONAR LAW, the Leader of the Opposition, made a reference to the "threats" of the Chancellor of the Exchequer. Attention was also drawn in the King's Speech to the International Opium Convention, the gist of which is contained in an article on p. 441 of this issue of THE LANCET.

Medical News.

FOREIGN UNIVERSITY INTELLIGENCE.—*Berlin:* Dr. Uhtoff, of Breslau, Dr. Hess, of Würzburg, and Dr. Axenfeld, of Freiburg, have all declined the chair of Ophthalmology in succession to Professor von Michel.—*Dijon:* Dr. Petitjean has been appointed Professor of Pathology in succession to Dr. Misset.—*Düsseldorf* (*Academy of Practical Medicine*): Dr. August Hoffmann, professor of medicine, and Dr. Arthur Schlossmann, professor of pædiatry, have been appointed Secretaries to the Academy.—*Göttingen:* Dr. A. Kantorowicz has been recognised as *privat-docent* of Odontology.—*Iurieff* (*Dorpat*): Dr. O. Rothberg has been recognised as *privat-docent* of Medicine.—*Königsberg:* Dr. Wilhelm Meisner has been recognised as *privat-docent* of Ophthalmology.—*Saratoff:* Dr. Bogolinboff, of Kazan, has been appointed Professor of Surgery.—*Vienna:* It is expected that the chair of Medicine now held by Dr. C. von Noorden will shortly be vacated, as the professor is going to take up his residence in Frankfort, where he will have the direction of a special clinic for diabetes which is now being erected.—*Würzburg:* Dr. Eugen Fischer, of Freiburg, has been offered the post of First Assistant in the Anatomical Institute.

WEST LONDON MEDICO-CHIRURGICAL SOCIETY.—The annual dinner of this society was held at the Hotel Great Central on Feb. 8th, under the chairmanship of Mr. W. McAdam Eccles, the President. There was a good attendance of members and guests, and a most enjoyable evening was spent. After the loyal toasts had been honoured, Mr. J. G. Pardoe proposed the health of the Imperial Forces, and referred in eloquent terms to the debt owed by civilians to the defensive services of the Empire. This toast was responded to by Sir James Porter, Medical Director-General of the Navy, and Sir W. Launcelot Gubbins, Director-General of the Army Medical Service, who were both warmly received. At the invitation of the chairman Sir Philip Magnus, M.P., spoke a few words on the relations of the medical profession to the National Insurance Act. He said that the present public discussion of the medical aspects of the measure should have taken place long ago, before ever the Bill was introduced. If the profession had shown at an earlier stage the determination which it now showed the six cardinal points would have been incorporated in the Act. The £2 income-limit should have been insisted upon as the foremost demand of the profession, because it was essential that the area of contract practice should be limited. The profession must hold together and present a united front; it still held the fate of the scheme in its hands. Launching the Insurance Act without the doctors was like advertising the production of *Hamlet* without securing a performer for the central figure. It was not at all certain whether the Commissioners had the power to satisfy medical requirements, but the first duty of the profession was to ascertain whether this could be done. Medical men ought to coöperate in bringing the Act into operation, provided that their just terms could be secured. The health of the society was proposed by the chairman, who said that during the 30 years of its existence it had steadily grown in size and importance. Mr. Eccles referred to the value to the society of its close connexion with the West London Hospital and the Post-Graduate School. It now had 600 members, a flourishing journal, and an excellent programme of meetings. He announced that the Cavendish lecturer for the year was Professor Karl Pearson. He said that the society brought them all together at a cost per annum of 1*s.* less than they would receive for each person under the Insurance Act. Upon that matter, in spite of the insinuations of certain sections of the press, the general practitioner and the much-abused practitioner of Harley-street were at one. Mr. F. Lawrence, the senior member of the society and its president in 1884, in his reply traced the history of the society and its annual dinner from their small beginning in the early "eighties." Dr. S. D. Clippingdale, in a short humorous speech, welcomed the guests, including the representatives of kindred medical societies. Sir Henry Morris, President of the Royal Society of Medicine, was prevented by illness from attending and responding to this toast, but Dr. J. Mitchell Bruce,

President of the Medical Society of London, who replied jointly with Mr. Whitaker Thompson, Mayor of Kensington, and Dr. J. A. Macdonald, chairman of Council of the British Medical Association, regretted that the interest of the members of the Royal Society of Medicine was in some ways too sectional. This was shown in part by the poor response to the appeal for funds towards the new buildings shortly to be opened. Dr. Mitchell Bruce congratulated the West London Medico-Chirurgical Society on its firm hold upon the general practitioner, who alone could solve many of the most important questions in etiology and therapeutics; under the Insurance Act the general practitioner's opportunities in this direction would be curtailed, and his prospects of scientific advancement would be almost hopeless. The last item on the programme was the toast of "The Chairman," which was proposed by Professor Howard Marsh, Master of Downing College, in a few happy words. During the evening Mr. Watkin Mills and Miss Maguire gave some charming songs.

VACCINATION OFFICERS AND THEIR FEES.—The Wandsworth board of guardians at its meeting on Feb. 8th considered a letter from the vaccination officers drawing attention to the financial loss sustained by them in consequence of the working of the Vaccination Act and the Local Government Board Order, 1907. They asked the board either to increase their fees or grant them salaries, and also to make them gratuities for losses in past years. From a return presented to the board it appeared that in the Battersea district the average amount received in fees from 1903–07 was £219 6*s.* 2*d.*, average exemptions, 139; and in 1908–11 average fees £180 0*s.* 1*d.*, average exemptions, 616. Wandsworth district, 1903–07, average fees £104 3*s.* 3*d.*, average exemptions, 49; in 1908–11 average fees £98 4*s.* 7*d.*, average exemptions, 254. Putney district, 1903–07, average fees, £28 2*s.* 8*d.*, average exemptions, 121; 1908–11, average fees, £28 8*s.* 10*d.*, average exemptions, 47. No details were available for the Clapham district, but the remuneration in 1911 was £47. In the Streatham district, where the officer had resigned, the payment in 1911 was £99 15*s.* 1*d.*, but it was estimated that the fees would produce about £120 a year. The finance committee, who had considered the letter, stated that it appeared desirable that the vaccination officers should in future be paid by salary, and recommended that the stipend for Battersea should be £200 a year; Wandsworth and Clapham, £150; Streatham, £120; and Putney, £30. Lieutenant Sanders, R.N., in moving that the report be referred back, said that it was most extraordinary that in Wandsworth, where they had an increase in the population of 50,000, there should be a decrease in the vaccination fees. He did not object to the officers being paid salaries, but he objected to the suggestion made by the committee that the working of Mr. John Burns's Order was responsible for a diminished birth-rate. Mr. J. R. Archer seconded. Mr. G. B. Muter said that as the work was less the fees diminished, and consequently in striking at an average this should have been taken into account. He thought the salaries suggested were too excessive. If the board decided to grant the officers salaries there would not be the same inducement for them to press parents to get their children vaccinated. Mr. Archer: All the better for the children. Mr. P. Rees, the vice-chairman, said that the more exemptions the officers got the more work they got. Mrs. Cassidy, while inclined to pay the officers a salary, said that she was not agreeable to give them the large amounts proposed. If a ratepayer's business stopped he would not be expected to be relieved from the rates. The chairman (Canon Curtis) said that the finance committee went very carefully into this matter and the letter of the vaccination officers, along with the figures supplied. Through no fault of their own the salaries of these officers had decreased, and were likely further to decrease. They were engaged with the idea that they would have something approaching a fixed income, but that was now impossible. The committee thought that the best thing was to pay them a salary. In the case of Battersea the average fees received for the five years 1903–07 was over £200, and considering the decrease in the second period, they suggested £200 as a fair annual stipend. If the board were to pay these officers he thought they should be paid well. Mr. J. Wingfield said that as an antivaccinator he was glad to see that they were abolishing the pernicious system of payment by results. The board, by 17 votes to 4, adopted the committee's recommendation to pay the officers salaries, subject to the approval of the Local Government Board.

THE Cheshire county council has decided to advance the salary of its medical officer of health, Dr. Meredith Young, from £750 to £850 per annum, as from April 1st, and to follow this by three annual increments of £50 to a maximum of £1000.

UNIVERSITY OF CAMBRIDGE.—Dr. Jamieson B. Hurry (St. John's) has endowed a research studentship in physiology of the value of £100, tenable for one year and available every two years. It is suggested that the holder of the studentship shall be called the "Michael Foster research student," and the council has recommended that the first election shall be made in 1913.

CONGRESS OF PHYSIOTHERAPY, PARIS.—The Fourth Congress of Physiotherapy of French-speaking Physicians will be held at Paris on April 9th, 10th, and 11th. The subjects for discussion will be the following: Physical Agents in Chronic Rheumatism; Physical Agents in Obesity; and Physical Agents in Exophthalmic Goitre. The subjects of Acne, Angioma and Nævi, which have been withdrawn in view of the Congress of Dermatology to be held in Rome, will, nevertheless, receive a certain amount of attention. This Congress is organised by the delegates of the French Society of Electrotherapy and Radiology, the Society of Kinesitherapy, and the Society of Radiology of Paris. The President is M. le Professeur Bergonié (of the Société Française d'Electrothérapie), the treasurer is Dr. L. Delherm (2, rue de la Bienfaisance, Paris), and the secretary-general is Dr. A. Laquerrière of the same address. The subscriptions payable are 15 francs each for active members, the same amount for "membres adhérents" who do not take an active part, and 10 francs each for the wives or children of the members of the Congress.

UNIVERSITY OF LONDON.—University medals have been awarded on the results of the M.D. examination for internal and external students, December, 1911, as follows:—Branch I. (Medicine), Mr. Norman Claudius Lake, B.S., B.Sc. (Charing Cross Hospital); Branch IV. (Midwifery and Diseases of Women) Mr. William Henry Miller, B.S. (Guy's Hospital); Branch VI. (Tropical Medicine), Mr. Hugh Stannus Stannus (St. Thomas's Hospital and London School of Tropical Medicine). Dr. H. L. Eason has been appointed a member of the council for external students for the remainder of the period 1911–12 in place of Dr. Leonard Hill, resigned. Regulations have been adopted for the administration of the Medical Research Fund for which provision was made in the will of the late Dr. Charles Graham. The income of the fund, which will amount to about £1250 a year, will be devoted to aiding research in the School of Advanced Medical Studies connected with University College Hospital. A director of research will be appointed at a salary not exceeding £400 a year; there will be a scholarship in pathology of the value of £200 a year, tenable for two years; and provision is also made for the award of a gold medal for pathological research, for making grants to workers in the aboratories, and for defraying the expenditure on apparatus.

CHICHESTER INFIRMARY.—A year of satisfactory progress was reported at the annual meeting on Feb. 8th of the governors of Chichester Infirmary—in fact, for the first time for many years the income exceeded the expenditure by the sum of £72 5*s.* 1*d.* For the first time, also, all legacies received during the year, a matter of £311, instead of being placed to the general account and expended, had been placed to the reserve fund. The annual subscriptions rose during the year from £1194 to £1470, and the collections in boxes (470) from £66 to £267, an increase on the latter of no less a sum than £201. The fear lest curtailment of the work of the institution would follow if further subscriptions were not forthcoming has had effect, and the increased box collection shows how the institution is appreciated by those who must derive the greatest benefit from it. The number of in-patients during the year was 704 and of out-patients 2155, the latter being the largest number on record; while the number of major operations reached 506. The percentage of mortality was low, being 4 1 per cent. of the numbers treated, and, exclusive of patients admitted in a hopeless condition or dying within the 24 hours, 3·04 per cent., and of

those succumbing after operations 1·18 per cent. Regret was expressed that greater progress had not been made with the King Edward VII. reconstruction scheme, but the sum to be expended was large, and the difficulty of adapting an old building to the present stringent modern requirements great, so that the governors were determined to take time that they might obtain the best results. The financial position of the institution had improved, and the governors saw no reason why it should not continue to improve with an up-to-date building and the continued goodwill of the district, but there were still clouds which obscured the horizon—the National Insurance Act, the results of which none could foretell, and the debt on the general account. The governors paid a high compliment to the medical and nursing staffs.

BOOKS, ETC., RECEIVED.

ARNOLD, EDWARD, London. LONGMANS, GREEN, AND CO., New York.

International Medical Monographs. General Editors: Leonard Hill, M.B., F.R.S., and W. Bulloch, M.D. Blood-Vessel Surgery and its Applications. By Charles Claude Guthrie, M.D., Ph.D., Professor of Physiology and Pharmacology, University of Pittsburgh. Price 14*s.* net.

Modern Theories of Diet and their Bearing upon Practical Dietetics. By Alexander Bryce, M.D., D.P.H. Camb., Author of "The Laws of Life and Health," &c. Price 7*s.* 6*d.* net.

Practical Anatomy. The Student's Dissecting Manual. By F. G. Parsons, F.R.C.S. Eng., Lecturer on Anatomy at St. Thomas's Hospital and at the London School of Medicine for Women; and William Wright, M.B., D.Sc., F.R.C.S. Eng., Lecturer on Anatomy at the London Hospital. In Two Volumes. Vol. I.: The Head and Neck; the Lower Extremity. Vol. II.: The Thorax; Abdomen: Pelvis; Upper Extremity. Price 17*s.* net (Two Vols.)

BAILLIÈRE, TINDALL, AND COX, London.

The Prevention of Dental Caries and Oral Sepsis. Being the Cartwright Prize Essay of the Royal College of Surgeons of England for 1906–1910, with Some Additions. By H. P. Pickerill, M.D., Ch.B., M.D.S. Birm., L.D.S. Eng., Professor of Dentistry and Director of the Dental School in the University of Otago. Price 7*s.* 6*d* net.

DULAU AND CO., LIMITED, 37, Soho-square, London, W.

niversity of London. Francis Galton Laboratory for National Eugenics. Eugenics Laboratory Memoirs. XV. Treasury of Human Inheritance. Parts VII. and VIII. Section XV. A. Dwarfism. By H. Rischbieth, M.A., M.D. Cantab., F.R.C.S. Eng., and Amy Barrington, Eugenics Laboratory. With 8 Plates of Pedigrees and 35 Plates of Illustrations. Plates LI.–LVIII. Plates O–Z, AA–WW. Pedigrees, Figs. 608–841. Price 15*s.* net.

Appointments.

Successful applicants for Vacancies, Secretaries of Public Institutions, and others possessing information suitable for this column, are invited to forward to THE LANCET *Office, directed to the Sub-Editor, not later than 9 o'clock on the Thursday morning of each week, such information for gratuitous publication.*

ADDISON, W. B., M.B., B.S. Cantab., has been appointed Certifying Surgeon under the Factory and Workshop Acts for the St. Mary's (Scilly Isles) District of the county of Cornwall.

ALLNUTT, E. B., M.R.C.S., L.R.C.P. Lond., has been appointed Assistant House Surgeon at the West London Hospital.

ANDERSON, C. V., M.R.C.S., L.R.C.P. Lond., has been appointed Casualty Officer and Resident Anæsthetist at St. Thomas's Hospital.

BAZETT, H. C., M.B., B.Ch. Oxon., F.R.C.S. Eng., has been appointed Casualty Officer and Resident Anæsthetist at St. Thomas's Hospital.

BEADLES, J. N., M.B., B.S. Lond., has been appointed Certifying Surgeon under the Factory and Workshop Acts for the Cinderford District of the county of Gloucester.

BIRLEY, J. L., M.R.C.S., L.R.C.P. Lond., has been appointed Casualty Officer and Resident Anæsthetist at St. Thomas's Hospital.

BRANDON, G. N., M.R.C.S., L.R.C.P. Lond., has been appointed Resident House Surgeon at St. Thomas's Hospital.

BYRNE, J. A., L.M.S.S.A. Lond., has been appointed Certifying Surgeon under the Factory and Workshop Acts for the Youlgreave District of the county of Derby.

CHAVASSE, A. R., M.B., B.Ch. Oxon., M.R.C.S., L.R.C.P. Lond., has been appointed Resident House Physician at St. Thomas's Hospital.

EGAN, JOHN PATRICK, L.R.C.P. & S. Irel., L.M., has been appointed Assistant House Surgeon at the Taunton and Somerset Hospital.

FRY, H. J. B., M.B., B.Ch. Oxon., M.R.C.S., L.R.C.P. Lond., has been appointed Resident House Physician at St. Thomas's Hospital.

GARDNER, A. D., M.B., B.Ch. Oxon., M.R.C.S., L.R.C.P. Lond., has been appointed Casualty Officer and Resident Anæsthetist at St. Thomas's Hospital.

GRAINGER, J. P., L.R.C.P. & S. Irel., L.M., has been appointed Junior House Surgeon at the Croydon General Hospital.

HAMILTON, A. K., M.R.C.S., L.R.C.P. Lond., has been appointed House Surgeon at St. Thomas's Hospital.

HIGGINS, A. G., M.R.C.S., L.R.C.P. Lond., has been appointed Certifying Surgeon under the Factory and Workshop Acts for the Newent District of the county of Gloucester.

HUGHES, PERCY T., M.B., C.M. Edin., D.P.H., has been appointed Lecturer on Mental Diseases at the University of Birmingham.

HUMPHRYS, F. J., M.R.C.S., L.R.C.P. Lond., has been appointed Clinical Assistant to the Skin Department at St. Thomas's Hospital.

JOHNSON, A. C., B.C. Cantab., M.R.C.S., L.R.C.P. Lond., has been appointed Resident House Physician at St. Thomas's Hospital.

JONES, ERNEST LLOYD, M.D. Cantab., has been appointed Demonstrator in Medicine at the University of Cambridge.

LAIRD, W. B., M.R.C.S., L.R.C.P. Lond., has been appointed Casualty Officer and Resident Anæsthetist at St. Thomas's Hospital.

LAUDERDALE, E. M., M.R.C.S., L.R.C.P. Lond., has been appointed Senior Obstetric House Physician at St. Thomas's Hospital.

LOCK, N. F., B.A. Cantab., M.R.C.S., L.R.C.P. Lond., has been appointed Casualty Officer and Resident Anæsthetist at St. Thomas's Hospital.

MARSDEN, W. G., M.B., B.C. Cantab., M.R.C.S., L.R.C.P. Lond., has been appointed Resident House Surgeon at St. Thomas's Hospital.

MASSON, CHARLES ARMIT, M.B., Ch.B. Aberd., has been appointed Assistant Medical Officer at Coton Hill Hospital, Stafford.

MITCHINER, P. H., M.R.C.S., L.R.C.P. Lond., has been appointed Clinical Assistant to the Children's Surgical Department and to the Throat Department at St. Thomas's Hospital.

OAKDEN, W. M., M.R.C.S., L.R.C.P. Lond., has been appointed Resident House Surgeon at St. Thomas's Hospital.

PINTO-LEITE, HUBERT, M.R.C.S., L.R.C.P. Lond., has been appointed Second Anæsthetist to the Evelina Hospital for Children.

PONTON, JOHN ALFRED WILLIAM, M.B., B.Ch., B.A.O. Dub., has been appointed Medical Officer to the Ottery St. Mary (Devon) Cottage Hospital.

RIXON, C. H. L., M.R.C.S., L.R.C.P. Lond., has been appointed Casualty Assistant at St. Thomas's Hospital.

ROSS, W. D., M.R.C.S., L.R.C.P. Lond., has been appointed Resident House Physician at St. Thomas's Hospital.

ROUQUETTE, S. H., M.R.C.S., L.R.C.P. Lond., has been appointed Resident House Surgeon at St. Thomas's Hospital.

SALMOND, R. W. A., Ch.M., M.D. Aberd., D.P.H., has been appointed Surgeon-in-Charge of the X Ray Department at St. Mary's Hospital for Women and Children, Plaistow.

SKRIMSHIRE, F. R. B., M.R.C.S., L.R.C.P. Lond., has been appointed Ophthalmic House Surgeon at St. Thomas's Hospital.

SMITH, F. BATTINSON, M.R.C.S., L.R.C.P., has been appointed House Physician at the Warneford, Leamington, and South Warwickshire General Hospital, Leamington Spa.

TAYLOR, J. F., M.R.C.S., L.R.C.P. Lond., has been appointed Junior Obstetric House Physician at St. Thomas's Hospital.

TREHERNE, C. W., M.R.C.S., L.R.C.P. Lond., has been appointed Clinical Assistant to the Children's Medical Department at St. Thomas's Hospital.

VESSELOVSKY, V. C., M.R.C.S., L.R.C.P. Lond., has been appointed Casualty Assistant at St. Thomas's Hospital.

WATSON, GEORGE W., M.D. Lond., M.R.C.P. Lond., M.R.C.S., has been appointed Honorary Physician to the Leeds Association for the Prevention and Cure of Tuberculosis.

WEDGWOOD, W. B., M.R.C.S., L.R.C.P. Lond., has been appointed Certifying Surgeon under the Factory and Workshop Acts for the King's Lynn (No. 2) District of the county of Norfolk.

WHORLOW, C. G., M.R.C.S., L.R.C.P. Lond., has been appointed Clinical Assistant to the Ear Department and to the Throat Department at St. Thomas's Hospital.

WIGMORE, J. B. A., M.R.C.S., L.R.C.P. Lond., has been appointed Clinical Assistant to the Children's Medical Department at St. Thomas's Hospital.

Vacancies.

For urther information regarding each vacancy reference should be made to the advertisement (see Index).

BANBURY, HORTON INFIRMARY.—House Surgeon. Salary £80 per annum, with board and residence.

BARROW-IN-FURNESS, NORTH LONSDALE HOSPITAL.—House Surgeon. Salary £100 per annum, with board and lodging.

BARRY URBAN DISTRICT COUNCIL.—School Medical Officer. Salary £400 per annum.

BIRMINGHAM AND MIDLAND EYE HOSPITAL.—Resident Surgical Officer. Salary £100 per annum, with apartments, board, and attendance.

BIRMINGHAM AND MIDLAND HOSPITAL FOR SKIN AND URINARY DISEASES.—Clinical Assistant. Salary at rate of 52 guineas per annum.

BIRMINGHAM UNIVERSITY.—Lecturer in Physiology. Salary £150 per annum.

BOMBAY, BARODA, AND CENTRAL INDIA RAILWAY.—Two Medical Officers. Salary Rs.500 per calendar month.

BRADFORD HOSPITAL AND WORKHOUSE.—Assistant Resident Medical Officer (female). Salary £130 per annum, with rations, apartments, and washing.

BRISTOL GENERAL HOSPITAL.—Senior House Surgeon. Salary £120 per annum, with board, residence, &c.

CAMBRIDGE, ADDENBROOKE'S HOSPITAL.—Second House Surgeon. Salary £80 per annum, with board, residence, and laundry.

CHARING CROSS HOSPITAL.—Physician.

CHARING CROSS HOSPITAL MEDICAL SCHOOL.—Lectureship in Hygiene and Public Health.

DERBY COUNTY ASYLUM, Mickleover.—Junior Assistant Medical Officer. Salary £120 per annum, with apartments, board, washing, and attendance.

DEWSBURY AND DISTRICT GENERAL INFIRMARY.—House Surgeon. Salary £120 per annum, with board, residence, and washing.

DUMFRIES AND GALLOWAY ROYAL INFIRMARY.—Assistant House Surgeon. Salary £55 per annum, with board and washing.

DUNDEE ROYAL INFIRMARY.—Non-resident Obstetric Assistant.

EVELINA HOSPITAL FOR SICK CHILDREN, Southwark, London, S.E.—House Physician for six months. Salary at rate of £75 per annum, with board, residence, and washing.

EXMINSTER, DEVON COUNTY ASYLUM.—Fourth Assistant Medical Officer. Salary £130 per annum.

HAMPSTEAD GENERAL AND NORTH-WEST LONDON HOSPITAL.—House Physician and House Surgeon, each for six months. Salaries at rate of £70 per annum, with board and residence.

HOSPITAL FOR SICK CHILDREN, Great Ormond-street, W.C.—Clinical Pathologist and Bacteriologist. Salary £200 per annum.

HOSPITAL FOR WOMEN, Soho-square, W.—Resident Medical Officer for six months. Salary at rate of £60 per annum.

INFANTS HOSPITAL, Vincent-square, Westminster.—Assistant Physician.

LARBERT, STIRLING DISTRICT ASYLUM.—Junior Assistant Medical Officer. Salary £130 per annum, with board, &c.

LEEDS GENERAL INFIRMARY.—Medical Tutor. Salary £125 per annum. Also Medical Registrar. Salary £25 per annum.

LIVERPOOL, DAVID LEWIS NORTHERN HOSPITAL.—Two House Physicians and Three House Surgeons, all for six months. Salaries at rate of £60 per annum, with residence and maintenance.

LIVERPOOL, ROYAL SOUTHERN HOSPITAL.—Two House Physicians and Three House Surgeons, all for six months. Salary at rate of £60 per annum, with board and residence.

MACCLESFIELD GENERAL INFIRMARY.—Junior House Surgeon. Salary £60 per annum, with board and residence.

MANCHESTER, ST. MARY'S HOSPITALS FOR WOMEN AND CHILDREN.—Two House Surgeons. Salary at rate of £50 per annum, with board and residence.

NEWCASTLE-UPON-TYNE UNION INFIRMARY AND WORKHOUSE.—Medical Superintendent. Salary at rate of £450 per annum.

NEW HOSPITAL FOR WOMEN.—Female Senior Assistants.

NOTTINGHAM GENERAL DISPENSARY.—Assistant Resident Surgeon, unmarried. Salary £160 per annum, with apartments, attendance, light, and fuel.

OXFORD, RADCLIFFE INFIRMARY AND COUNTY HOSPITAL.—House Surgeon and Casualty House Surgeon, unmarried, each for six months. Salaries at rate of £80 per annum, with board, &c.

ROYAL NAVAL MEDICAL SERVICE.—Fifteen Appointments.

RYDE, ROYAL ISLE OF WIGHT COUNTY HOSPITAL.—Resident House Surgeon, unmarried. Salary £100 per annum.

SALFORD ROYAL HOSPITAL.—Casualty House Surgeon. Salary at rate of £50 per annum, with board and residence.

SHEFFIELD UNIVERSITY.—Demonstrator in Experimental Physiology and Pharmacology. Salary £200 per annum.

SHREWSBURY, SALOP INFIRMARY (COUNTY HOSPITAL).—House Physician Salary at rate of £70 per annum, with board and apartments.

SOUTHAMPTON, ROYAL SOUTH HANTS AND SOUTHAMPTON HOSPITAL.—Junior House Surgeon for six months. Salary at rate of £60 per annum, with rooms, board, and washing.

STOCKWELL TRAINING COLLEGE, Stockwell-road, S.W.—Medical Officer.

STOKE-ON-TRENT, NORTH STAFFORDSHIRE INFIRMARY, Hartshill.—House Surgeon. Salary £100 per annum, with apartments, board, and washing.

WEST AFRICAN MEDICAL STAFF.—Number of Appointments. Salary £400 per annum.

WESTERN GENERAL DISPENSARY, Marylebone-road, N.W.—Honorary Physician.

WEST LONDON HOSPITAL, Hammersmith-road, W.—Two House Physicians and Three House Surgeons for six months. Board, lodging, and laundry provided.

WEST RIDING OF YORKSHIRE COUNTY COUNCIL, Wakefield.—Medical Inspector. Salary £300 per annum.

WINCHESTER, ROYAL HAMPSHIRE COUNTY HOSPITAL.—House Surgeon. Salary £80 per annum.

WINDSOR, KING EDWARD VII HOSPITAL FOR WINDSOR, ETON, AND DISTRICT.—Senior House Surgeon. Salary £80 per annum, with residence, board, laundry, and attendance.

WINWICK, LANCASHIRE COUNTY ASYLUM, Warrington.—Assistant Medical Officer, unmarried. Salary £150 per annum, with board, apartments, and washing.

WOLVERHAMPTON AND STAFFORDSHIRE GENERAL HOSPITAL.—Resident Medical Officer. Salary at rate of £100 per annum, with board, rooms, and laundry.

THE Chief Inspector of Factories, Home Office, London, S.W., gives notice of vacancies as Certifying Surgeons under the Factory and Workshop Act at Castletown, in the county of Caithness; and at Lutterworth, in the county of Leicester.

Births, Marriages, and Deaths.

BIRTHS.

PEACOCK.—On Feb. 6th, at Penlu House, Craven Arms, Salop, the wife of W. H. Peacock, M.B., B.S., West African Medical Staff, of a daughter.

SWAN.—On Feb. 11th, at Wimpole-street, the wife of R. H. Jocelyn Swan, M.S. Lond., F.R.C.S., of a daughter.

MARRIAGES.

HORTON—BLACK.—On Feb. 10th, William Claude Horton, M.B., F.R.C.S., to Violet Muriel, younger daughter of the late William Black (Author) and Mrs. William Black, Paston House, Brighton.

WILLIAMS—POWELL.—On Feb. 10th, at Christ Church, High Harrogate, W. E. Rees Williams, Captain I.M.S., to Gertrude, second daughter of Charles A. Powell, of Oakwood Lodge, Harrogate.

DEATHS.

ALLCHIN.—On Feb. 8th, after a long illness, Sir William Henry Allchin, M.D., F.R.C.P., Physician Extraordinary to His Majesty the King, aged 65.

LISTER.—On Feb. 10th, at Walmer, the Right Hon. Lord Lister, O.M., F.R.S., in his 85th year.

N.B.—A fee of 5s. is charged for the insertion of Notices of Births, Marriages, and Deaths.

Notes, Short Comments, and Answers to Correspondents.

LORD BROUGHAM AS HIS OWN PHYSICIAN.

To the Editor of THE LANCET.

SIR,—From '50 to '58 I was resident physician in the family of the last Lord Holland, he being in a very delicate state of health. I find in my diary of '55 the subjoined extract, which may interest you and your readers. It may be considered as a successful departure from the ordinary routine by an unqualified practitioner.

I am, Sir, yours faithfully,

Worthing, Jan. 19th, 1912. I. D. CHEPMELL.

EXTRACT FROM A MEDICAL DIARY OF 1855.

A constant visitor to Holland House during June and July was Lord Brougham, who was then in somewhat indifferent health, and glad to escape for a few nights from the heat and dust of London to enjoy the comparatively fresh air and cheerful surroundings of Holland House. On one occasion he arrived late in the evening, having contracted a bad cold attended with sore-throat and loss of voice. I advised him to go to bed at once, as he seemed feverish, and prescribed some appropriate remedy. With the first part of my recommendation he complied, but with the second he would have nothing to do, saying, "Don't you know that a man at 40 is either a fool or a physician, and sometimes both?" adding sharply, "How old are you, Doctor?" I was happy to be able to assure him, on wishing him good night, that I was only 26 years old.

Towards two o'clock in the morning I was awaked by a loud rapping at my door, and on opening found Lord B. standing in his nightshirt with an empty pitcher in his hand. In voice almost unintelligible from hoarseness he announced that he wanted a can of boiling water, some carbonate of soda, and a pot of currant jelly I thought he must be delirious, but as he was not to be put off by argument I thought best to pacify him by compliance with his strange request. At that time of night, everyone being fast asleep, the desiderata were not easily obtainable. Nevertheless, I set out on a foraging expedition; I woke up the old man of the kitchen, the old woman of the still-room, and returned with my spoils to the oddest of men upstairs, Lord B.

He was quite ready with his empty washing-jug, and proceeded to empty the pot of jelly into this receptacle, adding two large tablespoonfuls of soda, and filling up the jug with boiling water: the result, a foaming mixture of blood-red colour, and worthy of Macbeth's witches, he carried off in triumph to his room. At half-past six I awoke, and with a guilty sense of having neglected my patient I went and rapped at Lord B.'s door, first gently, then loudly, and receiving no answer stealthily opened it. On the floor was the jug empty, as was also the bed. The room was in great disorder, and the window wide open. I was really alarmed, and a painful sequence of thoughts ran through my mind—delirium, suicide, inquest! with a rider of temporary insanity, and culpable neglect on the part of attendant physician! I rushed to the window, and was relieved to find no trace of such a terrible disaster.

Returning to my room I dressed hastily, and running downstairs to the library found it untenanted. The floor was strewn with torn-up papers, and on one of the writing tables lay a pile of letters ready for post, all the work of my energetic patient! From a housemaid who was dusting the apartment I learnt that Lord B. "had been up since five, and was now gone out." I met his lordship at the breakfast table shortly afterwards and found him perfectly well, his strange remedy having worked wonders.

A BROKEN NECK IN COURT.

A REMARKABLE case came before His Honor Judge Mackarness, with whom was Dr. H. Nethersole Fletcher acting as medical assessor, at Lewes county court on Feb. 6th. A carter named Weller brought a request for arbitration under the Workmen's Compensation Act. On August 3rd, 1909, a horse which he was driving was frightened by a motor-car, and Weller was thrown out of the cart and seriously injured. He was taken to hospital, where it was found he had concussion and spinal injury, and had complete paralysis of the arms, legs, and muscles. He remained in hospital for 13 weeks and received full compensation, 10*s.* a week, until July 29th last, when it was reduced to 7*s.* 6*d.* Dr. W. A. Dow, who took X ray photographs of Weller's neck on Feb. 5th, produced the negative in court; it showed a distinct injury about level with the fifth vertebra and signs of fracture and displacement. Dr. Dow expressed the opinion that any sudden movement of the neck or any exertion might result in further damage to the spinal column, with serious and speedy consequences. This opinion was supported by two other medical witnesses, but dissented from by one who had examined him in July last, and who

thought that while no doubt the man had had a very serious injury and had made a miraculous recovery, there was nothing to prevent his taking light work. He did not agree with the other medical witnesses as to the danger of a sudden movement of the neck, having regard to the fact that the accident happened two and a half years ago. His honour, after consulting the medical assessor who had examined Weller, came to the conclusion that Weller was not capable of doing any light work and that the reduction should not be made, and awarded Weller 10*s.* a week, the arrears to be paid, with costs.

THE VAGRANCY PROBLEM IN SURREY.

WHEREAS the experience of Sussex in having adopted the way-ticket and bread-station system for dealing with the vagrancy problem is that there has been a reduction of 41 per cent. in the number of casuals in six years, it is not surprising to find that Surrey is now proposing to follow the same example. A conference called by the Surrey county council was held at Kingston on Feb. 8th, at which every board of guardians in the county was represented, and it was decided to recommend the boards of guardians in that county to take steps to establish the system as soon as possible. Surrey is evidently finding some truth in the statement made by Sussex guardians that by their action they are simply driving the tramping fraternity into Surrey. But inasmuch as the main object of the scheme is to differentiate between the genuine working man in search of employment and the confirmed tramp, and at the same time to show the public that proper provision is made for feeding the casuals so that there is no reason whatever for charitable people to give to beggars calling at the doors, it will not be completely successful until the system is universal throughout the country. Surrey's action, however, shows that the movement is spreading. The system is in vogue in Berkshire and in adjacent unions in the counties of Oxford and Buckingham, and in every case the decrease in the number of tramps has been followed by a decrease of offences against the law. An article on the Sussex system appeared in THE LANCET on Nov. 18th, 1911, p. 1447.

MEDICAL LITERATURE FOR MEDICAL MISSIONARIES.

To the Editor of THE LANCET.

SIR,—You were good enough rather more than a year ago to put in THE LANCET an appeal for medical literature for doctors working in the mission field. May I ask you to tell your readers that any copies of the current numbers of THE LANCET will be gratefully received and forwarded to the missionaries by Miss B. Gambier Parry, Bacton, Wokingham, Berks.—I am, Sir, yours faithfully,

J. ANDERSON ROBERTSON, M.A., M.B.,
Secretary, Medical Missions Department, S.P.G.

15, Tufton-street, Westminster, S.W., Jan. 31st, 1912.

THE CHLOROMETER.

THE Roborat Company, Limited, of 23, Cloth Fair, Aldersgate, London, E.C., have submitted to us a simple graduated glass instrument called the chlorometer, which is designed for the estimation of the chlorides in urine in clinical practice. The test is based upon the discharge of the blood-red colour of iron sulphocyanide by silver nitrate. In the presence of chlorides silver chloride is first formed, and as soon as the chlorides have been precipitated the red colour of the sulphocyanide begins to be discharged. The process is sufficiently accurate for most clinical purposes. It is carried out as follows. In ordinary circumstances the urine is diluted a tenth. The diluted urine is then poured into the tube up to the mark U; then a mixture of iron alum solution and dilute nitric acid (normal acid answers very well) to the mark I, followed by N/10 sulphocyanide of sodium solution to the mark T. A decinormal solution of silver nitrate is next added until the blood red colour of the sulphocyanide is discharged. The reading at the top of the mixed fluids gives at once the amount of chlorine present in milligrammes per cubic centimetre of urine. As an example, we took a 1 per cent. solution of common salt as representing a normal urine. This was diluted one-tenth with distilled water. The ultimate reading on the tube after carrying out the test in the manner just described was 6·5 milligrammes per cubic centimetre of original salt solution, which gives 1·07 per cent. of common salt found as against 1 per cent. calculated.

A VEGETARIAN DIET FOR AN INFANT.

A MEDICAL MAN has asked for assistance in drawing up a vegetable dietary for the twelve months' old daughter of a patient who, having become completely relieved of his rheumatism under a vegetarian diet, is desirous of bringing up his little daughter thereon, but is properly anxious that it should include all the elements necessary to growth and development. This is a matter on which it is difficult to speak with precision and authority, but any such dietary must include adequate variety without excessive quantity; adaptation to idiosyncrasies, habits, and familial peculiarities; an adequate proportion of hard foods to promote development of jaws and teeth; a limit of four meals daily, with three as the optimum. On these principles the following is suggested:—*Breakfast:* One cup of bread-and-milk, one finger of toast, with butter, home-made apple jelly, or honey. The toast should gradually be increased and the bread and-milk decreased as the teeth develop. *Dinner:* One potato, banana, or baked apple, with rice, macaroni, or other milk pudding. As the child gets older, bean pie, mock chicken cutlets, mock fish, or mock beef rissoles are substantial substitutes for the milk puddings. Details for their preparation may be obtained from "Hints towards Diet Reform," price 2*d.* (see THE LANCET, Feb. 10th, p. 409), and "Economical Dishes for Workers," price 1*d.*, both published by the National Food Reform Association, 178, St. Stephen's House, Westminster. *Tea:* The same as breakfast. Food taken before going to bed—a practice generally to be deprecated—should consist of a small cup of vegetable soup. Speaking generally, a child between one and two years of age requires less than one-third of the total quantity of food needed by a man at moderate work (Atwater). Many authorities who are in entire sympathy with vegetarian principles in their application to adults nevertheless recognise the value of animal proteids in building up the tissues of the growing child, and there is at times undoubtedly observable a want of energy and vigour in children brought up on a too rigid vegetarian diet.

A USEFUL "TOASTER."

WE have received from Messrs. Harrods, Limited, a specimen of a "toaster" which might be quite a useful adjunct to the sick-room. It consists of a plated metal frame on four legs, supporting a thin metal sheet and a square of wire gauze, beneath which is a spirit lamp whose wick can be adjusted to give a large or small flame by rotating a handle. By placing cut bread on the gauze excellent toast can be made in a few minutes, and in summer time the toaster can be used for keeping a dish warm or for heating milk.

M. G. (Bombay).—For the last three centuries, at any rate, it has been generally felt that the ordinary processes of the law form a better protection against such outrages.

COMMUNICATIONS not noticed in our present issue will receive attention in our next.

A DIARY OF CONGRESSES.

WE shall publish this diary from time to time that our readers may have under their hands the dates of the approaching scientific Congresses. It is unnecessary to issue the lists of all these functions week by week, and we propose to make only such gatherings as will occur in the immediate future the subject of regular announcement. The following Congresses, Conferences, and Exhibitions are announced for March and April:—

March 7th–11th (Berlin).—Thirty-third Balneological Congress.
March 23rd–April 4th (London, Royal Agricultural Hall).—International Smoke Abatement Exhibition.
April 1st and 2nd (Milan).—Italian National Convention upon the Sexual Question.
" (London).—First Congress of Pure Food and Health Society of Great Britain.
" 1st–7th (Tunis).—Twenty-second Congress of French-speaking Alienists and Neurologists.
" 8th–13th (Rome).—Seventh International Congress of Dermatology and Syphilology.
" 8th–15th (Johannesburg).—Thirteenth South African Medical Congress.
" 9th–11th (Paris).—Congress of Physiotherapy for French-speaking Physicians.
" 9th (Berlin).—Eleventh Congress of the German Society for Orthopædic Surgery.
" 9th–13th (Giessen).—Congress on Study of Families, Inheritance, and Race Hygiene.
" 10th–13th (Berlin).—Forty-first Congress of the German Surgical Society.
" 14th (Berlin).—Eighth Congress of the German Röntgen Society.
" 14th–20th (Rome).—Seventh International Congress on Tuberculosis.
" 15th–18th (Wiesbaden).—Twenty-ninth German Congress for Internal Medicine.
" 21st–24th (Munich).—Twenty-sixth Meeting of the Anatomical Society.
" (London, Olympia).—Ideal Homes Exhibition.

The following journals, magazines, &c., have been received:—Ophthalmology, Archives Médecine et de Pharmacie Militaires, Annales de Gynécologie et d'Obstétrique, Monthly Cyclopædia and Medical Bulletin, Revue de Gynécologie, South African Medical Record, Archives of the Roentgen Ray, Dominion Medical Monthly, Journal of Tropical Medicine and Hygiene, Annali di Medicina Navale e Coloniale, Edinburgh Medical Journal, Tuberculosis, Review of Neurology and Psychiatry, La Clinica Castellana, Transvaal Medical Journal, Bulletin of the City of New York Lying-in Hospital, Archives Générales de Médecine, Indian Medical Gazette, Archiv für Experimentelle Pathologie und Pharmakologie, Dublin Journal of Medical Science, Sleeping Sickness Bureau Bulletin, Journal of Pathology and Bacteriology, North of England Clinical Journal, Canadian Medical Association Journal, Local Government Review, &c.

Medical Diary for the ensuing Week.

SOCIETIES.

ROYAL SOCIETY OF MEDICINE, 15, Cavendish-square, W. temporary address during building of new house).

TUESDAY.

THERAPEUTICAL AND PHARMACOLOGICAL SECTION (Hon. Secretaries—H. Charles Cameron, H. H. Dale): at 4.30 P.M.

Discussion

On the Tuberculin Treatment of Pulmonary Tuberculosis (opened by Dr. Arthur Latham).

The following will take part in the Discussion:—Dr. Nathan Raw, Dr. W. d'Este Emery, Dr. A. C. Inman, Dr. S. V. Pearson, Dr. J. W. Linnell, Dr. J. J. Perkins, Dr. W. H. Wynn, Dr. D. Lawson, Dr. Paul Mathews, Dr. G. A. Crace-Calvert.

The DISCUSSION will be continued on the following day, Wednesday, Feb. 21st, at 4.30 P.M.

PATHOLOGICAL SECTION (Hon. Secretaries—J. C. G. Ledingham, A. E. Boycott): at 8.30 P.M.

Prof. Beattie and Dr. A. J. Hall: (1) A New Method of Mounting Museum Specimens; (2) Demonstration of Specimens of Neurofibromatosis and Multiple Embolic Aneurysms of the Pulmonary Artery.

Dr. J. A. Arkwright: Variation in Colonies of *B. diphtheriæ*.

Dr. Hort and Dr. Penfold: Salvarsan Fever and its Relation to Other Types of Injection Fever.

Dr. Bayon: Animal Experiments in connexion with *B. lepræ*.

FRIDAY.

SECTION FOR THE STUDY OF DISEASE IN CHILDREN (Hon. Secretaries—T. R. Whipham, H. S. Clogg, Percy G. Lewis), at 11, Chandos-street, W.: at 4.30 P.M.

Cases:

Dr. R. Hutchison: (1) Paralysis of the Muscles of the Neck (? Anterior Poliomyelitis); (2) Hysterical Vomiting followed by Achylia and Infantilism; (3) Fibroid Lung with a Large Cavity at the Apex.

Dr. H. Thursfield: Eruption of Green Teeth in a Case of Prolonged Jaundice.

Dr. F. Langmead: Bile-stained Teeth.

Dr. James Taylor: Athetoid Movements.

Dr. L. Guthrie: Transposition of the Viscera.

Dr. T. R. Whipham: Arthritis of the Shoulder and Hip (? Tuberculous).

EPIDEMIOLOGICAL SECTION (Hon. Secretaries—W. H. Hamer, G. S. Buchanan): at 8.30 P.M.

Paper:

Dr. Reginald Dudfield: Summer Diarrhœa in 1911.

MEDICAL SOCIETY OF LONDON, 11, Chandos-street, Cavendish-square, W.

MONDAY.—9 P.M., Dr. A. E. Garrod: Glycosuria. (Lettsomian Lecture II.)

LONDON DERMATOLOGICAL SOCIETY, 49, Leicester-square, W.C.

TUESDAY.—4.30 P.M., Demonstration of Clinical Cases. Adjourned Discussion on Dr. J. L. Bunch's paper on Prurigo and Itching Diseases of the Skin.

MEDICO-LEGAL SOCIETY, 11, Chandos-street, Cavendish-square, W.

TUESDAY.—8.30 P.M., Mr. G. Jones: Defects in the Organisation of the Medical Profession.

CHELSEA CLINICAL SOCIETY, St. George's Hospital Medical School, S.W.

TUESDAY.—8.30 P.M., Dr. Hyslop: The Intercranial Mechanism in Health and Disease.

MEDICAL OFFICERS OF SCHOOLS ASSOCIATION, 11, Chandos-street, Cavendish-square, W.

THURSDAY.—4.30 P.M., General Meeting. Dr. J. G. Forbes: Pollution of Swimming Baths.

LECTURES, ADDRESSES, DEMONSTRATIONS, &c.

MEDICAL GRADUATES' COLLEGE AND POLYCLINIC, 22, Chenies-street, W.C.

MONDAY.—4 P.M., Dr. J. Galloway: Clinique (Skin). 5.15 P.M. Lecture:—Mr. P. M. Yearsley: The Nasopharynx and its Relation to other Regions.

TUESDAY.—4 P.M., Dr. J. Collier: Clinique (Medical). 5.15 P.M., Lecture:—Dr. L. Guthrie: Hysteria in Childhood.

WEDNESDAY.—4 P.M., Mr. H. J. Paterson: Clinique (Surgical). 5.15 P.M., Lecture:—Mr. W. Arbuthnot Lane: Chronic Intestinal Stasis.

THURSDAY.—4 P.M., Mr. E. Corner: Clinique (Surgical). 5.15 P.M., Lecture:—Dr. D. Drummond (Newcastle): Is it a Case for Operation? A Problem in Diagnosis.

FRIDAY.—4 P.M., Dr. S. Stephenson: Clinique (Eye).

POST-GRADUATE COLLEGE, West London Hospital, Hammersmith-road, W.

MONDAY.—10 A.M., Dr. Simson: Diseases of Women. 10.30 A.M., Surgical Registrar: Demonstration of Cases in Wards. 12 noon, Dr. Bernstein: Pathological Demonstration. 2 P.M., Medical and Surgical Clinics. X Rays. Operations. 2.30 P.M., Mr. Dunn: Diseases of the Eye. 5 P.M., Lecture:—Mr. Dunn: The Clinical Uses of Prisms.

TUESDAY.—10 A.M., Dr. Robinson: Gynæcological Operations. 11 A.M., Mr. Etherington-Smith: Demonstration of Minor Operations. 2 P.M., Medical and Surgical Clinics. X Rays. Operations. Dr. Davis: Diseases of the Throat, Nose, and Ear. 2.30 P.M., Dr. Abraham: Diseases of the Skin. 5 P.M., Lecture:—Dr. S. Taylor: Intestinal Ogstruction.

WEDNESDAY.—10 A.M., Dr. Saunders: Diseases of Children. Dr. Davis: Operations of the Throat, Nose, and Ear. 10.30 A.M., Surgical Registrar: Demonstration of Cases in Wards. 2 P.M., Medical and Surgical Clinics. X Rays. Operations. Mr. B. Harman: Diseases of the Eye. 2.30 P.M., Dr. Simson: Diseases of Women. 5 P.M., Lecture:—Dr. Beddard: Practical Medicine. (Lecture IV.)

THURSDAY.—10 A.M., Dr. Simson: Gynæcological Demonstration. 12.15 P.M., Lecture:—Dr. G. Stewart: Practical Medicine. 2 P.M., Medical and Surgical Clinics. X Rays. Operations. 2.30 P.M., Mr. Dunn: Diseases of the Eye. 5 P.M., Lecture: Dr. R. H. Cole: Hypochondriasis.

FRIDAY.—10 A.M., Dr. Robinson: Gynæcological Operations. 12.15 P.M., Lecture:—Dr. Pritchard: Practical Medicine. 2 P.M., Medical and Surgical Clinics. X Rays. Operations. Dr. Davis: Diseases of the Throat, Nose, and Ear. 2.30 P.M., Dr. Abraham: Diseases of the Skin. 5 P.M., Lecture:—Dr. Simson: Extra-uterine Gestation.

SATURDAY.—10 A.M., Dr. Saunders: Diseases of Children. Dr. Davis: Operations of the Throat, Nose, and Ear. Mr. Bishop Harman: Diseases of the Eye. 10.30 A.M., Medical Registrar: Demonstration of Cases in Wards. 2 P.M., Medical and Surgical Clinics. X Rays. Operations.

NORTH-EAST LONDON POST-GRADUATE COLLEGE, Prince of Wales's General Hospital, Tottenham, N.

MONDAY.—Clinics:—10.30 A.M., Surgical Out-patient (Mr. B. Gillespie). 2.30 P.M., Medical Out-patient (Dr. T. R. Whipham); Nose, Throat, and Ear (Mr. H. D. Gillies). 3 P.M., Clinical Pathology and Pathological Demonstration (Dr. W. H. Duncan).

TUESDAY.—Clinic; 2.30 P.M., Operations. Clinics:—Medical Out-patient (Dr. A. G. Auld).; Surgical (Mr. Howell Evans); Gynæcological (Dr. A. E. Giles). 3.30 P.M., Medical In-patient (Dr. A. J. Whiting). 4.30 P.M., Lecture:—Dr. G. N. Meachen: The Treatment of Various Types of Eczema.

WEDNESDAY.—Clinics:—2 P.M., Throat Operations (Mr. Gillies). 2.30 P.M., Children's Out-patient (Dr. T. R. Whipham); Skin (Dr. G. N. Meachen): Eye (Mr. R. P. Brooks). 3 P.M., X Rays (Mr. W. Steuart); Clinical Pathology and Pathological Demonstration (Dr. W. H. Duncan). 5.30 P.M., Eye Operations (Mr. Brooks).

THURSDAY.—2.30 P.M., Gynæcological Operations (Dr. A. E. Giles). Clinics:—Medical Out-patient (Dr. A. J. Whiting); Surgical (Mr. Carson). 3 P.M., Medical In-patient (Dr. G. P. Chappell). 4.30 P.M., Demonstration:—Dr. T. R. Whipham: Selected Cases of Children's Diseases.

FRIDAY.—2.30 P.M., Operations. Clinics:—Medical Out-patient (Dr. A. G. Auld); Surgical (Mr. B. Gillespie); Eye (Mr. R. P. Brooks). 3 P.M., Medical In-patient (Dr. R. M. Leslie); Clinical Pathology and Pathological Demonstration (Dr. W. H. Duncan).

LONDON SCHOOL OF CLINICAL MEDICINE, Dreadnought Hospital, Greenwich.

MONDAY.—2 P.M., Operations. 2.15 P.M., Mr. Turner: Surgery. 3.15 P.M., Sir Dyce Duckworth: Medicine. 4.30 P.M., Mr. R. Lake: Ear and Throat. Out-patient Demonstrations:—10 A.M., Surgical and Medical. 12 noon, Ear and Throat.

TUESDAY.—2 P.M., Operations. 3.15 P.M., Dr. R. Wells: Medicine. 2.15 P.M., Mr. R. Carling: Surgery. 4.15 P.M., Sir M. Morris: Diseases of the Skin. Out-patient Demonstrations:—10 A.M., Surgical and Medical. 12 noon, Skin.

WEDNESDAY.—2 P.M., Operations. 2.15 P.M., Dr. F. Taylor: Medicine. 3.30 P.M., Mr. Cargill: Ophthalmology. Out-patient Demonstrations:—10 A.M., Surgical and Medical. 11 A.M., Eye. 5 P.M., Special Lecture:—Mr. McGavin: Fractures.

THURSDAY.—2 P.M., Operations. 2.15 P.M., Dr. G. Rankin: Medicine. 3.15 P.M., Sir W. Bennett: Surgery. Out-patient Demonstrations:—10 A.M., Surgical and Medical. 12 noon, Ear and Throat. 4.30 P.M., Special Lecture:—Dr. Lister: Pneumonia in Children.

FRIDAY.—2 P.M., Operations. 2.15 P.M., Sir J. Rose Bradford: Medicine. 3.15 P.M., Mr. McGavin: Surgery. Out-patient Demonstrations:—10 A.M., Surgical and Medical. 12 noon, Skin. 2.15 P.M., Special Lecture:—Sir John Bradford: Ascites.

SATURDAY.—10 A.M., Radiography. 11 A.M., Dr. A. Davies: Pathological Demonstration. 2 P.M., Operations. Out-patient Demonstration:—10 A.M., Surgical and Medical. 11 A.M., Eye.

HOSPITAL FOR SICK CHILDREN, Great Ormond-street, W.C.

THURSDAY.—4 P.M., Lecture:—Dr. Batten: Clinical Cases in the Ward.

NATIONAL HOSPITAL FOR THE PARALYSED AND EPILEPTIC. Queen-square, Bloomsbury, W.C.

TUESDAY.—3.30 P.M., Clinical Lecture:—Dr. J. Taylor: Hemiplegia.

FRIDAY.—3.30 P.M., Clinical Lecture:—Dr. J. Taylor: Tabes Dorsalis.

ST. JOHN'S HOSPITAL FOR DISEASES OF THE SKIN, 49, Leicester-square, W.C.

TUESDAY.—6 P.M., Mr. W. Hampson: X Rays. Other Skin Affections.

THURSDAY.—6 P.M., Chesterfield Lecture:—Dr. M. Dockrell: The Solution of the Confusion between Pityriasis Rubra Pilaris and Lichen, and the Treatment of Each.

UNIVERSITY OF LONDON (UNIVERSITY COLLEGE), The Francis Galton Laboratory for National Eugenics.

TUESDAY.—8.30 P.M., Dr. M. Greenwood: Infantile Mortality in Relation to Administrative Control. (Lecture IV.)

ANCOATS HOSPITAL, Manchester.

THURSDAY.—4.15 P.M., Dr. C. H. Melland: Spasmodic Respiratory Affections. (Post-Graduate Clinic.)

MANCHESTER ROYAL INFIRMARY.

TUESDAY.—4.30 P.M., Dr. C. Moore: Some Conditions which may Simulate Disease of the Stomach.

FRIDAY.—4.30 P.M., Mr. C. Roberts: Tumours of the Breast.

SALFORD ROYAL HOSPITAL.

THURSDAY.—4.30 P.M., Mr. J. B. Macalpine: Swellings in the Neck (Post-Graduate Course).

OPERATIONS.

METROPOLITAN HOSPITALS.

MONDAY (19th).—London (2 P.M.), St. Bartholomew's (1.30 P.M.), St. Thomas's (3.30 P.M.), St. George's (2 P.M.), St. Mary's (2.30 P.M.), Middlesex (1.30 P.M.), Westminster (2 P.M.), Chelsea (2 P.M.), Samaritan (Gynæcological, by Physicians, 2 P.M.), Soho-square (2 P.M.), Gt. Northern Central (2.30 P.M.), West London (2.30 P.M.), London Throat (9.30 A.M.), Royal Free (2 P.M.), Guy's (1.30 P.M.), Children, Gt. Ormond-street (9 A.M.), St. Mark's (2.30 P.M.), Central London Throat and Ear (Minor 9 A.M., Major 2 P.M.).

TUESDAY (20th).—London (2 P.M.), St. Bartholomew's (1.30 P.M.), St. Thomas's (3.30 P.M.), Guy's (1.30 P.M.), Middlesex (1.30 P.M.), Westminster (2 P.M.), West London, (2.30 P.M.), University College (2 P.M.), St. George's (1 P.M.), St. Mary's (1 P.M.), St. Mark's (2.30 P.M.), Cancer (2 P.M.), Metropolitan (2.30 P.M.), London Throat (9.30 A.M.), Samaritan (9.30 A.M. and 2.30 P.M.), Throat, Golden-square (9.30 A.M.), Soho-square (2 P.M.), Chelsea (2 P.M.), Children, Gt. Ormond-street (9 A.M. and 2 P.M., Ophthalmic, 2 P.M.), Tottenham (2.30 P.M.). Central London Throat and Ear (Minor, 9 A.M., Major, 2 P.M.), Royal National Orthopædic (9.30 A.M. and 4 P.M.).

WEDNESDAY (21st).—St. Bartholomew's (1.30 P.M.), University College (2 P.M.), Royal Free (2 P.M.), Middlesex (1.30 P.M.), Charing Cross (3 P.M.), St. Thomas's 2 P.M.), London (2 P.M.), King's College (2 P.M.), St. George's (Ophthalmic, 1 P.M.), St. Mary's (2 P.M.), St. Peter's (2 P.M.), Samaritan (9.30 A.M. and 2.30 P.M.), Gt. Northern Central (2.30 P.M.), Westminster (2 P.M.), Metropolitan (2.30 P.M.), London Throat (9.30 A.M.), Cancer (2 P.M.), Throat, Golden-square (9.30 A.M.), Guy's (1.30 P.M.), Royal Ear (2 P.M.), Children, Gt. Ormond-street (9 A.M. and 9.30 A.M., Dental, 2 P.M.), Tottenham (Ophthalmic, 2.30 P.M.), West London (2.30 P.M.), Central London Throat and Ear (Minor, 9 A.M., Major, 2 P.M.).

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SATURDAY (24th).—Royal Free (9A.M.), London (2 P.M.), Middlesex (1.30 P.M.), St. Thomas's (2 P.M.), University College (9.15 A.M.), Charing Cross (2 P.M.), St. George's (1 P.M.), St. Mary's (10 A.M.), Throat, Golden-square (9.30 A.M.), Guy's (1.30 P.M.), Children, Gt. Ormond-street (9 A.M. and 9.30 A.M.), West London (2.30 P.M.).

At the Royal Eye Hospital (2 P.M.), the Royal London Ophthalmic (10 A.M.), the Royal Westminster Ophthalmic (1.30 P.M.), and the Central London Ophthalmic (2 P.M.), Hospital operations are performed daily.

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THE INDEX TO THE LANCET.

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(Taken daily at 8.30 a.m. by Steward's Instruments.)

THE LANCET Office, Feb. 14th, 19

Date.	Barometer reduced to Sea Level and 32° F.	Direction of Wind.	Rain fall.	Solar Radio in Vacuo.	Maximum Temp. Shade.	Min. Temp.	Wet Bulb.	Dry Bulb.	Remarks.
Feb. 8	29·05	S.E.	...	56	52	42	45	47	Cloudy
,, 9	29·08	S.	0·25	71	54	47	49	50	Cloudy
,, 10	29·41	SSW	0·07	73	53	45	45	46	Fine
,, 11	29·23	S.W.	0·03	87	53	42	44	45	Cloudy
,, 12	29·37	E.	0·34	64	50	43	43	43	Raining
,, 13	29·58	S.	0·07	50	46	43	43	45	Overcast
,, 14	29·94	N.E.	0·02	57	46	44	43	44	Overcast

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Lettsomian Lectures
ON
GLYCOSURIA.

Delivered before the Medical Society of London.

BY ARCHIBALD E. GARROD, D.M., M.A. OXON., F.R.C.P. LOND., F.R.S.,

PHYSICIAN TO, AND LECTURER CHEMICAL PATHOLOGY AT, ST. BARTHOLOMEW'S HOSPITAL; PHYSICIAN TO THE HOSPITAL FOR SICK CHILDREN.

LECTURE I.

Delivered on Feb. 5th, 1912.

MR. PRESIDENT AND GENTLEMEN,—When entrusted with the delivery of a course of lectures founded to perpetuate the memory of a distinguished man of the past, one would wish to choose a subject in which he took some special interest. This satisfaction is denied to me this evening, for I can find nothing to indicate that among the diverse subjects which occupied the many-sided mind of Dr. Lettsom, the study of the renal excretion held any prominent place. Indeed, the only one of his writings with which I am acquainted, which relates to the matter, is a counterblast to the arrogant pretensions of a class of empirics who claimed to diagnose diseases by a mere inspection of the patients' urine.

Nevertheless, when I was honoured by the council of the Medical Society with the invitation to deliver the Lettsomian lectures of the current year—an honour which I appreciate most highly, and for which I beg to return my sincere thanks—I was emboldened to take glycosuria as my theme when I found that the first Lettsomian lecturer of all, Dr. Owen Rees, had treated of "Some of the Pathological Conditions of the Urine," and that the lecturer of the year 1860, Dr. Pavy, whose decease at a ripe old age we have so recently deplored, gave some of the first fruits of his investigations of diabetes, a research which was extended over more than 50 years of a long and honoured life. My subject was evidently beyond reproach, whatever the defects in my presentation of it.

HISTORICAL SKETCH.

When we turn to the writings of past centuries for light upon the growth of our knowledge of glycosuria, we find that diabetes occupies a peculiar position as a malady which was recognised by, and described from, its other symptoms, centuries prior to the discovery of its cardinal sign. The clinical picture of a disease characterised by thirst, polyuria, and loss of flesh was drawn at the beginning of the Christian era by Celsus and others, and the name "diabetes" was used to designate it in the writings of Aretæus; but although it would appear that sugary urine was recognised in India at a very early date the real foundation of the study of glycosuria was laid by that great physician Thomas Willis, whose fame rests mainly upon his work on the anatomy of the brain, and whose name is immortalised in that of the arterial anastomosis, which he was the first to describe.

The following passage, which bears the stamp of original observation, is contained, in Latin form, in the "Pharmaceutice Rationalis," the last work of Willis, published in 1674, the year before his death:—

> But the statements of many authors, that the liquid imbibed is excreted little, if at all, changed, is very far from the truth; for in every case which I have met with, and I believe that this holds true for all cases, the urine has differed greatly from the imbibed fluids, as also from any humour which is wont to be generated in our bodies, in that it is remarkably sweet, like a solution of honey or sugar.[1]

Richard Morton,[2] writing in 1698, was evidently well acquainted with this property of diabetic urine, which he describes as having lost its saltness, and as being sweet like honey, as if from a copious admixture of fresh chyle. However, the statements of the English physicians seem to have met with little acceptance on the continent, where they were questioned or denied in not a few quarters, and it was not until a century had elapsed since Willis wrote, that the next important step was made, and there was published a paper by Matthew Dobson,[3] of Liverpool, in 1776, which may justly be described as epoch-making.

Dobson obtained the sugar from diabetic urine by evaporation, as a solid if impure mass; showed that such urine undergoes vinous and acetic fermentation, and detected the sweetness of the blood serum of a diabetic patient, from which he concluded that the sugar was excreted from the blood and not formed in the kidneys. If Willis discovered, or re-discovered glycosuria, to Matthew Dobson must be assigned the credit of having discovered hyperglycæmia. We may indeed claim for him the discovery of acetonuria also, for he speaks of the sweetish odour of diabetic urine, which can hardly have been due to anything but acetone.

We may well be proud of the past achievements of our countrymen in this field, for during the seventeenth and eighteenth centuries it was by British observers that all the chief advances in the study of diabetes were made, culminating in the introduction of the dietetic treatment of the malady by John Rollo[4] in 1796. It was a Frenchman, Chevreul, who proved, in 1807, the identity of the sugar present in diabetic urine with glucose or grape sugar.

Obviously the methods in use by the early investigators—taste, evaporation, and the like—can only have served to demonstrate the presence of large quantities of sugar, such as are excreted in the worst cases of diabetes, and the detection of the slighter forms of glycosuria can hardly have been possible, save by fermentation, prior to the introduction of Trommer's test[5] in 1841, of Moore's test[6] in 1844, and of Fehling's quantitative method[7] in 1849.

So it came about that our knowledge of glycosuria came through diabetes, and this provenance has profoundly influenced, and still influences, our ideas concerning it. We do not always realise sufficiently that our conceptions of any subject are shaped, not merely by the knowledge of it which we possess, but also by the manner in which that knowledge has been gained. It will be one of my aims to show, in these lectures, that we are more likely to obtain a just conception of both if we approach the study of diabetes through that of glycosuria.

Medical science is becoming hide-bound by an obsolescent system of classification of diseases, and by an inadequate terminology. The time-honoured classification, which was based upon clinical observation, aided by morbid anatomy, is giving place to one which has its foundations in bacteriology and an ampler pathology. The transition from old to new must needs be gradual, for whilst we are able to realise the imperfections of the older scheme, the knowledge requisite for the completion of the new scheme is still lacking. There are not a few diseases the fundamental nature of which is still wholly obscure.

Our terminology does not suffice for the expression of ideas which are rapidly coming into prominence, but which had no place in the older medicine. We recognise the fact that the same clinical picture may have its origin in a number of different pathological events, and the present-day use of such terms as "syndrome," "symptom-complex," and "morbid entity," bears witness to the need of new designations.

In some instances a clinical syndrome, such as those which we associate with scarlet fever and measles, affords evidence of the working of some definite and specific morbid process, due to the growth in the body of a specific micro-organism, and in such cases the syndrome is coextensive with the underlying disease. Other syndromes have their aspects determined by the seat, rather than by the nature, of the ground-lesion, as, for example, the meningitis syndrome (to which German physicians apply the term meningismus); and, seeing that different micro-organisms tend to attack different parts of the cerebro-spinal membranes, the grouping of symptoms may serve to reveal, or to lend strong probability to the double diagnosis of the nature of the infective agent and the region which is attacked. In yet other syndromes the grouped symptoms are, for the most part, dependent upon one primary symptom, and, given a morbid process which gives rise to that symptom, the others will, sooner or later, be added to it.

It is to a symptom-complex of this last kind that we are

[1] Pharmaceutice Rationalis, 1674, sec. iv., cap. iii.
[2] Phthisiologia, lib. 1, cap. viii.
[3] Medical Observations by a Society of Physicians in London, 1776, v. p. 298.
[4] Cases of the Diabetes Mellitus, &c., second edition, London, 1806.
[5] Annalen der Chemie und Pharmakologie, 1841, Band xxxix., p. 361.
[6] THE LANCET, 1844, vol. i., p. 751.
[7] Annalen der Chemie und Pharmakologie, 1849, Band lxxii., p. 106.

accustomed to give the name of diabetes mellitus; but it has long been recognised that cases of diabetes differ very widely in their course and outlook, and evidence is accumulating that diabetes is no definite circumscribed disease, but that the disturbance of carbohydrate metabolism which leads to accumulation of sugar in the blood, and so to glycosuria, has its origin in a variety of different causes.

DEFINITION AND DIAGNOSIS OF DIABETES.

No definition of diabetes which has yet been proposed meets all requirements, and this is what may be expected if the view just expressed be correct. One cannot accurately define what is essentially indefinite. In many cases of diabetes, glycosuria is for a time, and sometimes for a long time, the only morbid symptom, and is not infrequently detected at an examination for life insurance of a man who believes himself to be in excellent health. It is clear, then, that the presence of associated symptoms, such as thirst, polyuria, and loss of flesh, cannot enter into our definition. Persistence of the glycosuria is perhaps the criterion most often set up; but this is unsatisfactory, seeing that there is good reason for believing that recovery from diabetes occasionally occurs. The definition suggested by Naunyn that a patient who passes sugar after the free taking of starch is virtually a diabetic is perhaps the best, but as I hope to show later on, it is probable that the difference between such a person and one who only acquires glycosuria after a dose of cane sugar or glucose considerably less than is required to cause excretion of sugar by a normal individual is rather one of degree than of kind.

It is possible that the error of metabolism which leads to glycosuria is not identical in all cases, but that in one case the chief part may be played by increased formation and mobilisation of sugar in the organism, and in another impaired destruction may play the chief part. However, I do not propose to enter in these lectures upon any discussion of the many and difficult questions which the chemical pathology of glycosuria presents, but rather to deal with those aspects of the subject which are more purely clinical.

The Diagnosis of Glycosuria.

There is no urinary anomaly of which we should know more than of glycosuria, for thousands of specimens of urine are being tested for sugar every day, in the course of the routine examination of hospital and private patients, and of candidates for insurance. Only for albumin is as persistent an outlook kept. Yet when we turn to what has been written upon the subject we find that many recorded observations, which would otherwise be of great value and interest, are vitiated by the absence of conclusive evidence that the abnormal substance excreted in the urine is really glucose.

A reducing substance in urine which responds to the tests usually relied upon is not necessarily a sugar; and other sugars besides glucose are met with in urine. The development of a greenish opacity, which may appear only when a mixture of urine and Fehling's solution has been boiled for some time, or as it cools, may indicate the presence of glucose in small amount, but that it does so must not be assumed without further proof. Certain nitrogenous constituents of normal urine have some reducing power, and salicyluric acid, which is present in the urine of patients taking salicylates, causes such a reduction. On the other hand, an orange precipitate, formed when hot urine is mixed with hot Fehling's solution without re-boiling, affords almost conclusive evidence of the presence of a hexose monosaccharid, such as glucose or lævulose.

An orange precipitate, obtained on boiling, is sometimes due to the presence of a compound glycuronate. Glycuronic acid is closely allied to the sugars, but its presence is in no way indicative of a disorder of carbohydrate metabolism, but of the calling into play of one of the protective mechanisms, by means [of which the organism is enabled to avert from itself damage from chemical poisons introduced by the mouth, or toxic substances formed in the alimentary canal. The noxious substance is combined with glycuronic acid, and so excreted, just as benzoic acid is combined with glycocoll and excreted as hippuric acid. Hence the appearance of glycuronic acid in the urine indicates merely the need of dealing with such a poison.

Homogentisic acid, the aromatic acid which is excreted by those who exhibit the very rare, and usually congenital, error of protein metabolism known as alkaptonuria, is a powerful reducing agent; and alkaptonurics have sometimes been refused for insurance on this account. However, the other properties of alkapton urine are so striking as to render the diagnosis easy to anyone acquainted with these properties, which include darkening on standing or addition of alkalies, and the staining of garments, as by a photographic developer.

Sugars in Urine other than Glucose.

Of the sugars, other than glucose, which are met with in urine, lactose, lævulose, and the pentose sugar arabinose are the most important; whereas maltose, isomaltose, galactose, and the heptose recently described by Rosenberger [8] as present in a single case, have as yet little more than academic interest. A term is certainly needed to designate the excretion in urine of sugars generally, and this need is supplied by the word "mellituria," which has been somewhat widely employed of recent years by German medical writers.

Lactose.

After glycosuria, lactosuria is the commonest variety of mellituria, but it is only met with in certain definite circumstances, in the absence of which it may be excluded.

Lactose is sometimes excreted by women during the last months of pregnancy, but much more often and in larger quantities during lactation, and especially when, for any reason, nursing has suddenly been arrested. It may also be found occasionally in the urine of breast-fed infants or of those to whose bottle-food this sugar has been added. J. Grosz,[9] who made a careful study of the subject, failed to find lactose in the urine of healthy infants at the breast, but observed conspicuous reduction by the urine of such infants when suffering from gastro-intestinal disturbances. Langstein and Steinitz [10] proved, by methods which allow of no doubt, that the sugar excreted in such circumstances is really lactose, with an occasional admixture of galactose, which is one of the components of this disaccharid. In one case the bulk of the urinary sugar was galactose.

It is obvious that lactosuria has no connexion with glycosuria, and that further discussion of it will throw no light upon the problems with which we are concerned at present.

Pentose.

The same may be said of pentosuria, the symptom of a rare anomaly of metabolism which is probably harmless, but as it is easily mistaken for persistent glycosuria and has, in not a few instances, been treated as such by dietary restrictions which are very irksome, if not actually detrimental to the patient, it is clearly of great importance that it should be correctly diagnosed when met with.

The pentose excreted belongs to a wholly distinct class of sugars from glucose, its molecule being built up upon a chain of only five carbon atoms, and much obscurity still surrounds the origin of the pentose of urine, which is always arabinose, and almost always in the optically inactive or racemic form. This much appears certain—namely, that the metabolic error which underlies pentosuria is of a wholly different nature from that which brings about the excretion of hexose sugars.

Lævulose.

With lævulosuria the case is different, for glucose and lævulose sometimes occur together in the urine, so that there would appear to be some connexion between them.

Lævulose has been detected in small amounts in the urine of not a few diabetic patients, in association with much larger quantities of glucose. In other cases the proportion of lævulose is so much greater that the optical effect of the glucose is neutralised to no slight extent, and is occasionally balanced or over-balanced. For this condition the name of mixed mellituria has been suggested.

In almost all the recorded cases of this kind the exclusion of carbohydrates from the diet has brought about the disappearance of both sugars from the urine, and in some cases it has been found that when lævulose was taken by the mouth, even in doses calculated to overstep the tolerance of normal persons, no increase of the urinary lævulose has resulted.

Otto Neubauer [11] has described an example in which,

[8] Deutches Archiv für Klinische Medizin, 1907, Band lxxxviii., Zeitschrift für Physiologische Chemie, 1906, Band xlix., p. 202.
[9] Jahrbuch für Kinderheilkunde, 1892, N.F., Band xxxiv., p. 83.
[10] Hofmeister's Beiträge zur Chemischen Physiologie und Pathologie, 1905, Band vii., p. 575.
[11] Münchener Medizinische Wochenschrift, 1905, Band lii., p. 1525.

although a large dose of lævulose caused no increased output of that sugar, the administration of glucose brought about an increase of both glucose and lævulose in the urine. In some other cases as large a dose as 100 grammes of glucose has caused no increased excretion of either sugar. We must assume that, in Neubauer's case, glucose was in part converted into lævulose and excreted as such.

In a further group of cases of what may be styled pure lævulosuria, the excretion of lævulose is arrested by the removal of lævulose itself and saccharose, of which it is a constituent, from the diet, whereas glucose and starchy foods can be taken with impunity. Even inulin, a polysaccharid related to lævulose as starch is to glucose, fails to excite lævulosuria in such cases. In one case, for the most thorough investigation of which Otto Neubauer is again to be thanked, when the urine was freed from lævulose by dietary any dose of that sugar, however small, excited lævulosuria, and whatever the dose given, whether as little as 3·8 grammes, or as large as 50 grammes, practically the same fraction of it reappeared unchanged in the urine—namely, 15–17 per cent.

The whole subject of lævulosuria calls for much further investigation, but, seeing that what is needed is multiplication of observations of individual cases, and that such cases are extremely rare, progress must needs be slow.

Diagnostic Methods.

The occurrence of reduction when the hot urine is mixed with hot Fehling's solution without re-boiling indicates, as I have already mentioned, the presence of glucose or lævulose or both, but it does not serve to distinguish between them.

With lactose, which is a disaccharid of glucose and galactose, reduction is less prompt than with monosaccharids, and does not occur until the mixture is boiled. With pentose, also, the reduction occurs only after boiling—it may be only after somewhat prolonged boiling, and usually with remarkable suddenness. The quantity of arabinose excreted in cases of pentosuria is not large, and a pea-green rather than an orange opacity is usually observed.

In a urine which responds to Trommer's or Fehling's tests dextro-rotation of the polarised ray indicates the presence of glucose or lactose. The dextro-rotation may be conspicuously less than is to be expected from the reducing power, owing to the presence of a lævo-rotatory substance such as lævulose or β-oxybutyric acid, of which the latter is a common constituent of diabetic urines, and often an abundant constituent. Urine containing an evenly balanced admixture of dextrose and lævulose may be optically inactive. A lævo-rotatory urine, which reduces copper reagents, may contain lævulose, either alone or with a lesser quantity of glucose. Again, the compound glycuronates are lævo-rotatory, whereas glycuronic acid itself is dextro-rotatory. When, therefore, a urine which contains a compound glycuronate is boiled with hydrochloric acid, so as to set free glycuronic acid, its original lævo-rotation gives place to a dextro-rotation.

In all cases of pentosuria hitherto examined, with one or two exceptions, arabinose has been excreted in the racemic form, and the urine has been optically inactive. Nor do alkapton urines exert any effect on the polarised ray.

The fermentation test lends valuable aid. Dextrose and lævulose are fermented by yeast, whereas lactose is not so fermented within the 24 hours allowed for the test—that is to say, not until it has been split into its monosaccharid constituents. Arabinose is not fermented by yeast, and the glycuronates and homogentisic acid do not respond to this test.

The deposition of a crystalline osazone, on application of the phenyl-hydrazine test, indicates the presence of glucose, lævulose, or arabinose. Glucose and lævulose yield the same osazone, which melts, when pure, at 206° C., and this test affords no distinction between them.

The pentosazone melts at a much lower temperature, 150°–160° C. Lactose forms an osazone which melts at 200° C., but as it is much more readily soluble, and the quantities of lactose met with in urine are not large, it does not crystallise out from the dilute solution, even on cooling. Glycuronic acid, also, forms a crystalline compound with phenyl-hydrazine, but the compound glycuronates do not do this, and urines which contain them do not respond, therefore, to the phenyl-hydrazine test.

Lævulose forms a special compound with methyl phenyl-hydrazine, which melts at 153° C., and which serves for its differentiation from glucose, which does not yield an osazone with this base. Special tests, such as Rubner's for lactose, Seliwanoff's for lævulose, and the phloroglucin and orcin tests for arabinose and glycuronic acid, may also be employed.

The above summary will suffice to emphasise the importance of making sure, in any case which may serve as a basis of conclusions as to the occurrences, causation, or temporary character of a glycosuria, that the reducing substance in the urine is actually a sugar, and, if a sugar, glucose.

To ensure certainty, evidence should be forthcoming that the urine in question contains a dextro-rotatory reducing substance, fermented by yeast, and which yields an osazone of the correct crystalline form, and which melts, before re-crystallisation, at a point slightly above 200° C.

THE CLASSIFICATION OF THE VARIETIES OF GLYCOSURIA.

There are few symptoms in the whole category of morbid manifestations which own so many distinct causes as does glycosuria, and not one which is so uncertain, and apparently so capricious, in its appearance when its several causes are at work in the human organism. Even when the pancreas, the organ which, above all others, appears to be most intimately concerned with the metabolism of carbohydrates, is itself the seat of disease, glycosuria is only occasionally observed. In some of the gravest forms of pancreatic disease this symptom is rare.

In the following list I have collected together a large number of the known causes of glycosuria in man, but I am not prepared to contend that the list includes all the conditions in connexion with which excretion of sugar has been observed. Some varieties which have only been observed in the course of experiments upon animals have been intentionally omitted.

Toxic.—Administration of: Morphine, atropine, strychnine, curare, amyl nitrite, copaiba, phosphorus, perchloride of mercury, uranium salts, phloridzin, acetone. Anæsthetics: Chloroform, ether, nitrous ether. Poisoning by coal gas, carbon monoxide. Alcohol, especially in champagne and beer. Thyroid extract, adrenaline.
Asphyxia—i.e., accumulation of carbon dioxide in respired air.
Cold immersion (e.g., attempted suicide by drowning).
Inanition (vagabond glycosuria).
Psychic strain or shock.
Diseases of the nervous system.—Apoplexy, convulsions, traumatism, cerebral tumours, meningitis (meningococcal and tubercular), syphilitic affections of the brain, general paralysis of the insane, paralysis agitans, tabes.
Acute fevers.—Pneumonia, scarlet fever, measles, mumps, variola, malarial fevers, phlegmonous diseases.
Diseases of the liver.—Cirrhosis, cholelithiasis.
Diseases of the pancreas.—Hæmorrhagic pancreatitis, necrosis, carcinoma, fibrosis, pancreatitis of mumps, catarrhal pancreatitis.
Intestinal disorders.—Corrosive poisoning, enteritis, colitis.
Diseases of the thyroid gland.—Exophthalmic goitre, myxœdema.
Diseases of the pituitary body.—Acromegaly, gigantism.
Pregnancy, tumours of the uterus and ovaries.
Renal affections.—Functional and organic.
Chyluria.

It will be seen that the list includes a medley of conditions, many of which stand in no obvious relationship to each other. Some fall into what appear to be natural groups, such as the toxic varieties and those associated with lesions of the nervous system, but even these groups are to a great extent artificial, for in them are included varieties of glycosuria which differ widely in their nature, and for some of which several wholly distinct explanations may be suggested, all almost equally plausible.

There can be no doubt that different toxic substances induce glycosuria in quite different ways. Thus, the excretion of sugar which follows the administration of thyroid extract is evidently intimately related to that which results from over-activity of the thyroid gland, of which I propose to speak at some length in a later lecture.

Phloridzin glycosuria may serve as a type example of that which results from a failure on the part of the kidneys to retain the normal quotum of sugar in the blood, and Pollak [12] believes that the excretion of sugar which follows the administration of salts of uranium has a similar origin.

Other poisons, again, such as coal gas and carbon monoxide, probably owe their power of inducing glycosuria to the partial asphyxiation to which they give rise. Edie, B. Moore, and Roaf,[13] who have recently published the results of an experimental investigation of asphyxial glycosuria, arrived at the conclusion that the important factor in its causation is not a deficiency of oxygen, but the accumulation of carbon dioxide in the tissues. They point out that many of

[12] Archiv für Experimentelle Pathologie und Pharmakologie, 1911, Band lxiv., p. 414.
[13] Biochemical Journal, 1911, vol. v., p. 351.

the drugs which are excitants of glycosuria exert actions which lead in various ways to accumulation of carbon dioxide in the circulation, such as curare, morphine, and perhaps amyl nitrite. The glycosuria which accompanies general anæsthesia they regard as due in part to a similar cause, and in part to the direct physico-chemical action of the anæsthetic.

It would take me too long to follow the observers quoted into a discussion of the manner in which the accumulation of carbon dioxide brings about the excretion of sugar, but it should be mentioned here that some varieties of glycosuria which do not fall into the toxic group may not improbably have a like origin.

Georg Hoppe-Seyler [14] has described the vagabond glycosuria. He observed that tramps who had walked long distances on a diet of bread and potatoes frequently passed urine containing 0·5–0·7 per cent. of glucose on admission to an institution, but that the sugar quickly disappeared, even on a diet rich in carbohydrates, and did not return even after the administration of glucose on an empty stomach in doses calculated to tax the tolerance of a healthy man.

The glycosuria which follows immersion in cold water was observed by Glaessner [15] in cases of attempted suicide by drowning. It also was of a transitory kind.

The glycosurias which accompany diseases and lesions of the nervous system also constitute a miscellaneous group. The profound influence of the nervous system in controlling carbohydrate metabolism admits of no question; but nervous lesions may induce glycosuria in several different ways, as on the one hand by causing evacuation of the glycogen reservoirs, on the other hand by bringing about disturbances of the functions of the glands of internal secretion, and possibly in yet other unsuspected ways.

The latter portion of the list foreshadows a more systematic clinical grouping, according to the organ concerned in the causation of glycosuria in different cases, and the evidence bearing upon this question will form the chief subject of discussion in my second and third lectures.

In the present state of our knowledge no complete system of classification of the varieties of glycosuria on such lines is possible, and we must be content to wait until increasing knowledge places such a grouping within our grasp.

A Pathological Classification.

On the other hand, what may be called a pathological classification of glycosuria is already within our reach, and one based upon fundamental differences.[16]

In the one class we may group all those cases in which the excretion of sugar in the urine is the outward manifestation of the presence of excess of sugar in the blood, of hyperglycæmia; and in a second class, those in which the sugar content of the blood is normal, or even below normal, and in which the glycosuria must be attributed to a failure on the part of the kidneys to retain the normal quotum. There is no English word which expresses this renal shortcoming so well as does the German word "Durchlassigkeit."

However, such a classification is not very useful for practical purposes, seeing that the cases of the first, or hyperglycæmic, group are in such enormous excess that the practical outcome is much the same as if we were to classify human beings into pigmented individuals and albinos respectively.

The large hyperglycæmic group needs to be further subdivided by a deep line of cleavage into those cases in which the excess of sugar in the blood is the outcome of a metabolic derangement (a deficient utilisation and excessive mobilisation of glucose in the organism), and those in which the blood is temporarily overloaded with glucose by the emptying of the glycogen reservoirs, as in the "puncture glycosuria" of Claude Bernard. But here, again, the dichotomy rather chips off a fragment than effects a just division, for what may be called metabolic glycosuria embraces the great majority of all cases met with in clinical practice, and to this group belong all cases which can lay any just claim to the name of diabetes.

I am far from wishing to suggest that puncture glycosuria has no clinical importance. On the contrary, a transitory excretion of sugar which ceases spontaneously in a day or two, as we should expect a glycosuria due to emptying of the glycogen reservoirs to do, is not a very uncommon clinical event, and may follow insults to the organism of various kinds, such as severe injuries, mental and emotional shocks, surgical operations, or paroxysmal pains. This makes the study of the causation of glycosuria even more difficult than it would otherwise be, and increases the chance of our being led to incorrect conclusions.

To select a single example: in cases of cholelithiasis extension of inflammation to the pancreas is by no means a rare event, and when this happens glycosuria or diabetes results; but, on the other hand, the transient excretion of sugar which sometimes accompanies gall-stone colic is probably due to emptying of the glycogen reservoirs.

The glycosuria which results from impaired retentive power of the kidney is in no sense due to error of carbohydrate metabolism, although when the blood is continuously drained of sugar by renal defect, as in animals subjected to repeated injections of phloridzin, the attempt to keep up the normal supply to the tissues leads to a secondary metabolic disturbance, to wasting and breaking down of proteins in the organism, and to a condition which resembles diabetes in some respects.

A Clinical Classification.

From yet another standpoint, and this time a clinical one, cases of metabolic glycosuria may be grouped into three main classes, according to the manner in which the disturbed body chemistry manifests itself—namely, into those cases in which actual excretion of sugar does not occur in ordinary circumstances, but may be induced by a dose of glucose or of cane sugar which, although it may be large, would not be sufficient to produce glycosuria in a normal individual; those cases in which spontaneous glycosuria occurs for a time, or recurs intermittently, apart from any excessive taking of sugar; and lastly, those in which the glycosuria is continuous, or is only suspended for a time by the imposition of a more or less rigid dietary poor in, or as far as possible devoid of, carbohydrate constituents.

The dividing lines between these several groups are shadowy, and an individual case may pass through all three stages in the course of its development. Again, some of the exciting causes of glycosuria with which we are most familiar produce in some cases no obvious disturbance of carbohydrate metabolism at all; in others a mere lowering of tolerance for glucose, a potential glycosuria; in others a temporary spontaneous glycosuria; and in others again a continuous excretion of sugar which conforms to any definition of diabetes yet advanced.

Need of Prolonged Clinical Investigation.

I have already emphasised the importance of the accurate diagnosis of glycosuria, but it is a matter of no less importance that each individual case should be subjected to careful investigation over a considerable period of time. Only in this way can we hope to make any real advance in the study of the clinical aspects of our subject.

We cannot tell which cases are likely to deviate from the ordinary course, and many examples of temporary glycosuria, in themselves of great interest, have been rendered valueless by the lack of such investigation during the glycosuric period. Only when it has been already too late to fill in the gaps in the study of it has the phenomenon been recognised as transitory. Yet as such cases constitute the exceptions, and the immensely greater number follow the usual continuous course—which course can be foretold with some approach to accuracy after a few examinations, much labour will have to be wasted if we are to insure that all cases in which the excretion of sugar may prove eventually not to be persistent, shall be subjected to adequate investigation. Not really wasted, however, for our knowledge of diabetes is not yet so complete that the careful watching of ordinary cases can be dispensed with, either from the point of view of the advance of medical science or from that of the interests of the individual patients.

Nor is prolonged watching of any less importance than careful investigation during a special period, for experience teaches that recovery from glycosuria cannot be assumed to be permanent, until the case has been under observation for a long period after the urine has ceased to contain sugar. In many of the recorded cases the period of watching has been far too short to carry conviction.

Again, many descriptions are deprived of the value which

[14] Münchener Medizinische Wochenschrift, 1900, Band xlvii., p. 531.
[15] Wiener Klinische Wochenschrift, 1906, Band xix., p. 920.
[16] See Leo Pollak, Archiv für Experimentelle Pathologie und Pharmakologie, 1909, Band lxi., p. 376.

they would otherwise possess by the absence of any evidence to show whether, after glucose has ceased to be excreted spontaneously, the patients have recovered the normal tolerance for carbohydrates, or whether the power of dealing with foodstuffs of this class has remained persistently lowered. It is not difficult to obtain information on this point by means of simple and easily applied tests, and concerning most of the cases recorded in recent years such information is forthcoming.

Such investigations of glycosuria and of diabetes from the standpoint of clinical medicine are still greatly needed; for this branch of the subject has until recently been somewhat neglected in favour of the study of the metabolism of carbohydrates and its derangements in disease. This latter has long engaged the attention of a succession of able and highly skilled observers, and to the control of the metabolic error our treatment has hitherto been mainly directed. Far be it from me to depreciate in any way the value of these fascinating researches which have done so much to advance our knowledge, and have conduced so much to the advantage of generations of diabetic patients. Rather would I plead for a similar extension of our knowledge of diabetes in other directions, and a concerted effort to get into touch with the diseases behind the syndrome—an effort in which chemical pathologists and clinical observers may well combine.

What is specially needed at the present time is further advance into the regions which were opened up by Minkowski's discovery of the effects of removal of the pancreas in dogs, and from many sides pioneers are beginning to press forward into the unexplored tract. One such newly developed field is the study of the effect of the administration of glucose and other sugars to healthy persons and to sufferers from various diseases, and of the conditions which influence the power of utilising the several individual sugars.

POTENTIAL OR ALIMENTARY GLYCOSURIA.

Many constituents of urine which, when present in considerable amounts, indicate deviations from the standard of health, can be shown by methods of special delicacy to be present in traces in normal urine. This is the case with albumin, and with glucose also.

The controversy warmly carried on around this question some years ago may now be regarded as laid to rest, and it is now accepted as a fact that the urine of normal individuals contains glucose to the amount of some 1 or 2 decigrammes in the output of 24 hours. However, such minute traces do not suffice to yield the tests in ordinary use, and we only speak of glycosuria as present when the amount of glucose excreted is such as may be detected by the reduction tests employed in clinical work.

Limit of Tolerance of Glucose.

Even glycosuria of such degree can be induced in healthy persons by the administration of sufficiently large single doses of glucose. In other words, the power of a normal man to dispose of sugar given by the mouth is not unlimited. The limit varies somewhat in different individuals, but it may be stated that on an average 150–200 grammes of glucose are required to cause glycosuria. A smaller dose is needed when the sugar is taken on an empty stomach than when it is taken within a short period after a meal.

The limit of tolerance is different for different sugars. For cane sugar it is much the same as for glucose; for lævulose and lactose it is somewhat lower. As small a dose as 20 grammes of galactose may cause galactosuria, and even as little as a single gramme of arabinose suffices to induce an alimentary pentosuria.

Only a very small fraction of the dose given reappears in the urine, and although with larger doses the output is increased, the percentage remains small, and there is nothing to suggest that all sugar taken beyond a certain amount is excreted unchanged. Van Noorden[17] found that the rate of increase with increasing doses varies widely in individual cases, and Raphael[18] observed the paradoxical fact that some persons appear to deal more efficiently with larger than with smaller doses.

It is a much debated question whether the limitation of the tolerance of normal human beings for glucose indicates that the power of dealing with sugar in the organism is limited and can be overtaxed by introducing an excessive dose of glucose into the alimentary canal, or whether some part of such a dose is introduced into the blood by what may be called a short circuit, and so avoids the metabolic changes to which it is ordinarily subjected in the liver. Naunyn[19] suggested that some part of the glucose taken passes on into the intestine and, entering the lymphatic channels, reaches the blood directly by way of the thoracic duct. The slight hyperglycæmia so induced might bring about the observed excretion in the urine.

In order to put this theory to a crucial test W. Schlesinger[20] ligatured the thoracic duct of dogs whose tolerance for glucose had previously been measured. He found that after a brief period of lowered tolerance, the possibility of inducing glycosuria by the administration of glucose practically ceased in the animals so treated, but that after a month or so the limit of tolerance was re-established, although not at its former level.

On the other hand, facts are coming to light which indicate strongly that the alternative explanation is the correct one, and that the normal limit of tolerance is the outcome of a balance of factors. That the limit may sink conspicuously when certain morbid conditions are present is an established fact, but it would also appear that, in the course of certain diseases, of which myxœdema is one, the limit tends to be conspicuously raised; so that the patient may exhibit no glycosuria after the administration of doses of glucose which would far overtax the tolerance of any normal subject.

The normal limit is far above any test to which it is likely to be put in ordinary life, and it must rarely, if ever, occur that spontaneous glycosuria results from excess of sugar in the diet of healthy individuals; and the supposition that the power of dealing with glucose is not unlimited is compatible with what is known of the working of other metabolic processes in the body.

Lowering of Tolerance of Starch.

This much, at least, is obvious—that a phenomenon which can be induced in any healthy man cannot be looked upon as morbid, whereas deviations from the normal limit, in one direction or the other, may be so regarded.

No dose of starch which can be taken induces glycosuria in a normal subject, probably because it is not converted into sugar quickly enough to overtax tolerance at any given moment. Hence, when a meal of starchy food, of whatever amount, causes sugar to appear in the urine, we are confronted with a definitely morbid phenomenon, and there is much to support the view enunciated by Naunyn, and held by most observers, that the so-called alimentary glycosuria ex amylo, as distinguished from alimentary glycosuria e saccharo, is nothing less than diabetes writ small.

This is so important a matter, and one about which so much apprehension exists, that I shall be pardoned if I dwell upon it for a moment.

The name alimentary glycosuria is often used in connexion with this phenomenon as a sort of diagnostic placebo, to avoid the use of the ugly term diabetes, and I am not disposed to quarrel with such employment of it (although it greatly impairs its scientific value) so long as it is clearly recognised that between the patient who only excretes small quantities of sugar after meals rich in starchy foods and the sufferer from the gravest form of diabetes the difference is merely one of degree, and that the interval between them is bridged over by intermediate cases of all grades. In a sense all diabetes is alimentary, although in the worst cases the response to restriction of diet is very slight.

The fact that a patient is subject to alimentary glycosuria ex amylo often escapes notice. He will probably complain of no symptom suggestive of diabetes, and I have known instances in which examination of a specimen of urine passed at mid-day has revealed its presence, although in repeated examinations of morning and evening specimens no sugar had been found.

I recently had under observation a man, aged 52, who stated that on one occasion ten years previously sugar had been found in his urine. During the following eight years frequent examinations had revealed no sugar, and none had been found by the medical man who sent him to me on account of a wholly different complaint. Some urine passed

[17] Die Zuckerkrankheit, fifth edition, 1910, p. 22.
[18] Zeitschrift für Klinische Medizin, 1899, Band xxxvii., p. 20.
[19] Der Diabetes Mellitus, second edition, 1906, p. 33.
[20] Wiener Klinische Wochenschrift, 1902, Band xv., p. 768.

at my house at 11 A.M. contained a small quantity of reducing substance, which was proved to be dextrose. He then went for a holiday, during which his urine was examined by two medical men, who found no sugar. Three months afterwards sugar was present in every mid-day specimen, but not in urine passed on rising or in the evening.

If this patient has had alimentary glycosuria ex amylo for ten years past it is remarkable that the condition has not become aggravated during that long period; and if, on the other hand, there has been a long interval of immunity, the case is none the less exceptional in its course.

When any doubt exists in connexion with a case of the kind under discussion it may be removed by the administration of a meal rich in starch. To such a meal the subject of alimentary glycosuria ex amylo will promptly respond by excreting sugar.

It is very important that the condition should be detected when present, and that the patient should be treated by a suitable restriction of diet at this so early and amenable stage of his complaint. If left unchecked, the diabetes from which he suffers will sooner or later become aggravated, whereas by appropriate treatment further developments may be postponed.

Such lowering of tolerance of starch is most often met with in men who have reached, or who have passed, middle life, as the initial symptom of the milder kind of diabetes which is common at that period of life. In younger subjects, in whom the diabetic symptoms so often develop in a remarkably sudden manner, such an initial stage, if present, usually escapes notice, and the malady is seldom diagnosed before the glycosuria is already persistent and pronounced.

Lowered Glucose Tolerance.

To return to alimentary glycosuria e saccharo. As we have seen, this symptom is exhibited in some measure by normal individuals, but just as we do not give the name of glycosuria to the excretion of sugar by normal persons, so also the term alimentary glycosuria is only applied to cases in which the tolerance of glucose is depressed below the normal limit.

It is customary when testing tolerance to administer a single dose of 100 grammes of glucose upon an empty stomach, but in many cases far smaller doses—such as 50, 30, or 20 grammes—suffice to induce glycosuria. As a rule, the excretion of sugar ceases after some three or four hours, but it sometimes happens that it persists for several days, a phenomenon which suggests the presence of an important derangement of carbohydrate metabolism.

Lowered glucose tolerance—to employ the least cumbrous name for a condition for which a simple designation is much to be desired—is associated with a variety of morbid states, but, like spontaneous glycosuria, it is capricious in its appearance, even in maladies which are amongst its recognised causes. Of two cases, apparently much alike, this symptom may be present in one and absent in the other.

Febrile disorders are amongst its common causes, and of others may be mentioned pregnancy, acute and chronic alcoholism; certain diseases of the nervous system, some functional and others organic; affections of the pancreas; exophthalmic goitre and acromegaly.

Lowered glucose tolerance is by no means a special feature of hepatic diseases; but, on the other hand, the more recent observations tend to confirm the opinion arrived at by H. Strauss [21] that a conspicuous lowering of tolerance of lævulose, as distinguished from glucose, is an important symptom in such diseases, and one of real diagnostic value in aiding the recognition of lesion of the parenchyma of the liver.

Significance of Lowered Glucose Tolerance.

Divergent views are held on the question whether lowering of glucose tolerance is to be regarded as the initial and slightest manifestation of that error of carbohydrate metabolism which culminates in diabetes, or has a wholly different significance from alimentary glycosuria ex amylo and spontaneous glycosuria. In discussing this question it must be borne in mind that where tolerance of starch is limited that of sugar is also lowered, so that these cases must be excluded from the discussion in which the two phenomena coexist.

If it be the true explanation of the fact that no dose of starch which can be taken excites glycosuria in a normal subject that the time required for the conversion of starch into sugar prevents the overtaxing of the metabolic processes at any particular moment, we may regard the difference as one of dosage, and if it can be shown that in some cases, although glucose tolerance is reduced to a very low level, glycosuria cannot be induced by starch, a strong *primâ facie* case will be made out for the essential distinctness of the two phenomena in some cases. Observations in which tolerance of starch has been tested side by side with that of glucose are not numerous, and more of such are greatly to be desired.

It is a significant fact that J. Strauss,[22] who carried out an extensive series of such observations upon patients suffering from specific fevers, and from alcoholism, by the administration of glucose, and of equivalent doses of starch, found that no small proportion of the patients tested exhibited alimentary glycosuria ex amylo, side by side with lowered glucose tolerance. Van Noorden looks upon J. Strauss's results as affording evidence that in the conditions investigated the potential glycosuria is due to implication of the pancreas.

Raphael,[23] also, who conducted an elaborate research upon glycosuria e saccharo, summed up in favour of the view that between lowered tolerance of glucose and of starch respectively the difference is rather one of degree than of kind.

Some cases of lowered glucose tolerance have developed under observation into cases of diabetes, but it would be of interest to know whether the tolerance of starch was fully tested in the early stages of these cases. That alimentary glycosuria e saccharo may be an early symptom of diabetes is undoubted, the question at issue is whether it should always be so regarded. For a final answer to this question our knowledge does not yet suffice, but this much may be confidently stated, that the fact that a patient shows lowered glucose tolerance in the course of some acute disease with which that symptom is wont to be associated, does not in any way imply that he is likely to develop diabetes later on.

The investigations of Barringer and Roper,[24] who followed up the after-history of a number of patients who had at some time exhibited spontaneous glycosuria, do not really help us to answer the question. They found that those patients who, during the sugar-free period, or after some years of immunity from glycosuria, were found when the test was applied to have definitely lowered glucose tolerance, were much more liable to become diabetic, than those whose tolerance of glucose was found to have returned to the normal level. Thus they demonstrated conclusively the value of tolerance tests in the estimation of the significance of a transitory glycosuria, and that persistent lowering of tolerance is to be regarded as a danger-signal; but their results also tend to prove that a patient may have his tolerance so far lowered that he exhibits spontaneous glycosuria for a time, and yet may be in comparatively little danger of developing diabetes, provided that his tolerance returns later to the normal level.

W. Schlesinger,[25] who is an upholder of the essential distinctness of glycosuria e saccharo, as a phenomenon not necessarily connected with the diabetic metabolic error, regards the excretion of unusually large quantities of sugar after the glucose test as affording evidence of a true diabetic tendency, a view which few will hesitate to accept. He also points out that whereas, when a particular sugar is given in excess some of that sugar appears unchanged in the urine, in some cases in which tolerance is lowered lævulose when so taken induces an excretion of glucose, and this event also he looks upon as an indication of a true metabolic derangement.

If when discussing this subject we take as our criterion of diabetes that the carbohydrate error be persistent as long as the patient lives, we beg the whole question, for, as I hope to show in my next lecture, some cases which exhibit for a time all the features which we regard as characteristic of diabetes, and even some in which the spontaneous excretion of sugar cannot be arrested by a strict dietary, do, nevertheless, end in what appears to be complete and lasting recovery. Unfortunately, these cases are so rare that we are not justified in holding out to our diabetic patients any expectation of so favourable an outcome of their ills.

[21] Deutsche Medizinische Wochenschrift, 1901, Band xxvii., pp. 757 and 786.

[22] Zeitschrift für Klinische Medizin, 1900, Band xxxix., p. 202.

[23] Loc. cit., sub. 18.

[24] American Journal of Medical Sciences, 1907, vol. cxxxiii., p. 843.

[25] Loc. cit., sub. 20.

THE PRINCIPLES OF TREATMENT IN EXOPHTHALMIC GOITRE.[1]

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I HAVE been asked on this occasion briefly to consider the general principles of the treatment of exophthalmic goitre, as it is important that these should be clearly stated as a basis for the discussion on the best means of carrying them into practice by either medical or surgical methods.

Etiology.

It is now generally agreed that the symptoms of Graves's disease are due to a thyroidal auto-intoxication. In Graves's disease the secretory epithelium of the thyroid gland is superabundant, changed in type, and over-active. Whether the secretion which results from this state of affairs is of the same strength and composition as that which is produced in health does not materially affect the problem we are asked to consider on this occasion, as the general symptoms of the disorder are brought about by the circulation in the blood of a large excess of this product, whatever its actual composition may be.

We do not, as yet, know the actual exciting cause of the special proliferative changes which are found in the thyroid gland in exophthalmic goitre. We are aware that the disease may arise under certain predisposing conditions, but these vary in different cases and in many may be wanting altogether. When we are in possession of this information so that we can induce the disease at will in lower animals, the problem of the prevention and treatment of this malady will be greatly simplified.

In the present state of our knowledge the objects we have in view in the treatment of Graves's disease are either to remove the source of the auto-intoxication or to counteract its ill-effects. The principles of treatment are therefore comparable to those which guide us in the treatment of a disease which is due to a local microbic infection, giving rise to a general toxæmia, but more difficult to carry into practice.

In some cases we know that, either as the result of treatment or in the natural course of the disease, the hyperactivity of the thyroid gland gradually diminishes, the symptoms subside, and the patient recovers more or less completely. According to my own experience this may take any period from nine months up to seven or more years, from the commencement of the disease. In some chronic cases a certain amount of tolerance gradually becomes established so that the patient is hardly aware that the disease is still present. Recovery in these cases is the result of an involution of the enlarged gland, due to an atrophy of the redundant epithelium. This atrophy may be either primary in origin or secondary to the development of a gradual fibrosis of the gland, which may even proceed to partial or possible total destruction of the glandular epithelium, as in a case I have recently seen in which the symptoms of Graves's disease were replaced within a few months by those of myxœdema. We are greatly in need of more exact information as to the conditions under which those involutionary changes take place. If we possessed this knowledge we should be in a better position to bring this natural process of cure into operation.

Methods of Treatment.

We shall now briefly review the methods which may be adopted to reduce the morbid activity of the thyroid gland to a normal level or to counteract its ill-effects, reserving the consideration of surgical measures to the last.

General treatment by means of mental and bodily rest combined with a liberal diet, of which milk forms a large proportion, tends to diminish thyroidal activity. Excess of proteid food should be avoided, as Dr. Chalmers Watson's experiments show that the structure of the thyroid gland may be modified by diet. The work of Ehrlich and Wassermann opens up the possibility of efficient remedies being obtained in the future which may have a direct and selective action on the hypertrophied gland. It is not unlikely that arsenic and belladonna, which are of proved utility, act in this way and tend to depress the activity of the secretory cells, just as iodine, on the other hand, exalts it and aggravates the symptoms. With the same object in view attempts have been made to prepare a specific cytolytic serum which would induce destructive changes in the epithelium of the gland without injury to cells in other parts of the body. Unfortunately such preparations are not really specific in action, and if used in adequate amounts they produce degenerative changes in other organs as well, and consequently may do more harm than good. X rays have been employed in order to diminish the gland.

In one of my cases who was under treatment at the Manchester Royal Infirmary 11 doses of X rays were given between Nov. 28th, 1911, and Jan. 5th, 1912, by Mr. A. E. Barclay. On Jan. 9th the right lobe of the gland was removed because one night the patient had a severe attack of dyspnœa with loss of consciousness for 10 minutes. Microscopical examination of sections prepared by Dr. W. Mair from the portion removed shows there is a diffuse interalveolar fibrosis, which, in places at any rate, appears to be of recent origin and to be the result of the action of the X rays. At the time of the operation Mr. A. H. Burgess found the capsule of the gland was unusually adherent to the trachea and surrounding parts. These adhesions were probably also a result of the use of the X rays.

Although in this case no beneficial result was obtained by X ray treatment, the microscopical changes suggest that a more prolonged course of treatment might in time bring about the desired result. The application of a mild, faradic current to the goitre for two or three hours each day possibly acts directly on the activity of the gland, as in many cases it is a useful mode of treatment.

We may endeavour to counteract the ill-effects produced by the excess of secretion in the blood-stream. For this purpose the milk, dried blood, and blood serum of thyroidless animals, especially of sheep and goats, may be employed on the supposition that the products contain some substance which acts as an antidote and neutralises the action of the excess of thyroid secretion in the blood. In many cases we have to resort to purely symptomatic treatment under special circumstances so as to deal with the special crises which arise from time to time in Graves's disease, when special measures may be applied to relieve cardiac, intestinal, bronchial, cutaneous, or nervous crises giving rise respectively to severe palpitation, diarrhœa, bronchorrhœa, sweating, and the like.

Surgical Treatment.

Finally, I will briefly mention some points in connexion with surgical treatment. As the first object we have in view is to reduce the hyper-activity of the thyroid gland, it naturally occurred to many that this could be most successfully achieved by surgical methods. This view appealed rather strongly to me when the pathology of Graves's disease first became understood, but very quickly the hazardous nature of the proceeding became apparent. The first three of my cases in which one lobe of the thyroid gland was excised—in each case by a different surgeon—all died almost immediately after the operation. After this experience I was very reluctant for long to advise any patient to undergo operation, and consequently my personal experience of surgical treatment is limited.

Two methods of surgical treatment are chiefly employed at the present time: ligature of one or more of the thyroid arteries and partial thyroidectomy. On referring to the notes of 300 of the cases which I have seen, 276 of which were women and 24 men, I find that as far as I know only 10 have been operated on. In one case both superior thyroid arteries were ligatured, and in nine partial thyroidectomy was performed. In the first three cases, which were all in women, death occurred shortly after the operation. The other seven recovered from the operation, so that of the cases I have seen in which an operation was performed the mortality has been 30 per cent. Two of these seven were men and five were women.

In one man who had suffered for nine years from severe Graves's disease, both superior thyroid arteries were ligatured by Mr. R. Morison in June, 1907, under general anæsthesia, 4½ years ago. Marked improvement has taken place, so that he can now cycle to and from his place of

[1] A paper read at a combined meeting of the Medical and Surgical Sections and Section of Anæsthetics of the Royal Society of Medicine on Feb. 13th, 1912.

business and do an ordinary day's work, but he is not cured. In the second man, whom I saw in 1909 just before he started for Canada, partial thyroidectomy was performed by Mr. Roberts, of Toronto, in May, 1911, and when I saw him the following September he was quite well and completely cured of the Graves's disease.

Of the five cases in women, in one—that of a single woman, aged 32, in whom there had been a goitre for 12 years with more recent development of secondary Graves's disease—the right lobe was excised by Mr. W. G. Richardson in June, 1907, because she complained of so much pain in it and was anxious to have it removed. The only anæsthetic used was chloroform given through the Harcourt inhaler. At the time the heart was considerably dilated and the pulse 144. She recovered, and her medical adviser, Dr. A. Smith, informs me that she is now quite well.

In another case, that of a girl aged 15 when I saw her, the operation was performed by Sir Victor Horsley, and when last I heard of the patient marked improvement had taken place.

In the case of a woman, aged 32, under my care at the Manchester Royal Infirmary, Mr. W. Thorburn on August 16th, 1910, removed the right lobe of the gland under local anæsthesia. Before the operation the pulse-rate was 130; it is now 76, and she has improved considerably in other respects, but there are still well-marked exophthalmos, some general nervousness, and tremor of the hands. The left lobe is still moderately enlarged, so that she is not cured.

In a recent case in the Manchester Royal Infirmary, already referred to, Mr. Burgess removed the right lobe on Jan. 9th from a girl, aged 18, with severe Graves's disease, because after 11 doses of X rays she had an alarming attack of nocturnal dyspnœa with loss of consciousness lasting for 10 minutes. Ether was given by the open method. Before the operation the pulse varied from 204 to 120. She has recovered from the operation and is now steadily improving, the pulse varying from 120 to 92. In another case Mr. Burgess has also this month removed the left lobe, isthmus, and lower part of right lobe on account of stridor.

Thus in six of the ten cases an operation has been done in order to relieve or cure the Graves's disease, and three of them died. In the remaining four the operation was primarily carried out for the relief of pain or dyspnœa. Of the seven survivors two are cured, four are improved, and one has just recovered from the operation.

In conclusion, I would advocate operation in all cases where there is distinct stridor from compression of the trachea or persistent pain in the goitre. In cases of a mild type I do not consider an operation is necessary. In very severe cases with marked cardiac failure the risk is too great. In a certain number of cases of moderate severity in which no adequate improvement has resulted from medical treatment fully tried for 12 months, a partial thyroidectomy or ligature of the superior thyroid arteries may be advised. The remarkably small mortality from the operation obtained by Sir Victor Horsley, Dr. T. P. Dunhill, Professor Kocher, and others clearly indicates that the grave dangers which formerly made physicians unwilling to advise operation have now been considerably reduced, so that operation can be recommended in a larger number of cases than previously appeared to be advisable.

The chief points upon which we hope to obtain further information by this discussion are the exact indications for operation, the average risk, and the results. In considering the latter and in comparing them with those obtained by other methods of treatment I would emphasise the fact that the prognosis usually given in text-books is too pessimistic, as a very considerable number of cases do either completely or partially recover without operation.

Manchester.

LONGEVITY.—The death occurred at Bexhill on Feb. 12th of Mr. John Rogers, who had attained the great age of 102. He joined H.M.S. *Romney* in 1832, was in the navy 39 years, and had received a pension for 41 years. While living at Camber, near Rye, he was coxswain of the lifeboat there. He had never been laid up in his life until seized with his final illness.

CYSTITIS: ITS CAUSES AND ITS TREATMENT.

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IN reviewing the important subject of inflammation of the bladder it will be shown that cystitis may be due to various pathogenic microbes differing greatly in their immediate action and ultimate results. The various modes of infection and the lesions produced by the different organisms will be examined, and the cystoscopic appearances and the changes produced upon the urine will be described. The complications commonly met with will be considered, and the treatment of all the varieties of the disease will be carefully and very fully discussed.

Causes of Cystitis.

Cystitis, either as a primary affection or secondary to other diseases of the kidneys or bladder, is one of the most common ailments of the urinary tract. Sometimes the onset is so mild and transitory as only to induce a slight increase in the demand to micturate, and in children or adolescents nocturnal incontinence. At other times the attack is ushered in by the most violent disturbance: great frequency in micturition with burning pain at the end of the act, and straining to expel even when the viscus is empty, so that at the termination of the effort blood squeezed from the congested mucous membrane alone escapes. These severe and local symptoms are accompanied by active disturbance of digestion, rigors, anorexia, and, of course, loss of sleep.

Whatever the degree of inflammation, it is immediately due to the propagation of pathogenic micro-organisms in the bladder, the most common varieties being bacillus coli, tubercle bacillus, streptococcus pyogenes, gonococcus, staphylococcus pyogenes aureus and albus, pneumococci, and urobacillus liquefaciens septicus, all of which are pyogenic and, with the exception of the three mentioned first, are urea-decomposing organisms.

Attempts have been made to divide cystitis into two classes—the infective and the non-infective; but while this classification may be convenient for teaching purposes, being contrary to fact, it is most misleading.

It is true that irritation of the bladder may be induced by the toxic action of drugs, such as cantharides, turpentine, and corrosive sublimate, by chemical irritants, and by crystalline deposits, but in the absence of active infective matter the irritation is transient, subsiding very soon after the exciting cause is removed; the urine remains acid and deposits only mucus, epithelium, and perhaps a small quantity of aseptic pus. But while it is universally recognised that microbes are the cause of cystitis, they are innocuous unless certain conditions are provided favourable to their propagation—namely, hyperæmia of the mucous membrane, retention of urine, or injury.

Many circumstances predispose a patient to cystitis by favouring the introduction of microbes or their proliferation after they have invaded the bladder. Under the former may be mentioned injuries to the bladder from sounding, the use of the cystoscope or urethral catheters, influenza, scarlet fever, enteric fever, diphtheria, septic and tuberculous lesions, infection of adjacent organs, and gonorrhœa; while under the latter may be included tumours of the bladder, chronic enlargement of the prostate, stricture of the urethra, foreign bodies in the bladder, paralysis of the bladder, and displacements of the uterus.

Microbes alone may fail to give rise to cystitis unless they have the power of decomposing urea. Tubercle bacilli, bacillus coli, and pneumococci may be found in the urine without any lesion in the urinary tract.[1]

The organisms which invade the bladder may be divided into two classes—those which induce decomposition of the organic constituents of the urine, and those which cause little or no chemical change in these substances. This distinction is a very important one. When organisms which do not possess the power of decomposing the organic constituents of the urine are introduced into the healthy urinary tract they fail to produce any serious effect. For example, a pure culture of the bacillus coli or of the tubercle bacillus may

[1] Renal Cases. By the Writer. James MacLehose and Sons. 1899 P. 146.

fail to induce cystitis when injected into the uninjured bladder, but if separately, or along with them, urea-decomposing organisms are introduced, acute cystitis is sure to follow. When the infection is "mixed" the progress of the disease is usually very rapid.

Excluding cases of catarrh of the bladder, where the irritation is the result of the action of chemical agents or of mechanical irritants such as vesical calculi, inflammation is the result of pyogenic micro-organisms. While aseptic chemical and mechanical irritants may conduce to the formation of small quantities of pus, the pus so formed is free from organisms, and when absorbed does not produce secondary abscesses. While this statement must be accepted, it is also obvious that the resistance of the part subjected to such continuous irritation may be seriously diminished. Consequently an injured bladder, or a bladder with a stone in it, is very liable to become septic.

Sources and Modes of Infection.

The organisms which produce morbid changes in the bladder do not differ from those found in other tissues; indeed, almost all the microbes which are pyogenic in man gain an entrance to the urinary tract, and have been discovered as causes of disease in these parts. The two most frequent sources of infection are from the intestine on the one hand and *viâ* the urethra on the other. In the former, from the blood, the organisms reach the bladder through the kidney or through the lymphatics; in the latter along the urethra.

There may be said to be three modes of infection:—

1. Ascending infection by the path of the urethra, which for obvious reasons is more common in women than in men—for example, in gonorrhœal and coli bacillus infection.

2. Descending infection or hæmatogenous infection, where the organisms are conveyed from a primary focus to the urinary tract by the blood and are excreted by the kidney. This happens in tuberculous, in typhoid, and in coli bacillus infections.

3. Transparietal infection through the lymphatics from the intestine to the bladder, as observed in appendicitis, in dysentery, and internal hæmorrhoids.

The first-mentioned channel of infection is most common in females, and in men the two latter paths are more generally followed.

The question of the mode of invasion, interesting as it may be from a pathological point of view, can only be referred to very briefly. What we desire more particularly to consider are the clinical aspects of the subject. Some notice, however, must be taken of the individual organisms in order to have a proper understanding of their mode of working, and the best methods of repelling their attack are of the first importance to the practical surgeon.

The Individual Pathogenic Organisms.

The *Bacillus coli communis* is by a long way the most common cause of cystitis—close upon 70 per cent. of the cases examined; and in the bladder, as elsewhere, its virulence varies according to circumstances. In some cases its presence causes little or no disturbance, while in other instances its virulence is great.

The bacillus coli, being absorbed into the circulation through lesions in the intestine, is deposited in the kidney or the bladder. This occurs most commonly when the intestinal tract is obviously diseased. It is found, as a matter of experience, that pyelitis, septic nephritis, or cystitis comes on very commonly in the course of convalescence from enteric fever, dysentery, or acute diarrhœa. Any injury of the intestine, or even injury of the tissues in its neighbourhood, seems to be suffcient to promote the emigration. After operations for appendicitis it is not uncommon to meet with transitory hæmaturia as a result of coli bacillus lesions in the kidney or bladder. Probably the microbes pass from the intestine very much in the same manner as serous fluid does, and from the same or similar causes; in fact, the two transudations are often coincident, but their relationship to one another is not fully understood.

The organisms taken as a pure culture from a peritonitis arising from a perforation of the intestine are found to be more virulent than when taken from a healthy intestine; or again, if the intestine be obstructed artificially the activity of the bacillus is also increased. Also, in different cases of pyelitis and cystitis degrees of virulence may be observed, and while the organisms derived from one case on cultivation and inoculation into animals may produce very mild effects, those taken from another case which appears to be exactly similar may induce very grave results. The bacillus coli seems also to have the power of increasing the activity of other bacilli or of rendering their product more harmful.

The bacillus coli produces a hæmolysin and an endotoxin, but the opsonic and phagocytic indices and the agglutination reactions are of little or no value. By staining reactions alone the bacillus cannot be distinguished from bacillus typhoid or bacillus proteus, and to identify it a culture test is required.

When a bladder containing a phosphatic stone becomes infected with bacillus coli the surface of the stone becomes honey-combed and covered with a layer of soft mucus which completely envelops it and protects the mucous membrane, and at the same time the calculus is gradually eaten into and becomes very friable, and on account of the mucous covering is difficult to discover with a sound.

Tubercle bacillus is found in the urine most frequently in tuberculous nephritis, and may cause a secondary infection of the bladder. It is seldom that the bladder is the first part of the urinary tract attacked, but primary vesical tuberculosis is occasionally met with. It is not often encountered as a complication of phthisis pulmonalis, but in association with tuberculous disease of the bones and joints it is frequently seen, and in such cases, the infection being by way of the kidneys, the base of the bladder near the ureteral orifices is first attacked. Indeed, in cases of early tuberculosis of the kidney the appearances presented by the orifices of the ureters and the mucous membrane around them are often the first indication of the renal lesion.[2]

The bladder offers considerable resistance to the attack of tubercle bacillus even when the mucous membrane is injured, as shown by experiments. Rovsing has demonstrated that tubercle bacilli injected into the bladder and allowed to remain often fail to produce a lesion. This explains how it is that in many cases of tuberculous nephritis the bladder remains healthy. But if other pyogenic organisms are present the resisting power of the mucous membrane is greatly weakened, and secondary infection is almost certain to occur.

It is more difficult to obtain the bacilli from urine than from sputum; they are less numerous in proportion to the medium in which they lie; in urine the processes of decomposition destroy them more rapidly, and smegma bacilli are apt to be mistaken for them. Koch, König, Leyden, and others have endeavoured to distinguish these bacilli from one another by staining methods but have failed. Muir, however, says: "We have found that in smegma it can be readily decolourised by a minute's exposure to alcohol, after the usual treatment with sulphuric acid, and thus can be readily distinguished from the tubercle bacillus." The former is non-pathogenic when inoculated into animals.

According to Tilden Brown, the most favourable time to look for the tubercle bacillus is immediately after a hæmaturia. This may be so, but I have found that it is in the samples of urine containing heavy purulent particles that the bacilli are most abundant, and that they are most readily found when the deposit from freshly passed urine is examined by the aid of the centrifuge. The microscope cannot be relied upon to prove a negative. In some instances the bacilli in the urine are so few in number that it is difficult, or almost impossible, to discover them simply by the microscope; in such instances inoculation experiments may help to clear up the diagnosis.

Tuberculosis can be communicated artificially to animals in many different ways—in fact, through any of the channels of access to the body. When tuberculous urine is injected subcutaneously into guinea-pigs or into rabbits it produces a typical tuberculosis within 10 or 12 days.

Normal urine when aseptic becomes absorbed without producing any evil effect, or when septic it may produce a suppurative peritonitis. If, however, the experiment is performed with care, healthy urine produces a negative result, but if the urine contains tubercle bacilli or their spores acute miliary tuberculosis is developed in the course of a few weeks, when the injection is made into the peritoneum, or if the urine be placed underneath the skin a hard tuberculous nodule is formed.

The *streptococcus pyogenes* not infrequently gives rise to septic infection of the urinary tract and brings about diffuse

[2] The Surgical Aspects of Early Renal Tuberculosis. By the Writer. Practitioner, vol. lxxxvii., No. 1, p. 8.

inflammation and suppuration. When present in pure cultures it does not decompose urea, but it is frequently associated with the presence of other organisms possessing that power; consequently it is generally found in alkaline urine. In character it closely resembles the streptococcus of erysipelas, and by most observers the two are regarded as identical.

Pneumococcus infection of the kidney may cause very acute and grave symptoms and sometimes involve the life of the patient. It is a condition which has not been sufficiently recognised, being liable to be mistaken for acute nephritis, but the appearances of the orifices of the ureters are very striking and characteristic, and not uncommonly the disease is limited to one kidney.[3]

The writer has met with a number of cases within the last five years where the disease has been unilateral, and in a few marked improvement has been obtained by incision of the fibrous capsule to relieve tension of the swollen parenchyma. While the renal lesion is usually the most serious, the bladder also becomes infected and an acute cystitis develops. The invasion is never limited to the bladder only, and on cystoscopic examination the hyperæmia is most marked around the ureter orifice of the affected kidney.

We may now consider the micro-organisms which cause decomposition of urea, and are, therefore, found in alkaline urine only.

The *staphylococcus pyogenes aureus* is one of the most virulent septic organisms and is very widely distributed, occurring in almost all suppurations, in normal saliva, in water, in dust, in the air, and especially on the surface of the skin. When it gains access to the urinary passages it rapidly propagates, causes decomposition of urea, and the alkaline urine, by acting upon the mucous membrane, reduces its resisting power and facilitates the entrance of the organism into the tissue.

Staphylococcus pyogenes albus is less malignant than the yellow form, but closely resembles it, and by some bacteriologists is regarded as a variety of the organism described above; it seems, however, impossible to transform the one organism into the other.

Besides those above mentioned, there are many other varieties of organisms found in the urine in inflammatory diseases of the urinary tract, but these are the most important.

Gonococcus is often associated with cystitis, but whether it does by itself cause inflammation of the bladder is still a question unsettled. Doubtless it causes inflammation of the seminal vesicles, which is liable to be mistaken for prostatitis, and gives rise to troublesome symptoms, sexual neurasthenia, spermatorrhœa, occasional pain in micturition or on pressure on the perineum. These phenomena are magnified by the patient, and their treatment may require much care. If the infection become a mixed one the disease is very likely to extend to the bladder.

Mixed infections are generally more virulent than pure ones. For example, a simple gonococcus, bacillus coli, or tubercle infection may for a time remain quiescent or cause little trouble when pure, but if contaminated by any of the urea-decomposing organisms an immediate change is observed by marked increased activity of the disease.

Classification.

The classification of cystitis according to the nature of the infection may be a strictly accurate one from the pathological point of view, but from the practical side it is more convenient to group the cases in relation to the severity of the symptoms—in other words, not according to the individual organisms giving rise to the malady, but according to the amount of disturbance produced by their propagation. As has been already pointed out, the same organism may in one case produce very little discomfort, while in another case the symptoms may be very severe and prolonged.

Cystitis may be (I.) mild, (II.) severe, or (III.) chronic.

I.—*Mild Cases.*

Juvenile incontinence or involuntary nocturnal micturition in children and adolescents is frequently due to a mild infection of the bladder by colon bacilli, which may give rise to symptoms of a general character liable to lead the medical attendant astray as to the cause of the trouble. Following upon an attack of measles, colitis, or appendicitis, or consequent to chronic constipation or persistent diarrhœa, the bladder of a child becomes infected.

Another fruitful source of infection in female infants is napkins. A careless mother or a nurse, in place of supplying clean napkins, simply dries the soiled ones, using them several times without washing. These cause scalding of the perineum and adjacent parts, including the vagina and urethra, followed by symptoms of cystitis. When the attack subsides a certain amount of bladder irritation remains, and as the patient passes from infancy to childhood nocturnal incontinence manifests itself, and very commonly the sufferer is blamed for carelessness not her own by those who should not have allowed the infection to have taken place.

Nocturnal incontinence in young girls (not in boys, with them the trouble is due to other causes), which continues in spite of all care and treatment, becomes a source of anxiety and annoyance to the parents, as well as of discomfort and discredit to the child. During deep sleep urine is passed, and the child is conscious of its escape only when she awakes. The flow is not because of inability of the bladder to retain an ordinary quantity of urine, but rather to undue readiness to contract when the reflex action of the vesicular muscular coat is uninfluenced by the will.

When due to extrinsic causes such as caruncle, fissured anus, rectal polypi, hæmorrhoids, ascarides, thread worms, &c., the infirmity usually disappears when the cause is removed, and in other instances as age advances it becomes less and less troublesome. In a few cases, however, the incontinence continues till puberty or even after that period has arrived. Often these patients are highly impressionable, so-called "neurotic," and this is blamed for the continuance of the "bad custom." It is supposed that the "habit" has been accidentally set up, and its persistence "may result solely from repetition through the force of custom, long after the original cause has disappeared."

While this view may possibly be true in a few instances a more probable explanation is that the nervous symptoms and the incontinence are the result of a common cause—namely, bacillus coli infection of the bladder—the former symptoms being due to a mild toxæmia, the latter to an irritable condition of the neck of the bladder. Cystoscopy shows in many of these cases a congested neck and slight hyperæmia of the mucous membrane, the urine contains an undue quantity of clear mucus, a deposit of epithelium, and bacilli coli. On adopting local treatment, which will be referred to later on, the disagreeable symptoms disappear.

Cystitis of pregnancy is usually met with in young women about the fifth or sixth month, and is moderately acute as a rule but sometimes severe. Those who are familiar with the varying conditions and reactions of urine of different healthy individuals, and of the same person at different times, must have observed that some samples undergo decomposition with great rapidity, while others remain unchanged for a considerable time. This remark refers only to urine which is sterile when passed. The tendency to early decomposition of urine in such cases is due to the excretion containing waste products capable of easy decomposition. Consequently we find that when a woman is suffering from imperfect digestion, nervous disturbance, or constipation, the urine decomposes early. It is probable that during pregnancy the excretion is modified considerably and is rendered a more suitable medium for the proliferation of organisms.

Since the time of the ancients changes in the urine have been noticed, as well as other phenomena having their origin in the glandular system; but even now the particular liability of the bladder to bacillus coli infection during pregnancy has not been sufficiently emphasised. The onset of the attack is generally associated with a history of chronic constipation and engorgement of the colon. The onset is sudden—an acute rigor, discomfort over the bladder and hypogastrium, painful and frequent micturition, temperature elevated and irregular, pulse rapid, and tongue furred. Soon the patient complains of widespread pain in the back, loss of appetite, headache and depression, and all the symptoms of toxæmia. On examination complaint is made of pain on pressure over the kidneys and bladder. The kidneys are found to be enlarged, and there are tenderness and rigidity of the lumbar muscles, and leucocytosis, polymorphs, and red blood corpuscles show evidence of anæmia. The urine is acid, smoky, contains some albumin, pus, and squamous

[3] See Brit. Med. Jour., March 31st, 1906.

epithelium. The odour is not offensive at first, but on standing soon becomes so.

These cases generally recover in a short time from the acute symptoms, but they are referred to here because, unless care be taken to effect a complete cure, women so attacked during pregnancy are liable to suffer after delivery from continued irritation in the bladder, which is only too liable to be left unheeded. Often the symptoms are so severe that the family doctor suspects stone, but not finding one on sounding, satisfies himself, but not the patient, with palliative treatment, which is totally inadequate for the condition. An examination shows the symptoms to be caused by inflammation of the neck of the bladder or the urethra. This disease may also cause caruncle, but when it is removed the symptoms are not completely relieved.

Chronic inflammation of the neck of the bladder and ureteritis, beginning in an attack of cystitis during pregnancy or just after delivery, is the most common cause of bladder irritation in women. It is due to bacillus coli infection, and must be regarded as one of the most fertile sources of ascending pyelitis and pyonephrosis.

II.—*Severe Cases.*

In acute cystitis the symptoms are constitutional and local, and may be due to pneumococcus, streptococcus, bacillus coli, gonococcus, or tubercle bacillus. The onset is sudden, often with a rigor, the temperature is raised and may be distinctly febrile; the pulse is rapid, and the tongue is coated, the digestion disturbed, the stomach and intestine distended with gas, and the bowels constipated.

The patient is unable to sleep because of the pain and frequent calls to micturate. As soon as the desire comes it must be gratified—the urgency is sudden and imperative. During the act the discomfort is great, but it is at its termination and for a variable time thereafter that the burning pain is most severe. The patient not only strains to get rid of the last drops of urine, but there is tenesmus.

This is the most important symptom. The bladder contracts powerfully, but the sphincter contracts as well, so that for a time nothing happens; the viscus cannot be emptied. Then the spasm at the neck of the bladder yields for a moment or two, and a few drops of urine are permitted to escape. Repeated evacuations of this kind occur and are associated with severe pain in the rectum, the perineum, and the point of the penis. After the viscus has emptied itself its muscular wall continues to contract and squeezes from its congested mucous membrane a few drops of pure blood.

Between the acts of micturition the patient suffers from a dull, aching pain over the pubis, which is increased on pressure and by the gradual filling of the bladder, and as the organ becomes distended a sense of weight and tenderness develops in the perineal region.

The urine is either acid or alkaline, according to the nature of the infection, and not, as it sometimes is stated, according as there is free escape or obstruction to the flow of urine. If the organism be a urea-decomposing one the urine is alkaline, cloudy, contains a large quantity of mucus and pus, some blood which is not readily thrown down, and probably also crystalline deposits of phosphates and urates of ammonia; but if the inflammation be due to the presence of bacillus coli, tubercle bacillus, or pneumococcus the urine remains acid for some time after being passed, is cloudy, contains little mucus or pus, and what blood is present deposits readily, along probably with oxalate of lime or uric acid crystals.

Cases of acute cystitis do not call for a cystoscopic examination unless the presence of a foreign body is suspected. The cystoscopic appearances depend upon the stage of the disease and the character of the infection, but these will be described later on.

Cases of acute cystitis generally recover under suitable treatment in ten days or a fortnight, but occasionally while the constitutional disturbance subsides the local symptoms continue in a less pronounced form. Should this be so an inquiry must be made as to the cause. There may be some obstruction to the escape of urine from the bladder—stricture of the urethra or enlarged prostate in the male, displacement of the uterus in the female, and vesical tumour or stone in both sexes. Or, as is frequently found, the urine remains infected, and unless careful local treatment is adopted the disease becomes chronic.

III.—*Chronic Cases.*

Chronic catarrh of the bladder is often the result of some blockage to the escape of urine; but, on the other hand, not infrequently it is the cause of obstruction.

Gradually increasing hindrance to the escape of urine leads mechanically to certain changes in the bladder, quite independent of any inflammatory action. The pathology may be considered according as we have: (1) Obstruction without inflammation; (2) inflammation with obstruction; and (3) inflammation without obstruction.

1. *Obstruction without inflammation* of the bladder is probably best seen in chronic cases of urethral stricture or enlarged prostate. In studying the changes care must be exercised in selecting cases where there has been no history of bladder trouble, and where catheter specimens of the urine are sterile, otherwise the problem becomes confused. Certain changes may be induced by obstruction alone, others only when the blockage to the escape of urine is associated with infection of the bladder. Simple obstruction to the escape of sterile urine leads to three changes only—dilatation of the bladder, atrophy of the mucous membrane, and sometimes to moderate hypertrophy of the muscular wall. Stagnation alone cannot cause cystitis; it predisposes to it only.

2. When the *obstruction is complicated by infection* of the bladder even to a mild degree, as seen in some forms of bacillus coli invasion, the retardation to the escape of urine produces graver changes. Not only are there calls for increased power of expulsion, which is met by hypertrophy of the muscular coat, but, acting upon an inflamed and softened mucous membrane, increased tension of the urine within the bladder during micturition forces the mucous membrane outwards between the muscular trabeculæ, which form a prominent network. By this process the interior of the bladder may become very irregular and small adventitious sacs may project beyond its wall.

3. *Inflammation of the bladder* is marked by hyperæmia of the mucous membrane and rapid cell proliferation in the connective tissue. This produces thickening of the whole wall of the viscus, together with fatty degeneration of the muscular elements, so that the usual trabecular appearance may be obscured by the thickening of the mucous membrane. The cavity of the organ may undergo considerable contraction, and when exposed through a suprapubic wound as much as a third of an inch of bladder wall may require to be cut through before the cavity is opened. The perivesical veins are found to be greatly gorged and the fat around the organ increased in amount. If the organisms are urea-decomposing ones the surface may become encrusted with phosphates and eroded. Usually ulceration indicates either tuberculous or malignant disease, especially if the ulcers are large in size or irregular in form.

Cystoscopic Appearances.

Cystoscopic appearances vary according to the nature of the infection, the stage of the disease, and the complications accompanying the cystitis.

In *mild bacillus coli infection*, such as gives rise to nocturnal incontinence in girls and young women, or in that so often associated with pregnancy, comparatively little change can be seen in the appearances of the interior of the bladder. The most notable lesions are congestion and swelling around the neck of the bladder and in the area of the trigone; elsewhere the mucous membrane is often anæmic, and here and there may be noticed little islands of less congested mucous membrane.

When caused by *gonococcus* the mucous membrane is deeply congested, swollen, and thrown into irregular folds. This is most marked close to the neck; elsewhere the mucous membrane may be simply streaked, and here and there may be seen small submucous hæmorrhages.

In *acute cystitis from pneumococcus* the infection of the bladder is always secondary to that of the kidney, and as a rule the inflammatory changes are not very marked, being limited usually to the orifices of the ureters and the trigone. The vessels are very distinctly seen, being clearly mapped out; the congestion is patchy, but there is not much œdema or swelling of vesical mucous membrane. There is no ulceration or hæmorrhage.

Acute cystitis arising from streptococcus infection differs from those above described in that the inflammation is more widespread. The urea-decomposing organisms rapidly set up serious changes in the bladder, and if the condition be

not relieved within a short time it may lead to very serious consequences. The meatus is usually contracted, the mucous membrane swollen, congested, and pouting from the opening so that the cystoscope is introduced into the urethra with difficulty, even although under normal conditions the lumen of the canal may be good. The urine is blood-stained, and on attempting to introduce fluid into the bladder it is at once expelled. By using an anæsthetic a view may be obtained, when the whole surface of the mucous membrane will be seen to be of a dark-red or purple colour. It is swollen, often numerous submucous hæmorrhages are seen, and in some places ulceration may have taken place.

In *chronic cystitis due to bacillus coli* the symptoms are frequently troublesome and difficult to get rid of, but as a rule the changes seen in the bladder are not serious; indeed, these are often surprisingly slight, and may be limited to the base and neck. Patchy congestion without much thickening of the mucous membrane is the most common change from the normal, and unless the observer has considerable experience the lesion may escape notice. The bladder may be infected for years with a mild variety of bacillus coli, giving rise to much discomfort, without showing very obvious evidence of disease beyond what has been described above until enlargement of the middle lobe of the prostate leads to obstruction. This change in the prostate is very commonly preceded by a bacillus coli invasion of the bladder. In the majority of cases, however, the mucous membrane is congested and covered with thin flakes of muco-purulent material.

In *primary tuberculous cystitis* the vessels ramifying the mucous membrane are obscured and the cytoscopic field is often ill-defined, probably due to œdema of the mucous membrane. The surface may be unduly pale elsewhere than in the immediate neighbourhood of the tuberculous infiltration. The deposit may be in the form of short bands, or in irregular patches which are generally covered with thin pale flecks of mucus or necrosed mucous membrane. When these are removed by washing an irregular eroded surface is seen, surrounded by a zone of hyperæmia. These tuberculous lesions are most commonly observed on the posterior and superior aspects of the bladder. Little tuberculous pustules may be seen or small caseous masses.

Chronic tuberculous cystitis presents a very varied appearance to the cystoscope. In cases of primary tuberculous cystitis the mucous membrane may be moderately injected and the vessels in its walls more numerous than normal. Extending along the floor of the bladder there may be a pale mass not unlike œdematous granulation tissue, and in it a number of small, white, or grayish yellow nodules or caseous points, some of which may be breaking down and discharging flaky pus. Or the lesion may appear as small caseous masses covered by very thin mucous membrane. These nodules may be round, oval, or sausage-shaped, the most prominent part being almost white in colour, while the immediate surroundings are bright red and contrast markedly with the anæmic mucous membrane of the bladder. Or the tuberculous process may begin by the formation of tubercles in the mucous membrane, and these, breaking down, form in a typical manner the so-called lenticular ulcers characterised by a flat base covered by caseous matter and sharp ragged borders, within which little miliary nodules are situated.

In the earlier stages of secondary infection irregular patches of hyperæmic mucous membrane are seen in the trigone or neighbourhood of a ureter orifice, and are covered by grayish-white flakes partly loose, partly adherent to the eroded surface. In other areas there may be small ulcers, covered by sloughs, while the margins of the ulcer are deeply injected and of a bright red colour. The smaller ulcers may be rounded, with minute caseous areas in their centre.

In the more advanced cases of tuberculous disease the whole of the mucous membrane becomes thickened and more or less eroded, the ulceration is widespread, and the ulcers vary much in form and appearance. They are, however, generally rounded and encircled by rings of deeply injected mucous membrane, covered with blood-clot or by bright yellow sloughs. The necrosed patch may appear of a bright green colour and have an irregular yellow ring close to its margin. In extreme cases, where a mixed infection has taken place, almost the whole surface of the mucous membrane may be destroyed.

While at first circular, by coalescence the ulcers may acquire various irregular forms. Their favourite seat is—probably on account of the mode of infection—the trigone and fundus of the viscus. In 73 cases the situations occupied were: the trigone, 21; the orifices of the ureters, 23; the base, 12; the posterior wall, 10; the neck, 4; and the anterior wall, 3.

The Urine.

In the beginning of a cystitis, especially when due to infection by bacillus coli or tubercle bacillus, the urine is little changed from normal; but, if the inflammation be acute, red blood corpuscles, epithelium from the bladder, and the organisms causing the irritation will be found. Also, in practically all cases the quantity of mucus is increased—to a slight degree in infection by the organisms found in acid urine; very greatly increased if the urea-decomposing organisms be present.

Pyuria.

Pyuria is the most important physical sign of cystitis as well as of inflammatory lesions in other portions of the urinary tract, and for diagnostic purposes it may be well to study the appearance of pus in the urine in detail.

The aspect imparted by the addition of pus varies according to the amount present and the character of the other morbid constituents in the urine. In cases where the pyuria is due to septic lesions of the kidney only the pus appears as a thick, opaque, creamy sediment, which on standing is rapidly and almost completely precipitated from an acid urine; the supernatant fluid is comparatively clear, is free from mucus, and does not decompose rapidly. On the other hand, where the pus is derived from the bladder alone, or in conjunction with a renal lesion, pus is not deposited quickly; when it falls it is precipitated along with glairy mucus, the urine in which it remains partly suspended is alkaline, and decomposition often begins before the urine escapes from the bladder.

The time at which the pus appears in the stream should be ascertained if possible. The appearance of pus at the beginning of micturition, during the whole flow, or at the end of the act only, lends additional significance to the symptom. For differential diagnosis the three-glass test is the best. The patient should first pass into glass A an ounce of urine, into glass B the bulk of the contents of the bladder, and into glass C the last ounce or so. These three samples should be examined separately.

Suppose the patient has a posterior urethritis or chronic prostatitis, the muco-purulent matter lodged in the urethra is washed into the first glass, while the second sample is free from pus or blood. In cases of cystitis the amount of foreign matter is the same in all three samples, unless when there is ulceration at the neck of the bladder or a stone is present. In these circumstances the last few drachms of urine may contain more blood or pus than that passed earlier.

Pus from the urethra, as in hæmaturia from the same situation, escapes independently of micturition, or is only mixed with the first few drops of urine—in fact, together with the presence of pain in the region is usually sufficient to determine its origin. In such instances the quantity of pus is usually small, and appears in flakes or threads. These are casts of ducts leading into the urethra, or threads of pus and macerated epithelium from granular patches swept away in the first portion of the stream. These urethral casts or shreds must not be mistaken for somewhat similar discharge occasionally observed in tuberculosis of the urinary tract. When urethral in origin they can be expressed from the canal before and after micturition. When the inflammation is situated in the posterior part of the urethra it may give rise to vesical irritation and some obstruction to micturition. The diagnosis can generally be cleared up by pressure upon the urethra in the perineum or rectum towards the end of micturition, when pus is found to exude.

It is otherwise in *catarrh of the bladder*, in which case the pus only escapes mixed with the urine; it is more or less abundant, and is accompanied by a number of large vesical epithelial cells. Vesical catarrh is generally associated with considerable pain on micturition and inability to retain urine for any length of time. A small quantity of pus in an acid urine is not necessarily of much significance, as it may be due to the slight catarrh caused by bacillus coli seen so frequently in uterine and ovarian disease, but it may also be one of the earlier symptoms of tuberculosis. The urine is generally of a pale greenish-yellow colour and the pus is

deposited on the bottom and sides of the glass in waves, the thickness of which diminish from below upwards. When the irritation is more severe, and especially when due to the action of urea-decomposing micro-organisms, not only is the quantity of pus increased, but much mucus may be secreted. So long, however, as decomposition does not occur, the pus and mucus separate as distinct deposits on standing, but if the urine becomes alkaline before evacuation the pus becomes thick and glairy, and remains suspended along with the mucus. To establish the fact that there is cystitis is not sufficient; the cause of the altered condition must be determined, and this may be done by a cystoscopic examination.

Hæmaturia.

Hæmaturia may be present or absent in uncomplicated cases of cystitis, and, as a fact, is not of so great diagnostic value as pyuria. It is important to observe the time at which the blood appears in the stream, and in order to do this it is necessary for the surgeon to see the patient urinate, and to observe whether the colouration is equal during the whole continuance of micturition, or is more abundant at the beginning or at the end of the act. The appearance of blood at the beginning of micturition, the remainder of the flow being clear, may be an indication of two distinct conditions—the lesion is either in the prostate, close to the neck of the bladder, or a malady or injury is present in the urethra.

In some lesions of the prostate the blood may pass into the urethra and accumulate there; so also in lesions of the first portion of the urethra the blood may flow backwards into the bladder and mix with its contents. When the blood originates in the urethra and accumulates there, or when it escapes from the prostate and flows into the urethra, the hæmaturia is limited to the beginning of micturition, but if the quantity of blood be great and flows backward into the bladder and mixes with its contents, then the whole of the urine becomes more or less coloured. Again, in a lesion at the neck of the bladder giving rise to hæmorrhage the hæmaturia is not limited to the beginning of micturition, but blood is also observed to escape at the end of the act. This is easily explained: between the acts of urination the blood accumulates in the urethra or close to its internal orifice, and is expelled with the first few drops of urine only, that following being clear; but again, before complete contraction of the bladder occurs a fresh hæmorrhage is induced, which shows itself in the urine last ejected.

When the hæmorrhage is due to injury or disease of the urethra the nature of the lesion is generally clearly indicated by the circumstance that the blood is observed to escape quite independently of micturition; sometimes, indeed, blood is seen to flow from the meatus spontaneously. In cases of tumour of the bladder, and also in vesical calculus, the hæmorrhage is most profuse at the end of micturition.

In acute cystitis the hæmorrhage is not severe, although almost pure blood may escape at the end of the act of micturition; but in chronic inflammation with ulceration large quantities of blood may be lost, and is ultimately mixed with a highly purulent and decomposing urine. In many cases of hæmaturia the only abnormal constituent in the urine is blood, while in other cases it is mixed with pus, mucus, tuberculous material, portions of tumours, or micro-organisms. The mixture of the blood with deposits of another kind requires only to be mentioned here. The three most common are pus, mucus, and tuberculous débris.

If the urine is placed in a conical glass and allowed to stand for a few hours, and the glass is then held up to the light, if pus be present in any great amount the deposits will be found in distinct layers like geological strata; the bottom of the glass is occupied by a yellowish deposit which may be more or less blood-stained pus, or, in some cases of renal pyuria, the pus may carry down almost all the blood corpuscles so as to leave an almost quite clear supernatant fluid.

When mucus is present, on the other hand, not uncommonly the blood corpuscles may be thrown down first, forming a layer at the bottom of the vessel, and following on this may be seen a layer of glairy gelatinous material, which may have a reddish tint or may contain a multitude of minute bloody streaks which intersect it and penetrate into all parts of this gelatinous layer. In such cases the hæmorrhage is usually due to some lesion in the bladder, and the presence of such an amount of mucus is generally indicative of a more or less acute vesical catarrh from infection by urea-decomposing organisms.

The tuberculous deposit can only be distinguished by microscopic examination or by inoculation experiments. Beyond demonstrating the presence of blood-casts of the uriniferous tubules, the microscope may reveal the existence of other elements of consequence in the deposit. For example, the character of the epithelium as derived from the renal parenchyma, from the pelvis, the ureter, or the bladder may greatly assist one in diagnosis; or, on the other hand, should the urine contain small fragments of tumours, parasites, or bacteria the hæmorrhage may be explained.

Complications.

Complications of cystitis are various; some may be regarded as causes, others as effects of the inflammation.

For example, a *calculus* may be either the effect of cystitis, or the cause. Subacute or chronic cystitis has existed for a considerable time; there may be inflammatory enlargement of the prostate as the result; small hæmorrhages occur and a calculus forms around a blood-clot. In such a case the removal of the stone does not cure the cystitis—further treatment is required.

On the other hand, a stone enters the bladder from the kidney; after an interval symptoms of irritation develop—are increased by exercise and relieved by rest. Over-exertion sets up an acute cystitis, the urine is acid, the patient experiences immediate benefit from complete rest, and removal of the stone is at once followed by cure.

The same remarks apply to *enlargement of the prostate.* The cystitis may be primary, leading to an inflammatory increase in the size of the gland, or the obstruction and stagnation caused by hypertrophy of the prostate may predispose to septic infection of the bladder. When the former condition exists the rest obtained by a suprapubic drain generally effects a cure, whereas in the latter removal of the prostate is indicated.

Urethritis involving the upper third of the canal is a very common cause of painful and frequent urination in women, and can only be detected by examination with the urethroscope. When discovered and suitably treated an immediate cure is effected. This will be referred to under treatment.

Hypertrophy of the muscular wall of the bladder has already been mentioned as a result of chronic cystitis, but while the two conditions are frequently associated, as a rule there is added to the inflammatory changes obstruction to the escape of urine. Two forms of hypertrophy, the eccentric and the concentric, are described. In the former the capacity of the bladder is increased, in the latter it is diminished, but in both the trabeculæ may dilate and extend towards the serous coat forming little pockets. These diverticula are of clinical importance, as they greatly complicate the treatment of cystitis.

Also, *sacculation of the bladder* is a most serious complication in all operations upon the viscus; it is unfavourable in lithotomy, and in lithotrity is a source of danger as well as a cause of failure. The reason is easily found.

As a rule, sacculated bladder is met with in cases of long-neglected retention of urine, from chronic stricture, enlarged prostate, or other obstruction to the exit. This not only calls for increased power of expulsion, which is met by hypertrophy of the muscular coat, but also means greatly increased tension of the urine within the bladder during micturition. The hypertrophy of the muscular bundles is easily seen with the cystoscope; they raise up the mucous membrane in elongated ridges, interlacing with one another. But while the muscular trabeculæ form a prominent network, little spaces are left between them where the mucous membrane is badly supported. Consequent upon high tension of the urine during micturition, the inflamed and softened mucous membrane is forced outwards, and ultimately becoming free of the muscular coat, a sac projects beyond the wall of the bladder.

This adventitious sac, having no muscular wall, is not emptied during micturition; the urine in it decomposes and inflammation follows. There is a rapid proliferation of soft connective tissue which steadily yields to the internal pressure, and ultimately the secondary sac may assume proportions equal to that of the bladder from which it originated. The sacs may be numerous but small, or they may be few in number and large in size. In both circumstances they may

become the depositories of decomposed urine, which cannot be washed away or spontaneously evacuated.

To the surgeon the danger and difficulties associated with sacculated bladder are numerous. The retained decomposing urine produces toxic effects very prejudicial to the welfare of the patient, in view of an operation. Not only cystitis, but even peritonitis, may be induced as a result of even trivial interference with the bladder, and when the walls of the sac are attenuated rupture of its wall may be readily caused by undue distension by urine or by fluid used in washing out the bladder.

Instances are recorded in which the diverticulum has protruded into the vagina and contained a calculus which was removed, the sac excised, and the neck ligatured with a successful result, and the writer has published several cases where calculi have been completely hidden for a time in vesical diverticula. During the operation of lithotrity fragments of the stone are very liable to find their way into these recesses, where their removal becomes impossible by any process of washing. On account of the decomposition and stagnation of the urine large-sized calculi are liable to form, or a vesical stone may drop into the pouch and escape detection with the sound or even with the cystoscope.[4]

Atony of the bladder.—The power of the bladder to expel urine may be diminished or lost as a result of atrophy of the muscular coat, and the walls of the organ become expanded, thinned, and weakened. This may occur in the absence of any mechanical obstruction, and is due to vascular, myogenic, neurogenic, or toxic causes—most commonly the latter. It is frequently met with in elderly men, and is liable to be attributed to the prostate, if that organ is at all enlarged, even although the gland is not causing obstruction. They are veritable prostatics without prostatic obstruction. The bladder is void of trabeculæ, but its wall is sclerosed and the muscular elements degenerated.

Pericystitis may arise in connexion with diverticulum of the bladder and may be due to exudation of the contents of the viscus through its attenuated walls or to rupture of the pouch. The exudation may become absorbed, but as a rule it goes on to suppuration. The attack is associated with fever, pain, and often with retention of urine caused by displacement of the bladder, the result of pressure.

Palpation detects a swelling above the symphysis, or posteriorly through the vagina, or in the male through the rectum, and when the bladder is emptied by catheter the swelling and percussion dulness persist. When the lower aspect of the bladder is involved the exudation may obscure the anatomical outline of the prostate or of the seminal vesicles, and, when a sound is passed into the bladder the viscus is found to be lifted away from the rectum. In some instances the perivesical abscess may rupture into the intestine and a fistula becomes established. When this happens the urine will contain fæcal matter and gas will find its way into the bladder.

The renal complications of cystitis are always serious and frequently the immediate cause of death. The organisms are, to begin with, parasitic to the bladder alone, and they or their toxins are not absorbed into the body of the host in sufficient quantity to cause serious disturbance until some other agency supervenes—a mixed infection occurs, the patient is attacked by some debilitating disease such as influenza, he has been called upon to retain urine beyond the normal limit, or he has sustained an injury. Any of these, among many other causes, may be the determining influence in exciting a sudden extension of the infective processes.

Infection may pass upwards along the lumen of the ureter, or by the lymphatics, and induce secondary inflammation of the pelvis or of the parenchyma of the kidney. Very acute pyelonephritis may follow upon infection from old-standing disease of the bladder, so that mild sepsis of the lower portion of the urinary tract, although of no immediate danger in itself, by threatening the kidney it is a continual menace to the life of the patient.

(To be concluded.)

[4] Demonstration of a Series of Cases of Disease of the Bladder, Glasgow Medical Journal, September, 1907.

Sir George Beatson, K.C.B., will deliver a lecture at the Medical Graduates' College and Polyclinic on Tuesday next, Feb. 27th, at 5.15 P.M., on "Treatment of Acute Appendicitis: When and How to Operate." The lecture will be open to all members of the profession.

THE INTESTINAL FLORA.

BY A. DISTASO, D.Sc.,

DEMONSTRATOR OF BACTERIOLOGY IN THE ROYAL INSTITUTE O PUBLIC HEALTH.

I. COMPOSITION OF INTESTINAL FLORA IN NORMAL STATE.

VERY little is known of the composition and of the functions of the normal intestinal flora of man. I propose here to give a brief summary of the results of my researches, which extend over a period of three years, and the details of which will appear soon *in extenso*.

The practical result which I aimed at was to enable one by the simple microscopical examination of fæces to recognise the predominance of one micro-organism or another, and thus to be able to form an opinion of the way in which the flora acted. Here it is better to deal with groups, since many organisms of the intestinal flora closely resemble each other in their biological properties.

The following are the chief types which I have marked out :—

Chief Types of Intestinal Flora.

A. *Gram-negative Bacilli.*

1. *B. coli group* (B. coli Esch., Durham, B. lactis aerogenes, B. acidi lactici, B. paracoli, B. proteus, B. pyocyaneus, &c.).
2. *B. variabilis group* (anaerobic bacilli with round extremity).
3. *B. rigidus group.*
4. *B. thetaiotaomicron group* (bacilli very polymorphic, with elliptical form).
5. *B. praecutus group* (bacilli swollen in the middle and pointed at the extremities).

B. *Gram-negative Cocci.*

These can be classified under three groups :—

1. *Sarcina citrea group*, very common in the mouth and in the fæces, similar in appearance to the gonococcus.
2. *Diplococcus orbiculus group*, which are strictly anaerobes.
3. *Parvulus group*, strictly anaerobic small cocci.

C. *Gram-positive Bacilli.*

1. *B. acetogenes group.*—The greater number of the Gram-positive bacilli belong to this group. The B. acetogenes β is the chief representative, since the B. bifidus and acetogenes α are very rare in the fæces examined in London.
2. *Streptobacillus group.*—This microbe always exists in the intestinal flora.
3. *Diplob. acuminatus group.*—An anaerobic bacillus. It produces butyric acid.
4. *B. perfringens group.*—An anaerobic microbe. It produces enormous quantities of butyric acid.
5. *B. œdematis maligni group*, with the B. sporogenes (Metchnikoff).
6. *B. rodella group.*—Anaerobic group of very long bacilli.
7. *A lemon-shaped bacillus*, which is stained by iodine and is described by the author as being a butyric acid producing microbe. It has not yet been obtained pure.

D. *Gram-positive Cocci.*

1. *Enterococci group*, in chains, less frequently diplococci.
2. *Small cocci group.*—Are also to be seen corresponding in size to the coccus Banani, to the staphylococcus pyogenes, and to the staphylococcus asaccharolyticus.
3. *Streptococcus intestinalis group.*—This group contains the streptococci of Hirsch-Liebmann.

In addition three kinds of *spores* are to be found.

1. Oval spores, rather large, which may belong to the B. sporogenes and to other
2. Round spores, which may belong to the B. putrificus (Bienstock-Tissier) or to the bacillus of Rodella and to the B. alkaligenes anaerobicus.
3. Very small spores, strongly refractile, belonging to the B. perfringens.

These species may be identified by simple microscopical examination.

It is very evident that, as the nitrogenous substances diminish, the bacteria in the intestine become more abundant and the species more numerous. This fact is difficult to explain if we do not consider a factor of great importance—intestinal stasis. When this is present the conditions which obtain in the colon may be compared to those in the test-tube. Another factor in the large intestine is the absence of sugars. I have shown in my paper on intestinal putrefaction that the large bowel does not contain either albumin or peptone. It contains only derivatives of the latter substance, and the microbic flora present in the large bowel must adapt itself to these surroundings. We find on studying the biology of the organisms that it is the indol-forming organisms which predominate.

From this point of view I have classified the intestinal microbes as follows:—

A. *Non-Indol-forming Organisms.*

1. *Amylolytic organisms.*—They produce sugar from starch.
2. *Saccharolytic organisms.*—We divide this group according to the principal acid found in the culture—
   (a) *Acetogenic.*
   (b) *Butyric.*
   (c) *Lactic-acid-producing*, but this group does not exist in the intestinal flora.
3. *Asaccharolytic organisms.*—These do not touch the sugars with the possible exception of a very slight action on glucose.
4. *Gelatinolytic.*—These dissolve gelatin, but they do not act upon coagulated albumin.

B. *Indol-forming Organisms.*

1. *Amylolytic.*
2. *Saccharolytic.*
   (a) *Gelatolytic*; (b) *Peptolytic.*
3. *Asaccharolytic.*
4. *Proteolytic.*

This classification allows us to group the organisms according to their functions—that is, those which produce indol and its congeners and those which have not this property. Moreover, we are enabled to include in definite groups those organisms having similar biological properties with respect to their functions *in vivo*. This grouping leads to the important fact that the organisms of groups having similar biological properties can replace one another, which I have found to occur in changes of nutrition and in pathological conditions. (In the human flora I have never succeeded in finding organisms which act upon cellulose. In fact, I do not believe any exist, for on inoculating tubes with filter-paper (Berzelius) in a saline medium the paper is broken down, but not dissolved.[1])

The organisms mentioned above are constantly present in the intestinal flora of adults in the normal state; they are also found in the first stage of intestinal putrefaction. It may be objected that this flora contains organisms capable of hindering putrefaction—for instance, the B. coli. This, however, is difficult to conceive, since in the colon there are no sugars, and therefore these microbes lack an essential requisite in order to exert their beneficent action. I explain more fully in another paper the value of this fact with reference to the intestinal flora.

The flora of the normal adult, therefore, is certainly harmful, and, far from defending the organism against infection, it may be said to help it.

It appears from the peculiar grouping of the microbes found in the colon that the digestive functions as carried out in the large bowel are different from those that take place in the rest of the intestinal tract, because in the colon indol and other bodies belonging to the heterocyclic and aromatic series are elaborated and absorbed. These bodies, when absorbed, severely tax the functions of the body and therefore of the liver. This fact may throw some light on the etiology of diseases of the liver.

Moreover, these bodies elaborated by the normal intestinal bacteria are not able to induce peristalsis, in which they differ from those produced by the intestinal flora of breast-fed babies; on the other hand, they may have an inhibitory action on intestinal peristalsis or may even irritate the mucous membrane.

These facts lead to the conclusion that the normal flora in adults, besides exerting no beneficent action, may be of itself, under certain conditions, distinctly dangerous, predisposing to constipation or diarrhœa. This I propose to prove in the following remarks.

II. On the Intestinal Flora in Constipation.

In the foregoing observations on the intestinal flora of normal adults I have established the fact that the indol-forming organisms are the most prominent and therefore they cannot be considered as harmless.

The researches which I have undertaken, and the details of which will shortly be published, demonstrate the relations between the intestinal flora and constipation on the one hand, and on the other the relations between the processes which go on in the large intestine and the resultant auto-intoxication. From this it follows that since constipation gives rise to these consequences, and since these poisons are elaborated in the colon, the exclusion of the viscera must be followed by the disappearance of constipation and of the resulting intoxication.

I have been twice sent over to England by Professor Metchnikoff in order to investigate from this point of view the patients operated upon by Mr. W. Arbuthnot Lane,[2] but before discussing the results arrived at it is necessary to establish what takes place in the intestine in cases of constipation. Here are briefly the results of my researches.

The composition of the flora of a constipated man is quite peculiar, the following being the chief features: (1) the fæces are dry and somewhat like goats' excrement; (2) the total number of bacteria is less than normal; (3) Gram-negative forms are almost entirely absent; and (4) spores are very abundant.

In view of these observations it was natural to ask what takes place in the intestine in constipation. To answer this query I have carried out the following experiments. Portions of normal fæces were incubated at 37° C. To some of these sterile water was added, whilst others were incubated without addition of water. In the last case the Gram-negative bacteria died off, spores became abundant, and Gram-positive bacteria could be seen here and there. The features of this flora are identical with those of the flora of constipated persons. The same results were observed in the fæces that were kept moist with the addition of water, only they took place more slowly. Thanks to the kindness of Mr. Lane—who furnished me with three cæca—I have been enabled to ascertain that the same conditions obtain in the cæcum.

The bacteria therefore existing in the proximal part of the large intestine are identical with those to be found in the distal part, but in the latter they are far less abundant and more spores are present. Hence I conclude that a process of putrefaction goes on in the intestine of constipated persons which is similar to that which is to be observed *in vitro*. This demonstrates clearly that the phenomena that are going on in the large intestine in constipation are nothing but putrefaction *in vivo*.

The effects of this putrefactive process on the organism are easily understood. Not only is there intoxication by the products of bacterial growth, but the disappearance of the bacteria indicates a process of autolysis, the products of which when absorbed cannot fail to be harmful.

It now remained to ascertain the primary cause of constipation. No better material can be found than that offered me by Mr. Lane.

I shall not deal here with the publication of Lane and Chapple, nor shall I discuss whether the exclusion or excision of the large bowel is admissible from the physiological point of view. I only want to point out that the cases operated on by Mr. Lane and the experiments carried out on dogs by Albu both demonstrate plainly that this operation is possible, and that both men and animals can do without the large bowel.

Before going on with this subject let us consider the fæcal flora of patients without the large intestine. The following results are compiled from a study of 36 cases. In many of these cases the flora has been investigated both before and after the operation. Before the operation the flora of these patients was typical of constipation, as I have briefly described above. After the operation the flora suddenly changed, and those microbes which I have called acetogenes (B. bifidus, B. acetogenes α and β) became predominant, thus resembling the flora present in infants. It is evident, therefore, that the change in the intestinal flora caused by the exclusion of the large bowel is such that, assuming that the ill-effects of constipation are due to bacteria associated with this condition, these effects will be abolished by the operation.

The following conclusions may therefore be drawn: (1) That constipation and the resulting intoxication are caused by the intestinal flora; and (2) that the large intestine is the seat of this process.

It is necessary now to determine how constipation occurs. Doubtless the products of the intestinal bacteria, by increasing secretions inhibiting the submucous plexuses, give rise to stasis. The accumulation of fæces in the colon causes the viscera to fall downward, dragging on the organs which are attached to it. The ileum especially is affected, so that it may be almost occluded, or the ileo-cæcal valve may become inflamed, and thus the passage of fæces be further impeded.[3]

The observations made by Lane extending over a long

[1] These tubes show the same action as our *B. cellulosæ disagregans* in pure culture (Société de Biologie, 1911).

[2] THE LANCET, April 29th, 1911, p. 1130.

[3] THE LANCET, Dec. 2nd, 1911, p. 1540.

period in which he had the opportunity of seeing the organs *in situ*, are conclusive. In his book[4] he describes how the ileum in its junction with the colon becomes kinked, and the passage of fæces through it is impeded. In this way the stasis starting in the colon extends to the small intestine.

These observations made at the operating table were subsequently confirmed *in vivo* by means of the X rays by Gottwald Schwarz,[5] who observed that in constipated subjects the fæcal matters remained in the lower part of the ileum almost eight hours, and that the movements of the large bowel, although increased, are irregular and inconstant in direction, so that the fæces are pushed up and down for some time. This is the cause of the drying up of the fæces in constipation, the intestine exerting an action similar to that of a shaking apparatus.

All these observations confirm the assertion that constipation is due to the intestinal flora which causes the retention of the fæces in the large bowel for a long time. These undergo putrefaction. Hence the production of the soluble poisons on the one hand, and the extraction of the poisons retained by the dead microbes on the other give rise to auto-intoxication. All these phenomena are removed by the removal of the large intestine. Therefore there is no doubt that the seat of constipation is in the large bowel, and that the intoxication occurring in a constipated person is the result of the activity of the microbes of the intestine.

THE ILEO-CÆCAL VALVE.

BY DR. OSCAR KRAUS,
KARLSBAD.

SOME 20 years ago Cantani in Naples and others very strongly advocated the so-called enteroclysis for the treatment of certain intestinal disturbances, some of which had their seat in the small intestine. Bearing in mind the old French denomination of the ileo-cæcal valve as the "barrière des apothicaires," I desired to ascertain positively whether the supposition of olden times, that an enema could not pass that valve, was right, or whether it was possible that, as Cantani asserted, medicated liquids could by a simple enema be introduced into the lower part of the ileum or small intestine. This problem led me to a series of researches,[1] the results of which were confirmed by different anatomists (Toldt, Zuckerkandl, and others).

It cannot be a matter of indifference to the economy of metabolism whether, if I may be permitted the metaphor, the small intestine be closed towards the large intestine by a Chinese wall with an outlet, or whether between the two exists the policy of the open door. It is remarkable that 300 years after the discovery of the ileo-cæcal valve such contradictory suggestions as to its function and action are to be found in literature.

Although the historical part of the question is very interesting and shows how far advanced in detail was the knowledge of the old anatomists, Varolius, Bauhin, Van Tulp, Fallopius, Fabricius d'Aquapendente, and others, I refrain from entering upon too minute a quotation. However, I cannot help quoting a passage from an anatomical lecture by Archangelus Piccolomini, printed in 1586,[2] in which the question of the competency of the valve is so well made out that there is really little to be added. It runs as follows:—

Valvae tres, quemadmodum in corde, ad caecum intestinum sunt additae, tanquam ostiola quaedam deorsum spectantes, hunc in finem, ut materiam in intestinis gracilioribus conclusam deorsum illabi sinant, illapsam autem in crassiora impediant, ne sursum resilire possit. Proinde harum valvularum interventu, quicquam in crassioribus intestinis, sive stercus sive putridus flatus exsiterit, prohibetur, ne in violentis abdominis compressionibus in tenuiora nobilioraque intestina possit refundi ad praepediendas nobiliores naturae functiones. Has autem valvas caeco additas observatione deprehendes, si colon inferne impleveris aqua, illudque sublime suspensum teneas, cernes nihil prorsus aquae valvas illas perfluere et in gracilliora intestina subire. *Sed quid de aqua dico?* cum si rectum intestinum *aëre ac flatu*, qui longe aqua est penetrabilior, sufflando impleveris, ne minimum quidem flatus erumpere videbis a colo et caeco in ileum, *tam arcte claudunt valvae illae. Imo, si pugno premas colon, potius aliquid disrumpetur*, quam valvae illae cedant flatus ascensui in gracilliora intestina.[3]

Other literature to similar purport is quoted in my publications before referred to.

The most difficult thing in making these anatomical preparations is to get the material unaltered and without tearing it. Unfortunately, these parts of the bowels are to be obtained only *in the course* of post-mortem examinations, when those who assist the operator are apt to pull upon the intestines and thus destroy the natural conditions. This of course renders them useless, and it cannot be pointed out too strongly that the cæcum and the adjoining part of the ileum must be cut out most carefully immediately after the opening of the abdominal wall, before any other manipulation takes place. After the resection of about 8 inches of the colon (see Fig. 1) this gut is closed by means of a ligature. The ileum is not ligatured. If, then, with a double bulb syringe air is insufflated from the ileum into the colon—that is, in a direction opposite to that in which the insufflation was carried out by Piccolomini—it will be found that this air does not escape in the most diverse degrees of fulness of the gut, even though the ileum be not ligatured. This means that the valve closes quite tightly in a passive way.

After having carefully removed fat and mesenteric elements and looking at the front of such a preparation (Fig. 1), the peculiar disposition of the anterior tænia is striking; it describes an arch with its concavity opening upwards and inwards, corresponding to the inclination of the axis of the cæcum towards the colon. In this part of the gut there are constantly found three haustra which I have called *haustrum cæcale*, *haustrum ileo-colicum*, and *haustrum coli primum*, following the direction from below upwards.

In the intestine represented in Fig. 1 it appears that the *haustrum ileo-colicum* is covered by the two neighbouring haustra to such an extent that only a small triangle of it is visible, the base of which is formed by the tænia, the apex looking towards the ileum. *This configuration is to be seen in all bowels with a competent valve.* Looking at the back of the gut the peculiar direction of the tænia also strikes one. It rises perpendicularly from the region where the ileum enters the cæcum. At this very spot I found a band of longitudinal muscle fibres, from 0·08–0·16 inch in length, diverging from the tænia and forming a small bridge passing behind the ileum and over the two adjacent haustra. I have found this band regularly in all guts examined and have called it *habenula cæci*. Toldt[4] misapprehended its nature. We shall still have to deal with it. By removing fat and blood-vessels from the sulcus under this bridge it is possible to pass a probe under the latter (Fig. 2).

In order to ascertain how a competent valve would appear when seen from the inside I introduced and fastened by a ligature a sort of window in the wall of the gut on the side opposite to the valve so as to be able to inspect it. This method has since proved satisfactory for the purpose of demonstration. (Zuckerkandl in his Topographical Atlas and others have copied it.) Fig. 3 shows the view of such a valve as seen through the above-mentioned window. The ileo-cæcal valve represents, according to its shape, an invagination of the end of the small intestine into that part of the bowels where the large intestine begins a sort of duplication, which bulges into the cavity of the cæcum. Its opening forms a button-hole-like fissure, produced by the apposition of two falciform folds. The upper fold is very long, similar to a real plica sigmoidea. Its ends are called frena Morgagni; the lower one is much the shorter, semicircular,

[4] The Kink of the Ileum in Chronic Intestinal Stasis.

[5] Zur Physiologie und Pathologie der Dickdarmbewegung, Münchener Medizinische Wochenschrift, 1911.

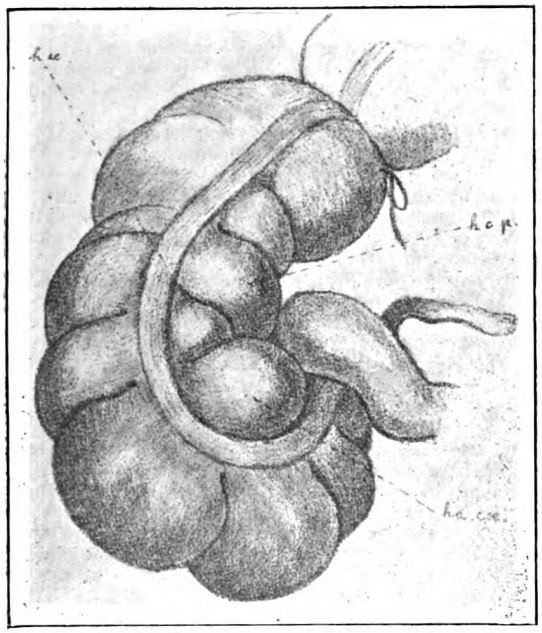
[1] Oscar Kraus: Langenbeck's Archiv, 44, 2; Wiener Klinische Wochenschrift, 1902.

[2] Anatomiae Praelectiones, xi.

[3] Three valves, as is the case in the heart, are appended to the cæcum, like little doors looking downwards, in order that they may allow matter confined in the smaller intestine to pass downwards, but prevent that which has passed into the greater (bowel) from returning upwards. Therefore, by the intervention of these valves whatever, whether fæces or putrid gases, may be in the larger intestine, is prevented from being forced back during violent compression of the abdomen into the smaller intestine to the hindrance of the higher functions of nature. But in order to observe these valves attached to the cæcum, if you fill the colon from below with water and hold it suspended on high, you will see that none of the water flows backwards through the valves. But why do I speak of water? when if you fill the rectal intestine by insufflation with air and flatus, which is far more penetrating than water, not even one jot of flatus will you observe to escape from the colon and cæcum into the ileum, so tightly do those valves close. On the contrary, if you squeeze the colon with your hand something will break, rather than those valves will yield passage for the ascent of flatus into the small intestine.

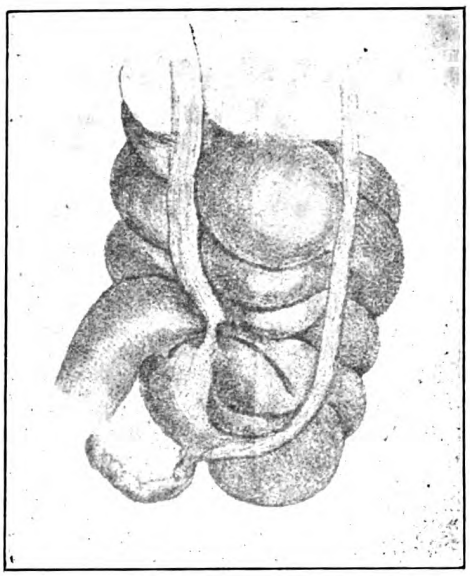
[4] Toldt: Die Formbildung des Menschlichen Blinddarmes und der Valvula Coli. Sitzungsberichte der Kaiserl. Akademie der Wissenschaften, 1894, Band ciii., heft 1.

FIG. 1.



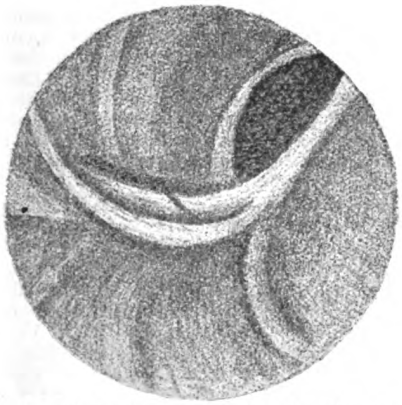
Gut with competent valve seen from the front. HA.CÆ., Haustrum cæcale. H.IC., Haustrum ileo-colicum. H.C.P., Haustrum coli primum.

FIG. 2.



Gut with competent valve seen from behind. A probe under the habenula cæci.

FIG. 3.

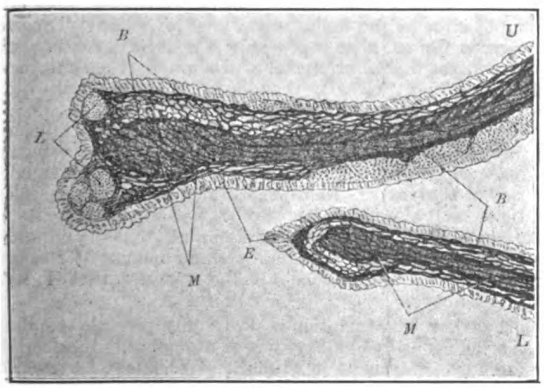


Competent valve seen through a glass window

FIG. 4.

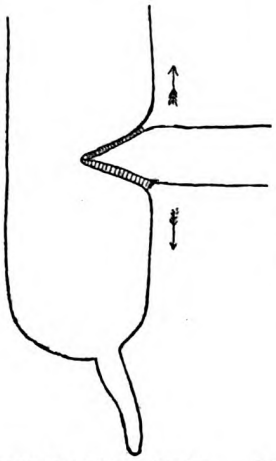
Incompetent valve.

FIG. 5.



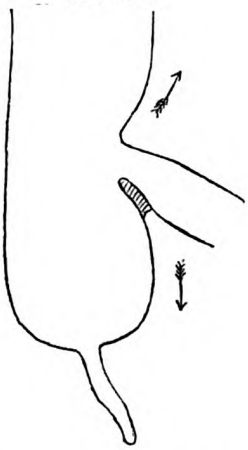
Microscopical section through both lips of the valve. U, Upper lip. L, Lower lip. E, Epithelium. L, Lymphoid follicles. M, Muscle fibres. B, Connective tissue.

FIG. 6.



Scheme of a competent valve.

FIG. 7.



Scheme of an incompetent valve.

but as long as the opening of the valve. According to Luschka, the lips of the valve consist of the mucous membrane and of the circular fibres of the muscularis. Further, according to his statement, the serosa does not participate in the invagination, and also the longitudinal fibres of the small intestine do not enter the substance of the valve, but getting thicker, pass over into the wall of the large intestine. According to Toldt,[5] however, both the longitudinal fibres of the tænia and those of the ileum reach the *edge* of the lip of the valve. My histological researches confirm Toldt's statement. The microscopical preparation clearly shows that the longitudinal fibres reach the edge of the valve (Fig. 5).

As can be seen from the diagram, the ileo-cæcal valve is a real valve, which allows the passing over of the contents towards the large intestine, but prevents passage in the opposite direction. It closes perfectly passively, even in the anatomical preparation—that is to say, without muscular action. It may be compared with Bunsen's indiarubber valve, a "lip-valve," as used in chemical laboratories. It consists merely of a small closed indiarubber tube, forming the outlet of the glass tube through which the gas passes. A very small longitudinal cut or slit is made with a sharp razor into the rubber, which consequently permits the gas to escape. To a recurrent gas stream, however, the lips of the slit will be compressed and will close still tighter.

What occurs if we continue to force air into the gut without heeding the tension of the bowel? That which Piccolomini describes—namely, "ut aliquid disrumpetur." We find that: 1. The colon tends to stretch straight, the curve or bending of the cæcum having partly disappeared, a condition shown by the straighter direction of the anterior tænia. 2. In this forced stretching the shortest, that is the inside, tænia has been ruptured. 3. The haustrum ileo-colicum now lies quite free and is no longer covered by the haustrum cæcale and haustrum coli primum. 4. On the posterior aspect we see that the upper insertion of the habenula has been torn off, the habenula itself having retired downwards. 5. The connective tissue forming the normal adhesions between the anterior part of the upper wall of the invagination between ileum and colon have been torn over an area of the size of a halfpenny. 6. By accurate measurements I have been able to demonstrate that the upper lip had thus been shortened and retracted from the lower one, that the invagination had disappeared at the point in question, and that the valve is no longer competent (Fig. 4). Its lips are gaping, as can be seen through the window inserted in the bowel. *I must especially emphasise that all these, and only these, changes take place regularly*, as often as the insufflation passes a certain limit.

The sketches of Figs. 6 and 7 demonstrate the mechanism whereby the valve closes.

In competent valves the fibres pull with equal force from all sides unto the base of the funnel with a force greater in proportion to the extent to which the bowel was inflated. The adhesions between cæcum and ileum resist this pulling so long as the lips of the valve remain united. If, on the other hand, the valve is torn, the force of the insufflation works (as shown by the arrows in Fig. 7) straight on the upper border of the lip, pulling it away from the lower lip, and the valve is no longer competent. Now, in my opinion, which is also shared by Toldt,[6] it is the very habenula which protects the adhesions between ileum and cæcum from being torn.

Among the bowels examined by me I have found 12 the valves of which were not competent. I am quite aware that the material used in my investigation, some 150 cases, is not very extensive; but it is very difficult to get complete unlacerated guts from the post-mortem room. Anyhow, according to my findings the competency of the valve must be considered a normal condition so long as control investigations fail to prove the contrary.

The bowels with *incompetent* valve showed the following particulars: (1) colon and cæcum were very wide in all of them; (2) the colon was quite straightened (straight anterior tænia); (3) the three haustra lay in apposition, the haustrum ileo-colicum not covered by its neighbours. Very often no sharp limit existed between the three haustra. Thus we find in bowels with insufficient valvulæ coli the same changes as in incompetency artificially produced.

In new-born children the valve is incompetent, and we must surmise that competency is attained in the first years of life. In the post-mortem on a boy 5 years of age I found the valve competent. Whether in the cases of incompetency quoted we have to deal with a persisting infantile condition or with acquired incompetency I cannot say.

These are the anatomical results of my investigations which I may be permitted to sum up in the following conclusions.

1. In a gut removed from the cadaver the valve shuts up gas-tight by passive action. That is the normal condition.

2. It is possible to destroy the competency of the valve by excessive insufflation of the colon. The changes which are thus produced are typical.

Until now we have dealt with the conditions of the valve in a gut *removed from the cadaver*, and we have seen that under merely mechanical conditions the valve is competent and closes gas-tight in a passive manner. But we were only speaking of the way the valve closes. Logically we have now to ask: How does the valve open? Does this occur in a merely passive manner—that is, exclusively by the inner pressure of the contents? Unfortunately, we cannot get an answer to this question except by inspection, for this could only be seen *intra vitam*. Moreover, experiments on animals fail to help us to resolve this question, for in most animals used in experimentation, although they possess more or less distinct thickening of the circular muscle fibres, we fail to find a really competent valve, not only in the highest anthropomorphs, but even in new-born babes. And there is not only a great morphological but also a functional difference between a simple ring-muscle and a complete and competent valvular apparatus. The first stands open and may contract, as the other circular fibres of the gut do, while the intestinal valve of the adult man closes perfectly by passive means. These reinforced circular fibres are to be seen in the guts of dogs, where the rudiment of a valve scarcely projects into the lumen of the bowel. In the intestines of the dog the part corresponding to the human ileum passes directly over into the colon, and the relatively large cæcum forms a special appendage. In murines (mouse, field-mouse), in rabbits and hares, and so on, the condition is similar. In most of these herbivora the cæcum is large; in the hare about ten times as big as the stomach. Although they do not shut there exist sometimes two valves between the cæcum and colon, but none between the small and the large intestine.

It has already been mentioned that *intra vitam* we have to deal not merely with mechanical but with bio-mechanical conditions, in which not only the turgor of the intestinal wall and the tonus of the muscles participate—conditions which must have a still better influence on the tight closing of the valve—but in which the innervation also has to be taken into consideration. V. Zessl has shown that the sphincter vesicæ opens not merely in a passive way, following the pressure of the detrusor, but actively also by irritation of the nervi erigentes, and even after the detrusor has been cut through. V. Frankl-Hochwart and Froehlich succeeded in relaxing the sphincter ani by cortical irritation. Taking these statements into consideration, we may suppose by analogy that this shutting or closing apparatus, also consisting of circular and longitudinal muscles, might be opened by nervous action; that it probably is opened in consequence of the contact with the chyme, or, to use a technical term, reflexly on short circuit, though it generally closes quite mechanically in the same way as the bladder and anus do.

Of course, this refers only to physiological conditions. For it will not do, as Hyrtl has done, to take the vomiting of fæces which occurs in ileus as a proof of the normal competency of the valve. Ileus is certainly not a physiological condition, and any physician who has had the opportunity of observing a case of ileus will surely admit that the organism is struggling against the obstacle with an amount of strength surely sufficient to produce all the changes that I have described above.

But, as has been mentioned, it is only possible to draw these conclusions by analogy, for we are not able to ascertain the facts by experiment on animals. We know, however, of a simple observation which is as demonstrative as an experiment would be. This is the classical case communicated by Nothnagel in 1884, in his well-known contributions to the

[5] Ibid.

[6] Besides that, the mesenteric covering helps, by tight fibres which retain the curve of the cæcum *in situ*, to keep the valve competent.

physiology and pathology of the bowels. In one of his patients ileus had been protracted during nine days. Some hours before death a very small quantity—if I remember correctly 8 oz.—of a coloured NaCl solution had been injected per anum, and it was possible to detect the coloured liquid about 15 inches above Bauhin's valve. This experiment shows quite distinctly that antiperistaltic movement can arise under pathological conditions.

How can we utilise this experiment to solve the question of competency. In a double way. In his case Nothnagel had to deal either with a valve that had been originally incompetent, or with one that had become incompetent in the course of the ileus.

Chance plays a great part in medicine. I remember that when preparing the fresh anatomical specimens for a demonstration before the Society of Internal Medicine in Vienna, as chance would have it, the first valve I came on was incompetent; yet they are by no means frequent as that might seem to suggest. So it is quite possible that Nothnagel's valve also was originally incompetent. But further, Nothnagel relates in a most illustrative way the treatment that had been applied before his arrival—enemas of iced soda-water, Hegar's injection of two quarts of liquid, and so on. Taking into consideration that the whole colon can scarcely take a little over two quarts on an average, we cannot be surprised if the valve was torn by such proceedings, especially by hyper-extension.

I am very sorry that since my first paper appeared this quite harmless, but very illuminating, experiment of Nothnagel has not been repeated. I am sorry that it has not been repeated in invalids without ileus, that it has not been repeated in patients with intestinal fistula, and that the changes as described by me have not been observed. By so doing one would surely have succeeded not only in throwing light on this subject but also in getting indications as to the limits of insufflation that physiological conditions will allow.

Different authors have tried to bring into connexion the function of the ileo-cæcal valve with the movements of the bowels. Anyone who has devoted himself to the study of peristalsis will surely admit that this is a very difficult problem, and I must confess I am not brave enough to get into a scrape unnecessarily; and I do not see any necessity for it, for the closing of the valve has but a very loose connexion with the intestinal movement.

There has been much discussion concerning the purpose and utility of the valve and as to what were the aim and idea of its action. Several authors have asserted that scientifically we are not entitled to claim a special utility for any organ and consequently not for the ileo-cæcal valve. But this view cannot stand a serious discussion. Even Darwinism deals with teleology: the great doctrine of adaptation, mimicry, and other phenomena are nothing else in principle than teleological. But concerning the law of adaptation it is stated that "the function creates the organ." Seeing by phylogenetic as well as by ontogenetic studies that there is a steady transition from the tube with open communication between small and large intestine to the complicated apparatus of an entirely competent valve, we must say that the existence of this organ is entirely due to the fact that its function has been established by degrees and *vice versâ*: if the valve does exist it must consequently have got a function—that is, a purpose. In common language these two words are used for the same thing.

But as far as my opinion goes it will be not the anatomists but the chemists who will tell us what is the purpose of the ileo-cæcal valve. Anyhow, I find, to my thinking, a striking proof of the normal competency of the valve in the intestinal chemism. It is commonly known that of late years a long series of so-called "fistula analyses" has been carried out, and this by most reliable authors, such as Ewald, Nencki, Zakowski, and others. Anyone who has at any time been occupied with anatomical research on the gut knows of the penetrating smell of the products of decomposition of the albuminoids, an odour which will cling to anything, the hands, clothes, or instruments. But none of these authors could find in the small intestine appreciable quantities of these products of decomposition—viz., phenol, scatol, indol, mercaptan, and so on. I can only explain this by the fact that the valve is competent as regards the passage of gas, though only in so far as normal conditions are dealt with, for we know well that in pathological forms of digestion, especially in anomalies of acidity in the stomach and of the secretion of bile, putrefaction (decomposition of albuminoids) can take place in the small intestine. But that has, as stated, nothing to do with normal physiological conditions.

Up to date nothing has been discovered concerning the possibility of opening the intact valve through its innervation. Histological conditions do not permit us to exclude this possibility, but the physiological statements, as made for other sphincter muscles, allow us to assume it as probable. It is not probable that the intact valve can be opened from the large intestine; and the old quotation from Piccolomini still holds good: "Klyster penetrare non potest in graciliora intestina."

A CASE OF PYÆMIA TREATED WITH SPECIFIC ANTISTREPTOCOCCUS SERUM.

BY C. W. G. BRYAN, F.R.C.S. ENG.,
LATE HOUSE SURGEON, HOSPITAL FOR SICK CHILDREN, GREAT ORMOND-STREET, LONDON.

THIS case appears to me to be worthy of record if only on account of the rarity of pyæmia as a complication of the Lorenz operation for congenital dislocation of the hip.

The patient, a girl aged 2 years 3 months, was admitted to the Hospital for Sick Children, Great Ormond-street, on July 5th, 1911, under the care of Mr. H. A. T. Fairbank, suffering from a congenital dislocation of the right hip. The deformity was very slight. She had commenced to walk at the age of 1 year 6 months. She was a well-nourished, healthy child, without any sign of disease other than the hip deformity.

On July 6th an operation was performed. The patient was anæsthetised with chloroform followed by open ether. The skin having been washed with ether soap and powdered with boric powder the hip was very easily reduced; the adductor muscles were not torn through, and very slight violence was necessary to obtain full abduction. No abrasion or immediate bruising of the skin was caused. On the 8th some bruising in the adductor region appeared, distinctly less than in the average case. Except for slight variation in temperature, which rose to 100° F. on the 14th and to 102° on the 15th, nothing abnormal occurred until the latter date, when œdema and tenderness were apparent over Scarpa's triangle, the œdema involving the right labium majus. A small abscess under the deep fascia in the adductor region was opened and drained, about half an ounce of thin pus being evacuated. The temperature at night was 101°. On cultivation of the pus a pure growth of streptococcus was obtained.

On the evening of July 16th the temperature rose to 104°. The plaster-of-Paris splint having been removed, the abscess was again opened up and found to have tracked down the thigh. Two further incisions were made and very thorough drainage was established. The wall of the abscess was carefully examined and there was no sign of deep extension. The hip-joint itself seemed normal, with no suspicion of fulness or other sign of suppuration. For the next ten days the temperature was about 103° at night and 100° each morning. The patient became extremely toxæmic and rapidly wasted. The wound showed no sign of granulation, and the pus which was discharged was small in amount and contained few leucocytes. On the 26th the left hip-joint filled up with pus and was opened and drained posteriorly. On the 29th the right hip-joint became affected. Both joints were freely opened and drained in front and behind. The patient after the operation was very collapsed, but rallied somewhat after treatment with subcutaneous saline and stimulants. On the 30th a subcutaneous abscess in the left malar region was incised.

On August 2nd suppurative tenosynovitis of a finger developed and the sheath was opened. On the 3rd an acute abscess developed under the left trapezius, tracking under the scapula towards the clavicle. The child was now too ill for general anæsthesia, so after injecting novocaine locally I drained the abscess with three incisions.

From July 21st to August 2nd streptococcus vaccine was administered; at first two doses of a stock polyvalent vaccine, later a specific vaccine which was administered

daily in doses of 250,000 to 1,500,000. I was unable to observe any very definite effect from the vaccine. On July 15th 10 c.c. of a polyvalent antistreptococcus serum was administered; this was repeated on July 19th and August 4th. No beneficial effect was evident.

In counterdraining the abscess on August 3rd I was careless enough to abrade my own finger. Very acute cellulitis supervened, and the finger was incised by Mr. V. Warren Low 18 hours after the accident. After another eight hours, as lymphangitis was spreading and had reached the axilla and my temperature remained at 102°, 1,000,000 of the specific vaccine which I had prepared for the child was administered to me. My temperature immediately became normal, and the infection from this time was quite localised. Captain S. R. Douglas kindly directed my treatment by vaccine and examined the streptococcus obtained from my finger, expressing the opinion that it had the morphological character of streptococcus fæcalis.

Meanwhile the pyæmic child was apparently *in extremis*, there was no attempt at granulation in any of her wounds, and the temperature varied between 100° and 103°. On August 10th, 40 c.c. of blood was withdrawn from my median cephalic vein and allowed to clot, and on the following day 10 c.c. of serum obtained in this way was injected subcutaneously into the child. For three days her temperature was rather higher, never being above 103°, but dropping less in the mornings than it had previously done. After August 14th it gradually fell to normal. The change in her general condition was marked, as was also the improvement in the local condition of her many wounds. All the wounds began to granulate and in just over a fortnight were healed, except for sinuses in connexion with the hip-joints.

On Sept. 9th I removed a small sequestrum from the head of the left femur, and a large sequestrum consisting of the head and neck of the right femur. The sinuses gradually closed and the patient was discharged from hospital on Nov. 16th.

This case possesses several points of interest.

1. The occurrence of pyæmia after the Lorenz operation is very rare. Where suppuration occurs in the hæmatoma produced by the operation, as a rule severe violence has had to be employed in the reduction, abrasions are frequently present, and the children have been generally weakly.

2. On August 11th what amounted to a specific anti-streptococcus human serum was injected subcutaneously. The fall of the temperature from this time was gradual, but the child's general condition showed marked improvement within a few days, and the wounds, which so far, over a period of nearly a month, had shown no sign of granulation, began to heal. I know of no record of the previous use of immune human serum in similar circumstances.

3. In the treatment of myself it was possible to use a specific vaccine within eight hours of the incision of my finger, the vaccine being that which I had previously prepared from the child's streptococcus. Eight hours is too short a time for the preparation of a vaccine, and I do not suppose that an acute infection has been treated by a specific vaccine so early.

I desire to express my thanks to Mr. Fairbank for permission to publish these notes.

Kensington-gardens-square, W.

ST. MARK'S HOSPITAL FOR DISEASES OF THE RECTUM, CITY-ROAD, E C.—The Lord Mayor of London presided at the Mansion House on Feb. 16th at the annual meeting of the supporters of this hospital. Sir Thomas Crosby, in welcoming the audience to the Mansion House, said that his knowledge of the hospital was of very long standing. More than 50 years ago he had the pleasure of knowing the founder, and in the "fifties" he assisted the staff at operations on a number of occasions. The adoption of the annual report was moved by Dr. A. W. Oxford. Sir Homewood Crawford said he thought the time had come when they might justly claim a larger grant from King Edward's Hospital Fund. The Lord Mayor pointed out that the medical officers gave their services gratuitously, and that the warmest thanks were due to them. Mr. F. Swinford Edwards, in returning thanks for himself and his colleagues, said that the aim of the hospital was to supplement the work of the general hospitals. This they did by making a very special study of fistula and its remedies. A vote of thanks to the Lord Mayor terminated the proceedings.

Clinical Notes:

MEDICAL, SURGICAL, OBSTETRICAL, AND THERAPEUTICAL.

A CASE OF PERNICIOUS MALARIAL FEVER SIMULATING URÆMIA.

BY B. N. VARMA, L.R.C P. & S. EDIN., L.F.P.S. GLASG.

THE patient was a married man aged 43 years. The family history showed that his father had had several strokes of paralysis, that his mother had been insane for several years, and that a brother (older) had recently had an attack of hemiplegia. On Nov. 26th, 1911, the patient had had an attack of coryza for which 10 grains of chloride of ammonia, three times a day, had been prescribed offhand. The condition increased in severity, and the temperatures, which was remittent, had reached 101° F. The patient then used indigenous drugs as advised by a "quack," which were of the nature of purgatives. These did him no good. He developed severe diarrhœa which troubled him much. On making inquiry into past illnesses the patient was found to have had several such attacks of continued fever which had yielded to quinine. An examination of the blood at this stage had not exhibited malarial parasites, and the differential count was normal. The condition was accordingly thought to be one of continued malarial fever—the temperature in the morning being 101·6° and in the evening 102·5. Bismuth with chalk and opium were prescribed to stop the diarrhœa, and quinine with chlorine water administered for the malarial fever. The diarrhœa did not subside under the astringent mixture. A fortnight after the onset of the coryza the patient had had epistaxis and had become mentally confused. He grew incoherent in his speech and persistent insomnia set in.

The foregoing facts, coupled with the intractable diarrhœa, led to my examining the patient very thoroughly. Physical examination revealed the following facts. Heart: apex beat in the fifth space in the mammary line; first sound normal, second sound slightly accentuated in the aortic area. Pulse 120, of moderate tension. The sphygmomanometer showed a blood pressure of 130 mm. Lungs normal; no adventitious sounds. The spleen was slightly palpable. The lower margin of the liver just felt below the right costal arch. No œdema. No dropsy. Ophthalmoscopic examination showed no retinal changes. Urine pale and clear, and showing faint traces of albumin; specific gravity 1008; microscopically, hyaline and granular casts.

The case was thought to be one of incipient uræmia on the following grounds: (*a*) A history of alcoholism extending over the last ten years; (*b*) frequency of micturition for the last two or three years, which the patient had mistaken for diabetes, the bladder being voided six or eight times in the day and two or three times in the night; (*c*) intractable diarrhœa; (*d*) epistaxis; (*e*) the urine examination showing traces of albumin, low specific gravity, with granular and hyaline casts; and (*f*) the mental condition of the patient—e.g., incoherence in speech and blank looks and persistent insomnia, &c. One-fifth of a grain of pilocarpine was administered hypodermically at once. The patient had profuse diaphoresis though the pulse got very feeble, signs of collapse intervening for which strychnine with digitalin was given hypodermically and caffein, digitalis, and strychnine in mixture. Two or three hours after the pilocarpine injection the patient got more coherent in his speech and was found to have improved in all respects, but a few hours later he relapsed into his former semi-comatose condition. The pulse being very weak the pilocarpine injection was not repeated. Hot fomentations, hot wet packs, and cupping over the kidneys were applied to eliminate the toxins. These did not bring the patient round. He got much worse; the delirium became of a raving, maniacal type, the pulse became imperceptible, and the heart sounds were barely audible. The feet and hands were cold and the conjunctival reflex was almost lost. Ten grains of veronal sodium were given for the insomnia and delirium. This failing, hyoscine hydrobromid gr. 1/100, and strychnine gr. 1/60 were injected hypodermically. Fifteen minutes after the injection the patient fell into deep sleep; the delirium ceased and the pulse got stronger. Six hours after the injection the patient awoke.

He was now quite coherent in his speech and could recognise faces. He was put on simple diapho-diuretic mixture of sweet spirits of nitre and ammonium acetate solution. The morning temperature was 100° and that of the evening 102·6°, which continued so for a week. A blood examination was again made. Pigment granules were found inside the polymorpho-nuclear leucocyte, and there was an abnormal increase of mononuclear leucocytes (large), 53 per cent. The patient was put on huge doses of quinine and the fever yielded to it readily. Subsequent examinations of the urine on several occasions showed it to be clear and orange-brown in colour; specific gravity 1025–1020. The blood pressure registered from 120 to 130 mm.

The patient has since made an uninterrupted recovery and is now quite hale and hearty.

Golaganj, Lucknow.

NOTE ON AN UNUSUAL CASE OF INGUINAL HERNIA.

BY H. M. ANDERSON, M.B. EDIN.,
SENIOR ASSISTANT MEDICAL OFFICER, WEST HAM UNION, LEYTONSTONE.

THE following case of an inguinal hernia, which was remarkable both for its size and for the nature of its contents, may prove interesting to readers of THE LANCET.

The patient was a male, aged 86 years, who died in the West Ham Union on Feb. 4th. He had an enormous left-sided inguinal hernia measuring 18 inches from the external ring to the apex, the circumference at the widest part being 36 inches.

At the post-mortem examination the following condition of affairs was found. The circumference of the neck of the sac was 11 inches. Through it had passed the greater part of the intestinal tract. The stomach measured 16½ inches from fundus to antrum pylori. Its lower half was herniated, a very marked constriction being produced by the external ring. The upper intra-abdominal portion was enormously distended and occupied the whole of the left half of the abdominal cavity. The first part of the duodenum, together with that portion of the second part proximal to the opening of the common bile-duct, was elongated, measuring 8 inches in length. The lower or proximal half of this part of the gut was in the sac; the upper or distal part extended intra-abdominally and vertically as far as the projection of the umbilicus on the posterior abdominal wall. At this level it was acutely flexed upon the lower half of the second part of the duodenum, the convexity of the flexure receiving the common bile-duct. From this flexure the gut returned to the sac. The remainder of the small intestine and the whole of the large, with the exception of a small portion of the sigmoid colon and the rectum, occupied the hernial sac. The cæcum was placed inferiorly and laterally, whilst the descending colon and splenic flexure were closely adherent to the medial wall and apex of the sac. There was a compensatory descent of the diaphragm and consequently of the liver, the lower border of the right lobe of this organ being slightly below the intercristal plane. The bladder occupied the right iliac fossa, its usual mesial position being usurped by the intra-abdominal portion of the sigmoid colon. A great increase of fat in the omenta and mesenteries and the binding together of the contents of the abdomen and sac by dense fibrous adhesions complicated the examination considerably. The testicle, very small, flattened, and atrophied, with an enlongated cord, was situate medially at a point midway between the pubis and the apex of the sac.

According to his wife's statement, the patient had had a hernia for over 50 years, the size having remained *in statu quo* for 12 years or more. For five years previously to his death the patient was bedridden. Prior to this he had been able to get about, although with some difficulty.

The capacity of the sac is unusual. It equalled, if not exceeded, that of the abdomen proper. Worthy of notice are, first, the extent to which the normal arrangement of the abdominal organs had been altered; and secondly, the maintenance of practically normal physiological functions under such circumstances. Apart from occasional attacks of vomiting and the necessity of fairly frequent use of laxatives, a very fair state of health obtained until the last.

I wish to express my indebtedness to Dr. J. Sangster Greig for permission to communicate these notes.

Leytonstone.

Medical Societies.

ROYAL SOCIETY OF MEDICINE.

SURGICAL SECTION, WITH SECTIONS OF MEDICINE AND ANÆSTHETICS.

Exophthalmic Goitre.

A JOINT meeting of these sections was held on Feb. 13th, Mr. CLINTON T. DENT, the President of the Surgical Section, being in the chair.

Before the business of the meeting was proceeded with the PRESIDENT referred in suitable terms to the death of Lord Lister. The following resolution, proposed by the President and seconded by Sir ANTHONY BOWLBY, was unanimously passed by the Fellows and members standing:—

The Fellows of the Surgical Section of the Royal Society of Medicine desire to express the deep regret with which they learnt of Lord Lister's death, and to place on record their profound sense of the incalculable benefits that his life-work has conferred, not less on other branches of medical science than on surgery, and on humanity generally. They desire to convey to the members of his family their sympathy in their great loss—a loss that will be universally felt throughout the civilised world.

Dr. T. P. DUNHILL, of Melbourne, communicated a paper entitled "Partial Thyroidectomy under Local Anæsthesia, with Special Reference to Exophthalmic Goitre," which is published in full in the last issue of THE LANCET, p. 422.

Sir VICTOR HORSLEY said that he could add little to what he had contributed to the discussion at a meeting of the Hunterian Society held last year. As regards the pathology of Graves's disease, he did not entirely agree with Dr. Dunhill's classification into four classes of cases. He (Sir Victor Horsley) recognised three forms: (1) true exophthalmic goitre with watery secretion; (2) parenchymatous goitre with exophthalmic symptoms; (3) an extremely rare form in which the gland was wholly diseased, and in which he advised total removal and grafting of normal gland beneath the peritoneum. He agreed with Dr. Dunhill's view that the danger of operation was *nil;* that was his (Sir Victor Horsley's) own experience. He had had one death only, and that many years ago. It was true, however, that he had refused to operate upon three cases, and so possibly avoided a higher mortality. The high death-rates published must depend upon an incorrect estimation of the condition before operation. It was only fatal in *dernier ressort* cases. With regard to the method of operation, he had given up that by ligature of the arteries and did not consider that it cured like removal of the lateral lobe and isthmus. It was true that certain symptoms persisted afterwards, such as hurried heart action on exertion and a degree of exophthalmos, but the patients returned to work, and that was the test of surgical treatment. All his cases had been subjected for many months to medical treatment. He thought three months was long enough to wait before resorting to surgical measures. No medical treatment would cure parenchymatous goitre with exophthalmic symptoms in an adult. True exophthalmic goitre, however, often got well with faradism and rest-cure treatment. With regard to the means of producing anæsthesia, he had operated upon severe cases and always under general anæsthesia, and had seen no reason to depart from that method. He considered that the method of anæsthesia had no bearing on the prognosis. He admitted that too often an excess of anæsthetic was given. He had seen no deaths from the general anæsthetic and did not think that it should be held responsible for deaths in these cases.

Dr. GEORGE R. MURRAY (Manchester) then read a paper on the Principles of Treatment in Exophthalmic Goitre, which will be found on p. 489 of this issue of THE LANCET.

Mr. C. A. LEEDHAM-GREEN (Birmingham) said that we were at a grave disadvantage as regards operative treatment of exophthalmic goitre in England. The value of the operation had not been appreciated properly and consequently few cases were referred to the surgeon, and even these were of the severest type. It was not easy to state the mortality of the operation, for there was still great difference of opinion as to the indications for operating and as to what cases should be classed as exophthalmic goitre. At the German Surgical Congress last Easter six surgeons quoted

their mortality, which varied between 3 and 17·3 per cent., or taking the total 883 cases gave an average mortality of a little over 5 per cent. The average of many hundreds of published cases treated by conservative measures came out at about 15 per cent. The immediate result from operation was generally strikingly good. It was a difficult question to answer whether the results were permanent, for the operation had only been done systematically during the last decade, and was much more thorough now than a few years ago. Parré out of 65 cases owned to 10 or 15 per cent. failures. Von Eiselsberg, of 71 cases, reported 23 completely healed, 8 improved, 2 unrelieved. Küttner collected 85 cases; 21 were treated conservatively, 5 of these died; of the remaining 16, 9 could be traced. None were cured and only one felt better. Of the 63 operated upon, 11 died. Of the remaining 52, 37 were traced and 31 examined. Of these 33·2 per cent. were cured, 36 per cent. markedly improved and at work, 16·6 per cent. able to work, but still showed definite signs. In 13·8 per cent. no permanent benefit accrued. Of Mr. Leedham-Green's own cases operated upon, 30 in number, 3 had died: 1 from pneumonia, 1 from heart failure, and 1 some weeks later from phthisis. Of the remainder all derived definite benefit from the operation; 2 had relapsed, due to hypertrophy of the remaining lobe All the others were at work. If the operation was to have a reasonable chance of curing the patient, it must be resorted to before the vascular and nervous systems were shattered by the prolonged ill-effects of the morbid thyroid secretion. As soon as the effects of rest and medicinal treatment proved unavailing, valuable time should not be wasted before resection was considered. He had obtained the best results where he had removed most. He thought that the risk of ligation of vessels was proportionately greater than the benefit derived from it. He considered the question of the method of anæsthesia an important one, and preferred local anæsthesia preceded by a small dose of scopolamine and morphia.

Mr. J. LYNN THOMAS (Cardiff) agreed with Sir Victor Horsley that the method of anæsthesia was a very small factor in the success of the operation. He himself had had 4 deaths, among which 1 occurred after the use of novocaine, 1 was due to emotional disturbance, and 1 to pneumonia after ether inhalation, so that the kind of anæsthesia played very little part. He regarded emotional disturbance as a very important factor, and it was consequently important to keep a close eye on the patients after operation.

Dr. W. HALE WHITE said that he had investigated more than 200 cases which had been treated either at Guy's Hospital or in private practice between the years 1888 and 1909. He excluded those operated upon first. Of the remainder, he had been able to trace 49 hospital cases and 53 private ones. He had submitted his figures to Mr. Thiselton, who had kindly given him an actuarial report. The "expected deaths" among women of the ages implicated during that time were 5; the actual deaths were 8. Taking only those between the ages of 30 and 45, and excluding the few cases which occurred before and after those ages, "expected deaths" came out at 3 and actual deaths at 5. Counting in the private cases also, it appeared that 15 actually died, whilst 8 could be counted as "expected deaths," so that the mortality of exophthalmic goitre was apparently twice that of people in general. It must be remembered also that all were either ill enough to go to the hospital or seek a second opinion. The figures did not include those dying in the hospital, who were, of course, unsuitable for operative treatment. On 18 patients who died in hospital and who were not operated upon, 11 had fatal diarrhœa and vomiting, 6 became delirious, and 1 comatose. Two had melancholia and 1 mania. In 1 case mitral disease was present, and in 1 endocarditis and pericarditis were present. Two had rheumatic fever. Two had pneumonia and 1 bronchopneumonia. One died from diabetic coma. Of the 7 private patients who died (apart from operation), 1 succumbed to phthisis, 1 to pleural effusion, 1 to heart disease, 1 to alcoholism, 1 to diarrhœa, and 2 to diabetes. Forty cases could be traced of patients who had not been operated upon, and did not die in the hospital; 26 did very well, 12 did moderately well or were better, and 2 were no better. Of 47 seen in private practice who neither died nor were operated upon, 35 did well, 9 moderately well, and 3 not well. In all, 87 cases came under this category, of whom 61 did very well, 21 moderately well, and 5 were no better. Of 11 who had been operated upon, 4 died as the result. Only one reported herself as feeling perfectly well; the others were much better, but not cured. Actual deaths among sufferers from exophthalmic goitre, ill enough to go into hospital or seek a second opinion, were 15 as against 8 expected among healthy females, although these patients afflicted with exopthalmic goitre included severe and very severe cases. As, on the other hand, cases selected for operation were usually mild, and a few died as an immediate result, it hardly seemed likely that operations on the thyroid could diminish greatly the deaths that might, if the patients were not operated upon, be expected among such sufferers from exophthalmic goitre as would be selected for operation. If the operation became at all common it would be because it got the patients well more quickly and more perfectly.

The discussion was then adjourned.

MEDICAL SOCIETY OF LONDON.

Intrinsic Cancer of the Larynx Treated by Laryngo-fissure.—Aching Throat.

A MEETING of this society was held on Feb. 12th, Dr. J. MITCHELL BRUCE, the President, being in the chair.

Before proceeding to the business of the meeting the PRESIDENT referred in sympathetic terms to the great loss that the Society had sustained in the last few days in the death of their greatly respected Fellows, the late Lord Lister and Sir William Allchin. A vote of condolence with their nearest relatives was passed by the Fellows standing.

Dr. STCLAIR THOMSON read a paper on Intrinsic Cancer of the Larynx treated by Laryngo-fissure, with 80 per cent. of lasting cures. He considered that cases of cancer of the larynx might be divided into two groups—intrinsic and extrinsic. This classification was of the greatest importance, for whilst extrinsic cancer was, according to Butlin, "a dire disease," it was quite otherwise with intrinsic cancer: there was probably no other region of the body where operation for cancer could show anything like the satisfactory results that could be obtained when the disease occurred in the interior of the larynx and was removed by laryngo-fissure. There were two principal reasons why statistics and reports were not more frequently forthcoming: (1) Many cases did not consult a laryngologist for a persistent hoarseness until too advanced for a successful operation, and (2) cancer of the larynx was not a common disease. Ten cases had been operated on between the years 1900 and 1910, a period of ten years. The duration of the cure in each case from the date of operation to February, 1912, had been as follows: 1 case, 7½ years; 1 case, 4 years 4 months; 1 case, 3 years; 1 case, 2 years 2 months since laryngectomy; 1 case, 2 years 1 month; 2 cases, 1 year 3 months. One case died from other causes 15 months after operation, 1 case died from cancer of the tongue on the opposite side three years after operation and without local recurrence, and 1 case died from local recurrence. The conclusions to be drawn from this record could be stated fairly briefly. All the patients were male. Their ages varied between 43 and 68. Five, or 50 per cent., were under 50, 4 were between 50 and 60, and 1 was nearly 70. In no case did thyrotomy reveal any error of diagnosis. The death-rate from the operation was *nil*. Only 1 case was dead from local recurrence. A second case died from separate development of cancer in another part of the body. A third patient was dead from another cause. Laryngo-fissure alone had yielded a lasting cure in 80 per cent. of cases. Laryngo-fissure, supplemented by excision of the larynx in a case of local recurrence, had preserved 90 per cent. of the patients. In the only two cases in which there was local recurrence the disease reappeared within the year following the operation of laryngo-fissure. This fully confirmed Sir Felix Semon's conclusion that there was little or no anxiety as to return of intrinsic cancer if the larynx remained free for 12 months. Some points of diagnosis—mobility of the affected cord and preliminary microscopic examination of removed portion—were then referred to, and the paper concluded with some consideration of anæsthesia and surgical technique.

Sir FELIX SEMON said he was glad that Dr. StClair Thomson's experience bore out the points which he (Sir Felix Semon) had emphasised in his paper five years ago. At one time the operation of laryngo-fissure had fallen into disrepute and for ten years no one attempted it, but it was the late Sir Henry Butlin who had restored it to its proper position. He thought that there was some improvement in recent years in the stage at which patients were sent by practitioners, but there was still room for further improvement, not only in England, but all the world over. After long-continued hoarseness patients should be sent for efficient examination by a specialist. He thought that many of the so-called recurrences were not really recurrences, speaking scientifically, because they did not occur either at the site of the original growth or in lymphatic connexion with it. Occasionally, too, the second growth was of quite a different kind. He still held to the statement that if recurrence did not occur within one year the patient would probably remain free. He emphasised the importance of occlusion of the lower air-passages during the operation.

Mr. P. R. W. DE SANTI said that he had operated upon eight cases for intrinsic cancer of the larynx within 12 years. Seven were men. One was wrongly diagnosed as sarcoma, and proved to be a benign papillary growth. One had recurred 14 months later in the glands. The longest period of immunity after the operation was 11 years. As the result of experimental injections to show the distribution of the lymphatics, he still held that the division into extrinsic and intrinsic growths was the most satisfactory. All the seven cases recovered.

Mr. E. B. WAGGETT said that epithelioma of the larynx was a disease of extremely low malignancy, and consequently was especially suitable for operative treatment—facts which were imperfectly recognised by the profession generally. In order to obtain such cases early enough, it should be insisted upon that all practitioners should be able to see the inside of a larynx during life before they passed their final examinations.

Mr. HERBERT TILLEY recorded a case in which the operation had been successful for 13 years. Then the patient died, and a hard button-like epithelioma was found post mortem. Another case illustrated the slight degree of malignancy, since symptoms were present for five years before the diagnosis was confirmed, and operative treatment was deemed necessary. He did not think that bleeding after the operation was due to adrenalin having been used, but rather to the degenerate state of the arteries in elderly patients.

Dr. G. WILLIAM HILL said that, in his opinion, primary extrinsic cancer of the larynx did not exist. He thought that the cases described that evening were not so much characteristic of intrinsic cancer of the larynx as of cancer of a small area of the larynx, "the vocal cord area." These were peculiarly operable. What he had called "party-wall" cancer was not so suitable for laryngo-fissure, as it soon spread and became extrinsic.

Dr. W. H. KELSON read a paper on "Aching Throat." He pointed out that although not serious to life aching throat was important, because very common, very depressing, and very persistent. The patients were mostly middle-aged, and might belong to either sex. They might show the various signs of chronic pharyngitis and other local pathological conditions, but these might be entirely absent and the throat appear normal. Anæmia, gout, or rheumatism might be present, but the treatment of these alone seldom cured the aching. Most commonly the patient suffered from flatulent dyspepsia with constipation. The nerve-supply was exceedingly rich and varied, but, on the other hand, the sense of locality in the pharynx was very vague, consequently pain was often referred to parts in this region other than those actually stimulated. Neurotic conditions and over-use of the voice would not explain the majority of cases of "aching throat." A number of cases were then referred to, including two in which the cause had been salivary calculus. Since dyspepsia was by far the most common associate of aching throat, this must especially be treated, the assistance of a dentist was very often necessary, and the question of diet must be carefully gone into. Cleansing washes and gargles might be used for the throat and nose, but operative treatment had better be avoided in the first instance. The aching might be due to toxins, or perhaps be a referred pain from the stomach.

OPHTHALMOLOGICAL SOCIETY.

Exhibition of Cases.

A CLINICAL meeting of this society was held on Feb. 8th, Mr. J. B. LAWFORD, the President, being in the chair.

Mr. ROBERT W. DOYNE showed a case of Guttate Iritis. He said that he had never seen a case in a man. The guttæ were independent, in position, of the inflammatory points. The guttæ within a few days might have completely changed their position. In this patient a week ago there were four well-marked guttæ, but now there was only one. It seemed to be an exudation between the layers of epithelium where it was reflected; usually the subjects of the condition were gouty.—The PRESIDENT reminded the members of the cases shown by Mr. Doyne two years ago, and they seemed to have occurred only in cases of chronic iritis. If the condition happened in acute iritis it might be missed in the general haze.

Mr. CHARLES WRAY showed three cases of Frontal Sinus Disease, with pathological specimens; also a severe case of Ingrowing Lashes treated by the electro-cautery. He said that although Siegler advocated that for entropion the cautery should be at a white heat, his own experience was that it was better at a dull red heat, and he preferred the thermo-cautery.

Mr. WRAY also showed a Cyclo-photometer and described his method of testing.—The matter was discussed by Mr. C. A. WORTH, who referred to a book he published ten years ago on the subject.

Mr. G. COATS exhibited a case of Unilateral Proliferation of the Uveal Pigment, and Mr. E. TREACHER COLLINS one of Unilateral Melanosis of the Uvea and Sclera, with elevations on the affected eye. These were discussed together. Mr. Coats said there was evidence that the spot was there shortly after birth, and it had increased considerably in the last year. There was increased pigmentation of iris, fundus, and sclera. The point of most interest was the presence of elevations on the surface of the iris. Twenty-six cases of the kind had been recorded, and of those no fewer than seven developed sarcomata in the eye late in life. The commonest age for it to occur was between 50 and 60, and the age of the youngest case recorded was 34. Mr. Treacher Collins said he had his case under observation and care, backwards and forwards, for ten years. Not every case of melanosis showed elevations on the iris. Some years ago he showed, at the society, sections at the seat of melanosis, apparently dating from birth, in a man aged 60. He thought it was melanotic sarcoma of the ciliary body. He recently re-examined that section and found it remarkably free from elevations.—Mr. F. HEWKLEY raised the question whether it was the rule for the irides to be a light grey colour at birth.

Mr. LESLIE J. PATON showed a case of Holes in the Macula, which he considered differed from ordinary cases of the kind and from the 15 cases collected in Mr. F. M. Ogilvie's paper in the fact that the hole had a bluish-white background. There was no history of injury in the case, yet there was some evidence that it was a recent occurrence. There had evidently been considerable retinal disturbance all round the macular region. Apart from the holes, the general appearance was like that of albuminuric retinitis, but there was no trace of albumin in the urine and no other organic disease.

Mr. R. A. GREEVES showed again a patient with Recurrent Unpigmented Tumour of the Sclera, the case having been brought forward originally in October last. Removal was done, and later there seemed to be a recurrence, but the scar tissue which began to form seemed to strangle the tumour, and it had now disappeared. The first tumour was pronounced to be a very cellular hæmangioma.

Mr. J. F. CUNNINGHAM showed two cases: (1) Cholesterine Crystals in the Anterior Chamber; (2) Retinal Hæmorrhage and Exudation in a young subject. The second case he regarded as one of vascular disease.—The PRESIDENT, discussing Mr. Cunningham's second case, said he saw the lad in hospital and no condition had been found which was likely to be causally related to the eye condition; nothing, for instance, in the blood-cell count, or the coagulation time, or the presence of any bacterial condition. The possibility of lead-poisoning had also been excluded.—Mr. DOYNE considered that the case belonged to the class which Mr. H. Eales

had worked at, and which he called spontaneous hæmorrhages, but which had not had much light thrown on them. He tried to find out something about the condition years ago, and was convinced that the veins, not the arteries, were responsible for the hæmorrhage. The cases seemed to be limited to men, but not to young men, as Mr. Eales thought. The whole eyeball might appear to be suddenly filled with blood. The cases which he had seen recovered, sometimes with very good vision, leaving some silvery stains in the retina, and sometimes some membrane in the vitreous. In one case he found that the blood tension was very low. The von Pirquet test was positive.—Dr. T. HARRISON BUTLER said Professor Axenfeldt had proved several of these diseases to be due to alterations in the retinal vessels, and he pointed out that nearly all the cases had a tubercular basis.—Mr. PATON did not agree that these cases were analogous to cases of intravitreous hæmorrhage. One case he saw had some cranial nerve palsy.—Dr. E. FARQUHAR BUZZARD said he knew the case to which Mr. Paton alluded. It was not a case of true Bell's palsy, because only certain fibres of the facial nerve were affected. He thought it might have been due to a local hæmorrhage in the facial nucleus or the facial nerve. One could easily imagine, following on Mr. Doyne's suggestion, that it might be caused by a small tubercle in the pons.—Mr. CYRIL H. WALKER referred to the case of a man, aged 21, who was healthy, but the sight of one eye was bad. He had many streaky-looking hæmorrhages in the nerve fibre layer—there were ten fairly large ones, the largest a quarter the size of the disc, and there were 20 smaller ones. In three weeks the sight improved a great deal. There was no macular star. Two months later the patient had a very large intra-ocular hæmorrhage which blotted out everything. That remained opaque until two months later, when it began to get translucent. The treatment was mainly rest, and the patient was also given some mercury.—Mr. D. LEIGHTON DAVIES related the case of a male clerk, aged 19, who came complaining of severe headaches, and that a few days previously he was blind in his left eye. In the fundus striate hæmorrhages were found over the retina, and dilatation of the vein with white exudation in the macular region. It looked like a case of albuminuric retinitis, but a physician found the urine normal.—Mr. W. H. H. JESSOP considered such cases were somewhat allied to Raynaud's disease or even hæmophilia; the subjects of it, when struck, rapidly became bruised. There seemed to be some defect in the coat of the arteries leading rapidly to transudation.—The discussion was continued by Mr. RAYNER BATTEN and the PRESIDENT.

Mr. A. H. P. DAWNAY showed a case of Persistence of Anterior Portion of Hyaloid Artery.

EDINBURGH MEDICO-CHIRURGICAL SOCIETY.

Exhibition of Cases.—Tuberculous Peritonitis in Adults.—Ortho-Roentgenography of the Heart and Aorta.

A MEETING of this society was held on Feb. 7th, Mr. J. M. COTTERILL, the President, being in the chair.

Mr. CHARLES W. CATHCART showed: 1. A female patient after Removal of a Calculus from low down in the ureter. The woman had been subject to frequent attacks of severe renal colic during the last two years. A renal calculus had been removed from her in another hospital some months previously. Her attacks, however, continued as before and she was sent to Mr. Cathcart. An X ray photograph showed a stone lying low down in the left ureter. This ureter was exposed by an extra-peritoneal operation, the ureter opened above the brim of the pelvis, and the stone removed with a loop of copper wire mounted on a handle. 2. A patient after Wiring of the Humerus; Musculo-spiral Paralysis following. Paralysis of motion was observed shortly after the accident, but sensation remained nearly complete. At the operation the musculo-spiral nerve was found to be stretched over the upper fragment, which was displaced backwards and was involved in callus. The bones were replaced and wired; the nerve was freed, and recovery was steadily advancing.

Dr. G. L. GULLAND showed: 1. A case of Myxœdema occurring in a woman aged 44. She had complained of swelling of the face, neck, and eyes during the past three years with weakness, loss of appetite, and breathlessness. Her temperature was subnormal, the face swollen, and the features coarse. Her skin all over was dry and thick, not pitting on pressure. The right lobe of the thyroid was enlarged; nothing was to be noted in the blood or urine. Mitral stenosis was present, and the case was as yet untreated. 2. A case of Tabes Dorsalis. The patient was aged 83. There was a history of spinal disease, dating 17 years, and treated by stretching. There was no history of syphilis; Argyll Robertson pupil and Romberg's sign were present, also general muscular weakness with absence of the deep reflexes; incoördination was marked with indefinite impairment of common sensations. Lymphocytosis was present in the cerebro-spinal fluid, and Wassermann's reaction was negative. Partial paresis of both third nerves was present with hemiatrophy of the tongue.

Professor F. M. CAIRD showed a case of Entero-vesical Fistula in a man aged 51. He discussed the causes, the advantages of cystoscopy, and laparotomy. He described the separation of the carcinoma of the sigmoid from the base of the bladder, and how enterectomy had to be performed for removal of the carcinoma; how the bladder wound was closed, end-to-end union of the intestine was accomplished, and finally appendicostomy was performed.

Professor CAIRD read a paper on the Treatment of Tuberculous Peritonitis in Adults by Operation. In every instance definite evidence of the lesion was ascertained, and only those cases were considered in which peritoneal invasion was the chief manifestation of the disease. Consequently, early examples of tuberculous appendicitis, tuberculous stricture of the intestine, and tabes mesenterica were excluded. On the other hand, tuberculous disease of the Fallopian tubes and ovaries, with marked extension to the peritoneum, and also cases of general adhesive tuberculous peritonitis with infiltration of the serosa and other coats of the bowel were included. For convenience a common classification was adopted, consisting of a series of types running into each other, but which might be placed under the headings of: (1) Cases with fluid exudate predominating; (2) the same plus adhesions and matting, with the exudate sometimes encysted; (3) dry forms with or without adhesions; (4) dry adhesive forms in which the peritoneal cavity was practically obliterated, and in which there might also be an extension to the intestinal wall from the serous surface inwards. The general symptoms presented by the disease were fairly uniform and well recognised. They were best marked in the exudative varieties. The patient complained of a progressive, sometimes slightly intermitting, swelling of the abdomen. There were abdominal discomfort and pain, loss of strength and weight, and constipation was usually present. As the distension increased nausea and vomiting arose, the urine became scanty, and there was frequency of micturition. If there were in addition marked adhesions and infiltrations of the omentum, localised resistant areas and tenderness might be discovered and the general abdominal doughy feeling so often present was familiar. The dry varieties were still more likely to be associated with localised tenderness and resistance; diarrhœa suggested implications and kinking of the intestine. As a rule there was but little rise in the temperature; the pulse-rate was apt to increase with the abdominal distension as also the respiration. The antecedent history was helpful in confirming a diagnosis, and the patient might have enlarged cervical and axillary glands, a tuberculous apex, or may retain the memory of an old pleurisy. Moreover, similar histories of tubercle occurring in the immediate relatives might be elicited. Definite evidence on this point was only positive in 11 out of 31 cases. It was a curious fact that trauma had not been recognised as a factor in causing tuberculous peritonitis, and only two of the cases stated that they had a previous abdominal strain. In two women the condition followed closely on their last confinement. It was interesting to note that in three cases, after excellent recoveries from operations for ruptured gastric ulcer, for duodenal ulcer, and for gastic carcinoma, the three patients returned with tuberculous peritonitis. In no case during the previous laparotomies had there been any indication of tubercle observed. As regards sex there were 13 males and 18 females. The males were from 17 to 60 years of age, averaging 32; the females from 13 to 51, averaging 22 years. In but few cases did the diagnosis present any difficulty, although it must be admitted that of the older patients some were subjected to operations with a possible diagnosis of

malignant peritonitis, and it is still more instructive that the conditions found on incision so closely simulated that disease in every detail that only the microscopic examination of removed portions of diseased peritoneum and tissue removed, as also the after-history, demonstrated the true nature of the pathological process. Most of the patients were referred to the surgical ward after having undergone treatment by the physicians on the medical side. The surgical treatment consisted in an incision midway between the umbilicus and the symphysis pubis, and occasionally in the linea semilunaris or ileo-cæcal region, according as circumstances seemed to demand. On opening the peritoneal cavity an attempt was made to discover and remove any abdominal focus. This was seldom successful, since no prolonged search seemed advisable, and only on two occasions was it thought right to remove tuberculous tubes and ovaries. In two others masses of infiltrated omentum were excised. In such cases, and also where the exudate was purulent, a drainage-tube was employed for a short period, and the peritoneum was gently douched with warm sterile salt water. In the majority of cases, after freeing adhesions and evacuating the fluid, the abdomen was at once closed. The dry and adhesive type of tubercle required great care in manipulation, more especially in dividing the thickened peritoneum, which was often almost inseparably blended with the subjacent coil of bowel. In one patient, despite special vigilance, the bladder was accidentally opened; it lay 1½ inches above the pubes and was fused with the parietal peritoneum. In two other cases the separation of adhesions gave rise to laceration of infiltrated small intestine, and a double enterectomy became necessary. Two cases of fæcal fistulas followed simple exploration in purulent cases; one healed, the other ultimately succumbed. The immediate results of operation were that of 31 cases 27 recovered. Of 13 males, 2 died; and of 18 females, 1 died after operation. Of the males, one was an emaciated youth, aged 18, who had suffered for 18 months with abdominal swelling, pain, tenderness, vomiting, and diarrhœa. He had a large hour-glass abscess of the abdomen and pouch of Douglas, which also contained gas and fæces. After drainage and enterectomies he at length sank, four months later, from general tuberculosis. The other one died within 16 days from a general tuberculous peritonitis, with marked additional tubercle of the lungs, liver, and spleen. The female, who was aged 17, sank 19 days after operation from general tuberculous lymphadenitis and tuberculous peritonitis. All of the dry varieties healed, although such cases are not regarded so favourably from a surgical standpoint as those which abound in fluid. All of the patients with two exceptions reaped direct benefit from operation. Two showed no improvement and eventually died. Whatever temporary good may follow operation it is mainly by the ultimate gain that the value of surgical intervention must be gauged. It is unfortunately no easy matter to supply this. Not only is it difficult to trace cases, but should the patient have died since leaving hospital definite information as to the cause of death is rarely forthcoming. Of the 27 recoveries 10 cannot be traced. Nine died at varying periods. Eight are known to be alive and well: one 9 years, four 5 years, one 4 years, one 3 years, and one 2 years after operation. If such results are not brilliant they at least justify surgical treatment. The general condition of patients suffering from tuberculous peritonitis is always bad; their nutrition, their resistive powers are very low. None of the cases were selected; they were all in poor condition and, as already stated, the greater number had ceased to respond to the aid of the physician, and it is only after a fair trial of medical measures that the question of operation should be entertained. The curative effect of laparotomy has been ascribed to various factors—the removal of a passive injurious effusion, thus relieving the general tension, the favouring influence of the succeeding hyperæmia of the peritoneum which ensues, and the preparing of active antibacterial fluid all play their part. Bumm has found on following a first laparotomy by a second that the tubercles on the second occasion were invaded by lymphoid cells and deprived of their bacilli. Only one of the series had been treated with tuberculin as far as was known. It would probably be a wise thing to make use of this adjuvant both before and after operation in all such cases.—A long and animated discussion took place at the conclusion of the paper.

Dr. W. HOPE FOWLER and Dr. W. T. RITCHIE read a paper on Ortho-Roentgenography of the Heart and Aorta (with lantern demonstration). The technique of the method having been described, the normal cardiac outline was discussed. There are two curves of the right side, and either three or four on the left. The variations of these curves in health, their form and pulsations, were indicated. The respiratory movements of the heart are more extensive than the pulsatile, and the form of the cardiac silhouette differs according to the phase of respiration at which the record is taken. The records were measured according to Groedel's method, measurements being also taken from the patient's right fist as standards, according to Levy-Dorn and Möller, for the size of the normal heart. Pathological conditions affecting the heart are more readily characterised by alteration of the cardiac silhouette than by variation in size alone. In well-marked cases of mitral incompetence the two lower curves on the left side are prominent. In mitral stenosis, with the auricular musculature contracting in a coördinate manner, the heart is rather vertical, the outline curves are sharply demarcated from each other, the left auricular and pulmonary curves are especially prominent, while that of the left ventricle may be diminished. Mitral stenosis, with auricular fibrillation, is characterised by a large, globular heart, with bulging of the pulmonary and both auricular curves. In aortic incompetence the "recumbent egg-form" is not constant, although the curve of the left ventricle is enlarged. Combined aortic and mitral incompetence presents a larger and more dilated heart. Illustrations were also shown of orthodiagraphic outlines from cases of mediastino-pericarditis, patent ventricular septum, patent ductus arteriosus, chronic interstitial nephritis, and aortic aneurysms. The orthodiagraphic and percussion outlines of various hearts were compared with one another, and it was shown that the left border of the heart and the upper limit of the liver, as ascertained by firm percussion, frequently lie too far to the left and too high respectively, while the right percussion border may be too near the mesial line. Owing to the oblique position of the heart within the thorax the basal portions of the heart offer special difficulty to accurate delimitation by means of percussion. The position, size, and form of the heart cannot be delimited so accurately by percussion as by the orthodiagraph.

LEEDS AND WEST RIDING MEDICO-CHIRURGICAL SOCIETY.—A meeting of this society was held on Feb. 2nd, Mr. H. Littlewood, the President, being in the chair.—Mr. J. A. Coupland read a paper entitled "A Year's Experience of Salvarsan." He referred to 20 cases treated in the primary and secondary stages of the disorder. The treatment in the earlier cases had been by intramuscular injections; latterly by two intravenous injections of 0·5 or 0·6 gramme. The average period of observation had been six months. In two cases recurrence of secondary symptoms had followed at two and seven months' intervals after intramuscular injections. In one primary case recurrence had followed one month after 0·6 gramme intravenous injection. In all these cases further intravenous injections had produced a rapid disappearance of symptoms. In one case recurrence was present after two 0·6 doses, given intravenously. In two cases, in spite of a negative Wassermann, enlargements of lymphatics were still present, and he did not regard the cases as cured. In two cases the reaction had been alarming; in one this was immediate and to be attributed entirely to faulty technique. The solution injected was not clear, but showed a flocculent precipitate. This was given at a time when the giving of an emulsion intravenously was recommended, a method which was now entirely abandoned. In the second case two intravenous injections—0 6 gramme in a clear, slightly alkaline solution—had been given at a fortnight's interval to a patient who had contracted the disorder seven years previously. The reaction after the first dose had been very slight. Three days after the second the patient became dazed; on the fourth day he became comatose and had epileptiform convulsions and remained in this condition for two days. A complete recovery had followed. Mr. Coupland, after commenting on the similarity of this case to others recently reported, was inclined to attribute this alarming train of symptoms to the short interval between the injections and to the fact that the patient had not been confined to bed after the second injection. No symptoms of cerebral syphilis had been observed before the injections; the patient had lived a healthy life, but was in a very restless and worried condition before treatment. Half of

the cases treated had, however, been treated with a similar dosage without any bad symptoms, and in only two had the second reaction been slightly more pronounced than the first. He was inclined to advise a period of two months between the injections, and the maintenance of at least three days in bed both before and after every injection. A review of the fatal cases already recorded showed that faulty technique and the inclusion of cases of gross cerebral, arterial, or renal lesions were responsible for the great bulk of the fatalities. Further knowledge of the rate of excretion of the drug and the factors which disturbed it was needed before the degree of danger attached to this treatment were definitely determined. He laid stress on the fact that the most satisfactory results had so far followed the treatment of the primary stage of the disorder before a positive Wassermann had appeared; the diagnosis should first be corroborated by the finding of the specific organism. The importance of following up the cases so treated and the necessity of accumulating evidence of the permanent value of the treatment were referred to. Mr. Coupland thought that the obliteration of the secondary stage was already more rapid, more easily obtained, and more complete than could be obtained by mercurial treatment. The resulting improvement of the patients' health, as evidenced by absence of anæmia, by increase in weight, and by their frequently expressed sense of well-being, contrasted favourably with the conditions noted under the older treatment of the same class of hospital patient. The more rapid and complete obliteration of the secondary stage was regarded as of distinct value to the community, as it must surely diminish the risk of accidental infection of the family and associates of the syphilitic. The question of a subsequent course of mercury was at present an open one; it would certainly have to be adopted where a positive Wassermann persisted after repeated injections of "606." Its routine adoption could only stultify the experience which everyone was anxious to obtain as to the ultimate value of the remedy.—Cases and specimens were shown by Mr. J. F. Dobson, Dr. G. W. Watson, Dr. Alex. Sharp, Dr. T. Churton, Dr. J. B. Hellier, Mr. A. L. Whitehead, Dr. R. A. Veale, Mr. L. R. Braithwaite, Dr. C. Oldfield, Mr. W. Gough, Mr. H. Littlewood, Dr. T. Wardrop Griffith, and Dr. W. H. Maxwell Telling.

SOCIETY OF MEDICAL OFFICERS OF HEALTH.—A meeting of this society was held on Feb. 9th, Professor A. Bostock Hill, the President, occupying the chair.—Dr. G. A. Auden, in a paper on Open-air Schools, said that during the last decade popular imagination had been aroused to a recognition of the value of fresh air in the treatment of tuberculosis, but just as the value of sanatorium treatment for phthisis was very largely the education or effect which its popularity had upon the community, so, too, would this be the case with open-air schools. Valuable as such institutions would be to the individual child who was fortunate to obtain admission, they would fail of their chief opportunity if they did not lead to the application of similar open-air principles to the organisation of ordinary elementary schools. Open-air schools of the Charlottenburg type had now been established by several local education authorities in England, notably in Barnsley, Halifax, London, Norwich, Sheffield, Bradford, and Birmingham. In the two last-named towns buildings had been specially erected; in the others existing buildings had been adapted. After describing in some detail the Birmingham school, which was the gift of Mr. and Mrs. Barrow Cadbury, Dr. Auden stated that during the four last months of last year when it was occupied 89 children were in regular attendance. Of these, 35 per cent. showed great improvement, 50 per cent. some improvement, and 15 per cent. remained stationary. Investigations had shown that about 10 per cent. represented the number of school children whose malnutrition and depressed vitality called urgently for education on open-air lines. The same principles which underlay the open-air school organisation could be applied without difficulty to the school curriculum in the most crowded areas of a manufacturing city. One of the means which lay readiest to hand was the provision of playground classes. Finally, Dr. Auden insisted that the management of an open-air school should remain a matter entirely under the jurisdiction of the school medical officer.—Dr. E. W. Hope considered that all developments such as open-air schools must have an enormous influence in improving the condition of all schools, for it must be realised that even good schools are very far behind what is considered necessary. He approved of playground and roof classes.—Dr. W. Butler urged that if an open-air school was of such value to children below normal to whom exposure might be considered to be serious, how much more valuable should they be to the normal child. He thought that existing schools might be simplified and that permanent structures were not necessary, and advocated the closing of the sides of a school building by means of canvas stretched on wood, so that any or every side might be more or less completely opened.—Dr. C. Sanders deplored the apathy and want of interest among teachers who were afraid of draughts and had not been educated on modern lines.

NORTHUMBERLAND AND DURHAM MEDICAL SOCIETY.—An meeting of this society was held in the Royal Victoria Infirmary, Newcastle-on-Tyne, on Feb. 8th, Dr. A. Angus Martin being in the chair. The evening was devoted to the demonstration and discussion of medical and surgical cases as follows.—Dr. Martin showed a woman in whom he had removed the uterus for Chorion Epithelioma, and in whom there was evidence of secondary lung involvement, bloody expectoration, &c. She was in excellent health, some months having elapsed since hysterectomy. The specimen was also shown.—Dr. T. Beattie exhibited a boy, aged 18, the subject of Acute Chorea, accompanied by maniacal symptoms. He enlarged on the urgency of inducing sleep by heroic doses of hypnotics. The boy had mitral stenosis with regurgitation.—Mr. A. Parkin showed a case of Cervical Rib, on either side the rib pressing on the lower trunk of the brachial plexus and producing nervous symptoms, neuralgia, paræsthesiæ, &c. An operation had been performed on both sides, with cure on the right and some relief on the left side.—Mr. Parkin also brought forward a case of Irregular First Rib, its anterior end being deficient, and not coming up to its sternal articulation, but appearing to be attached to the upper surface of the second rib. The inner end of the clavicle was also malformed and less prominent than its fellow. The deformity was undoubtedly a rare one.—Mr. H. B. Angus showed a man from whom he had removed a large Sarcoma of the Thigh. The seat of disease was being treated with Coley's fluid, the dose having been increased to 10 minims. The patient was in good condition.—Dr. R. A. Bolam showed a case of Carcinoma of the Male Breast, which was receiving X ray treatment, and which exhibited a very marked degree of fibrosis and contraction. He also showed cases of Nævus Linearis and Pemphigus.—Mr. W. G. Richardson demonstrated a case after operation for Ruptured Gastric Ulcer, which was followed by pleural infection and empyema. It was of interest that on admission, four hours after rupture, pleural implication was suspected and constantly watched for.—Mr. J. Clay exhibited a case of apparent Spontaneous Cure of Epithelioma of the Penis in a patient with undoubted syphilis. The microscopic report was only "suggested" epithelioma, and thus the disappearance of the lesion under iodide and mercury might be accounted for by its being a gumma of the penis.—Dr. Hamilton Drummond showed a case of Traumatic Cerebral Hernia following Compound Fracture in the Right Temporal Region. Spontaneous cure was looked for.—Dr. Horsley Drummond showed a case of Cachectic Infantilism, the patient being 22 years old, and 4 feet 6 inches in height. He had markedly enlarged liver and spleen and considerable dyspnœa. A positive Wassermann reaction had been obtained, while no evidence of pancreatic disease could be demonstrated. It was suggested to be of pituitary origin.

DEVON AND EXETER MEDICO-CHIRURGICAL SOCIETY.—A meeting of this society was held on Feb. 9th, Dr. R. V. Solly, the President, being in the chair.—Dr. F. W. Price (London) read a paper on Recent Advances in Heart Disease. The paper was illustrated by the polygraph. He contrasted the respective rates of advance of medicine and surgery. He then discussed cardiac irregularities in patients with no evidence of valvular disease, and the diverse results of treating identical lesions with digitalis. He reminded his hearers that irregularity might be the only detectible physical sign of myocardial degeneration. He maintained that the variability of action of digitalis was due neither to caprice nor to diversity of the preparations of the drug. The enormous advance in knowledge of cardiac disorders was largely related to the graphic methods rendered possible by the advent of the clinical polygraph. Dr. Peric

then demonstrated the Mackenzie polygraph. He laid especial stress on the importance of studying the *a.-c.* interval with a view to accurate comprehension of the conductivity possessed by any given heart. By means of the polygraph irregularity, from being a vague and complex unity, had now become a classified disease. Dr. Price then passed on to the problem of digitalis, and stated that those cases of cardiac failure which showed markedly good results were cases of auricular fibrillation. In conclusion, he pointed out the harm which would accrue from the exhibition of digitalis in cases of depressed cardiac conductivity, and hence the importance of the investigations now made possible by the graphic methods.—The President, after thanking Dr. Price on behalf of the society for his interesting and valuable paper, discussed the question of cardio-sclerosis without valvular lesion. He also asked Dr. Price what value he attached to the use of strychnine in cardiac disease and what treatment, if any, was of value in cases of heart-block.—Dr. A. E. Carver mentioned his frequent observation of a dropped beat form of irregularity in senile cases exemplifying sinus irregularity. He had found the polygraph invaluable both at the beginning and end of treatment as a gauge of progress. He endorsed the value of digitalis in massive doses where irregularity was related to auricular fibrillation.—Dr. Price, in reply, said that the action of strychnine, so far as was known, appeared to be *viâ* the blood-pressure apparatus. No drug had yet been found capable of stimulating the ventricle in heart-block.

WIGAN MEDICAL SOCIETY.—A meeting of this society was held on Feb. 8th, Mr. F. L. Angior, the President, being in the chair.—Dr. R. Prosser White showed: 1. Acrodermia Neuritica. The patient sustained an injury to the right hand and forearm four years ago. At the present time there was progressive atrophy of all the constituents of the forearm and hand, bone, muscle, and skin. The latter was exceedingly thin, ulcerated in places, and acutely sensitive. Also X ray photograph. 2. Dermatitis Artifacta. A girl, about 16 years old, whose only symptom was the appearance about once a week of one or more bullæ on left arm and shoulder. These arose in the night and were first seen when she got up in the morning. She was admitted as an in-patient and treated by rest, isolation, suggestion, and feeding, and no fresh bullæ had appeared. 3. Molluscum Fibrosum. A woman with warty-looking fibroid growths in the left axilla. Also section of one under the microscope.—Dr. Harry Holmes showed: 1. A case of Tumour of the Pituitary Gland. A man, aged 27, height about 4 feet, at present nearly blind, and suffering from enormous protrusion of both eyeballs. Hair scanty and thin. Reproductive organs elementary. He had fits of some kind at the commencement of his illness, and then bi-temporal hemianopsia. Dr. Holmes referred to the two types of case due to pituitary tumour. The man had been seen by several surgeons, but operation had not been advised. 2. A case of Xerosis of the Conjunctivæ. The right cornea was now quite opaque, and the left was rapidly following. This condition he considered was due to some general systemic disease, such as congenital syphilis. The case has been under a variety of forms of treatment—antisyphilitic, thyroid, tubercular, &c.—but steadily retrogresses.

UNIVERSITY COLLEGE, DUBLIN, MEDICAL SOCIETY.—A meeting of this society was held in the College on Feb. 8th, Mr. J. S. McArdle being in the chair.—Professor E. J. McWeeney read a paper on Recent Views as to the Nature and Causation of Cancer. He outlined the various theories generally held, and emphasised the importance of the "irritation theory," but said that in cases where irritation gave rise to malignant disease they had to suppose another factor in the case—viz, the presence of a certain abnormal type of cell, the exact characteristics of which were still unknown. He outlined the work done, and still being done, in England, Germany, and other countries, on the inheritance of malignant disease in mice, and showed lantern slides of tables summarising the results. He also referred to the interesting results obtained in the endeavour to produce immunity from malignant disease in mice by the injection of pieces of embryonic mouse tissue. In spite of these results in mice the lecturer was of opinion that they were by no means as applicable to man as might be supposed, and suggested that the most fruitful line of work would be that of Wassermann, who has been trying to find, already with some measure of success, a synthetical drug capable of picking out the cancer cells and destroying them.[1]—The subsequent discussion was taken up by Dr. W. M. Crofton, Dr. J. H. P. Boyd Barrett, Mr. J. H. McAuley, Mr. H. S. Meade, and Dr. M. R. J. Hayes.

NOTTINGHAM MEDICO-CHIRURGICAL SOCIETY.—A meeting of this society was held on Feb. 4th, Mr. M. Parry Jones being in the chair.—Dr. A. C. Reid introduced a discussion on Trauma as a Factor in Some Diseases of the Nervous System. The subject of brain tumour and brain abscess was briefly referred to. More detailed reference was made to late traumatic apoplexy and meningitis, the work of Duret and Bollinger being specially mentioned.[2] Quincke's meningitis serosa was next brought under review: an interesting case published by Kurt Mendel and a recent case of acute acquired hydrocephalus following on shock being adduced as evidence of a possible traumatic origin for this rare condition. Myelitis and myelodelesis (Kienböck) were rapidly reviewed. Under the heading of "neuritis" special notice was taken of Erb's shoulder-arm paralysis. The paper concluded with remarks on traumatic epilepsy.—Mr. Parry Jones, Dr. F. H. Jacob, Mr. K. Black, Mr. A. R. Tweedie, Mr. A. M. Webber, and Dr. R Heelis continued the discussion.

Reviews and Notices of Books.

A Text-book of Physiological Chemistry. By OLOF HAMMARSTEN, Emeritus Professor of Medical and Physiological Chemistry in the University of Upsala. Authorised Translation from the Author's Enlarged and Revised Seventh German Edition. By JOHN A. MANDEL, Sc.D., Professor of Chemistry in the New York University and Bellevue Hospital Medical College. Sixth American edition. London: Chapman and Hall, Limited; New York: John Wiley and Sons. Pp. viii.–964. Price 17*s.* net.

THIS edition differs from the earlier ones by containing a new chapter on "Physical Chemistry in Biology," written by Professor S. G. Hedin, of Upsala. To give room for this new chapter, without changing the number of chapters in the earlier editions, the chapter on "The Animal Cell" has been dropped and its contents incorporated in other chapters. Otherwise the general plan remains unchanged, though necessarily with the great advances in physiological chemistry a considerable increase in the size of the book could not be prevented. The subjects successively dealt with after the introduction are: Physical chemistry in biology; proteins; carbohydrates; fats and phosphatids; blood; chyle, lymph, transudates and exudates; liver; digestion; connective tissues; muscles; brain and nerves; organs of generation; milk; urine; skin and its secretions; respiration and metabolism. The indexes of authors and the general index are both very full and complete.

It should be noted that there are no illustrations of any kind, either of spectra, apparatus, crystals, or curves, although smaller type is used to mark the less important matter. The result is that the text contains an enormous amount of information, the references to original papers when required being given at the foot of the page. A good, all-round grasp of organic chemistry is required to follow the work.

In the introductory chapter, which is admirably and concisely written, the reader is introduced straight away to the difficult and obscure problem of oxidation in animal tissues, and the newer results on oxidases, and such subjects as enzymes, "enzymotic" action, lipoids, and their suggested uses as a boundary layer in cells, autolysis and allied

[1] THE LANCET, Jan. 13th (p. 112) and 27th (p. 264), 1912.
[2] THE LANCET, Nov. 6th, 1909, pp. 1339 1360.

subjects, while the importance of ions is clearly emphasised. In the chapter on "Physical Chemistry" osmotic pressure, colloids, the importance of the ultra microscope, adsorption, gels, sols, catalysis, enzymes, their specific and their reversible actions, antigens and antibodies, ions and salt action, and allied subjects are treated in an interesting and practical manner.

A very full account is given of the proteins, amino-acids, polypeptides, and all the recent work which has been the outcome of the brilliant and stimulating researches of Emil Fischer. Perhaps on p. 86 "linkage" would be a better expression than "bindings" when the author is speaking of the possible combinations of amino-acids. The fact that no single protein reaction is in itself characteristic is emphasised, and, therefore, in testing for proteins one reaction is not sufficient. A number of precipitation and colour-tests must be employed. On p. 109 "Miesher" is obviously a misprint for Miescher; the name is correctly given elsewhere and in the index. Kühne's view on tryptic proteolysis is rightly set aside in the light of recent research, though, unfortunately, it still finds a place in some English text-books. The amino-acids are fully treated, as are also the purin bases, which in the last few years have attracted great attention both on the part of the chemist and the physician. The account of the carbohydrates and that of the fats are much on the lines of the last edition, but the phosphatids find their natural setting in this edition along with the fats.

Blood is concretely and fully dealt with. Perhaps on p. 243, for "effusion" of the mouth of the medicinal leech, the term "leech extract," as used in English text-books, would be more appropriate. In any case, "effusion" does not seem the correct word. The obscure subject of the origin of fibrinogen is critically discussed. In describing the oxygen absorption by hæmoglobin a curve showing this would be much more effective. We failed to find, either in the text or the index, a reference to the work of Soret on the absorption bands in the ultra-violet part of the spectrum, known in this country as the "bands of Soret," though Gamgee's work on this subject—which was subsequent to that of Soret—is referred to. The occurrence of hæmoglobin crystals in the stomach of the leech and the work of Brito and Stirling seem to be omitted. On p. 295, when speaking of the "tissue fibrinogen" of Wooldridge, instead of "digesting leucocytes with water," perhaps it would be better to state how Wooldridge employed the thymus gland.

Chyle, lymph, and allied subjects occupy pp. 327–359, while the liver is dealt with from pp. 360–425. In speaking of the occurrence of glycogen in the liver of molluscs, the mussel, but not the oyster, is mentioned. The account of digestion is elaborate, but concise. Here, again, curves to show rates of secretion would be valuable as well as helpful. As to absorption and the forces active in the intestine, "the question has not been answered." Consecutive chapters deal with connective tissue, muscles, brain and nerves, organs of generation, milk, and urine, and we find a singular mistake on p. 756 in connexion with the sulphur test for the bile salts in urine. It is attributed to Haycraft instead of Matthew Hay—a mistake that has been made before. The skin and lungs (pp. 789–821) are next considered, and then metabolism (pp. 822–880). A very guarded opinion is given on Chittenden's observations on diet, which will be found on p. 877.

The work is highly to be commended as a treasury of facts and as a critical, well-reasoned exposition of those facts in relation to the chemical activities and processes that occur in animals. We cordially commend it as a text-book and a book of reference.

Diseases of the Anus, Rectum, and Sigmoid, for the Use of Students and General Practitioners. By SAMUEL T. EARLE, M.D., Professor Emeritus of Diseases of the Rectum at the Baltimore Medical College; Surgeon in Charge of Rectal Diseases at St. Joseph's Hospital, the Hebrew Hospital, and the Hospital for Women. With 152 illustrations. Philadelphia: Lippincott Company. 1911. Pp. 476. Price 21*s.* net.

MANY medical men in practice find the knowledge of diseases of the rectum acquired when they were students inadequate for their daily work, and this book may afford them real assistance.

The anatomy and physiology of the rectum are sufficiently described to recall to the reader the essentials. The author considers that in the majority of rectal operations it will be found more satisfactory to use a general anæsthetic, unless its employment is specially contra-indicated. He is opposed to spinal anæsthesia, partly because of the deaths which have occurred under it, and partly on account of some of the sequelæ. A long chapter is devoted to the consideration of the treatment of constipation. The general methods of treatment—such as diet, exercise, and massage—are well descibed, and then the simpler operations for the removal of mechanical obstructions are detailed. An important chapter is that on ano-rectal fistula, and the subject of hæmorrhoids is carefully considered. The author describes a modification of Whitehead's operation, which he has found very satisfactory; it really consists in excising each hæmorrhoid separately and suturing the cut edges together.

Probably the most difficult subject in the surgery of the rectum is the question of the operation to be chosen in removing malignant disease of this portion of the bowel. The author speaks very favourably of a modification of Kraske's operation, by which the portion of the sacrum below the fourth sacral foramen is separated from the rest of the bone and turned to one side, to be replaced in position at the close of the operation. He has never met with necrosis of the portion of bone resected, but he acknowledges that the operation brings with it a large amount of shock. The chief merit of this method of operation is, in his opinion, that it involves injury to the sacral nerves and lateral sacral arteries on one side only. He holds that it is always possible to get sufficient of the bowel down from above to suture to the margin of the anus, and therefore he never finds it necessary to make a sacral anus. He does not consider that the abdominal or combined routes are often indicated.

On the whole, this work is good. The only real criticism to be made on it is that the author is somewhat too prone to quote verbatim the opinions of others, rather than to express the opinions which he has himself formed.

Practical Anæsthetics. (Oxford Medical Publications.) By H. EDMUND G. BOYLE, M.R.C.S. Eng., L.R.C.P. Lond., Assistant Anæsthetist to St. Bartholomew's Hospital; Demonstrator of Anæsthetics to the Medical School of St. Bartholomew's Hospital, &c. Second edition. With illustrations. London: Henry Frowde and Hodder and Stoughton. 1911. Pp. 209. Price 5*s.* net.

Mr. Boyle's text-book has already made a place for itself. It is now enlarged by the addition of a chapter on spinal analgesia and by fuller treatment of the administration of open ether. The chapter on spinal analgesia is not very full, and Mr. Boyle does not, we think, sufficiently differentiate between the value of high and of low punctures. He rather leads his readers to place them on the same level of usefulness, an opinion which we do not imagine he holds himself, and which is certainly, we think, not held by the majority of anæsthetists in this country. His reasoning, however, as to the

selection of spinal analgesia in certain cases and its avoidance as a routine appears to us sound. Having included spinal analgesia, he might for the sake of completeness have added also a chapter on regional and infiltration methods.

In discussing the question of shock Mr. Boyle states that a deep degree of anæsthesia is safer for the patient than a light one. This is a position which many would assail; certainly it needs qualification. Where chloroform is the anæsthetic we believe the exact converse to be true. Sufficient anæsthesia, of course, there must be, but granted complete unconsciousness and absence of conjunctival reflex, then the more lightly the patient is under chloroform during an operation involving severe shock, the more certainly we believe will the circulatory and respiratory functions continue to be adequately performed. The justification for very deep anæsthesia as a preventive of shock we believe to be a relic of the impressions produced in by-gone days by severe reflex symptoms following upon an incision made during incomplete anæsthesia. Further on in his book Mr. Boyle proceeds to show admirably how a deep chloroform anæsthesia in itself imitates the phenomenon of shock. He will therefore, we are sure, agree with us that it is not a condition to be induced when shock is present or anticipated. Mr. Boyle treats of collapse as a terminal condition of shock. It is more often regarded as an analogous condition produced especially by loss of body fluids, shock being due to exhaustion of nerve centres. This is perhaps merely a theoretical question, and at any rate Mr. Boyle's practical directions for treating the conditions are very good, though the employment of strychnine where pure shock is concerned is, of course, deprecated by those who hold that explanation of the condition to which we have referred.

With regard to the use of open ether, of which the author gives a concise account, he approves of the preliminary use of morphine and atropine, but does not mention scopolamine, which is a drug very worthy of consideration in this connexion. He gives an accurate account of the well-known "Bart.'s" method of giving chloroform, one which we think is not to be preferred to the use of some firmer kind of open mask.

Applied Biology: An Elementary Text-book and Laboratory Guide. By MAURICE A. BIGELOW, Ph.D., Professor of Biology in Teachers' College, Columbia University; and ANNA N. BIGELOW, M.S., Teacher of High School Biology. New York: The Macmillan Co. 1911. Pp. 583. Price 6*s.* net.

THIS book is intended by its authors to serve as a combined text-book and practical guide for a year's course of five hours a week. Its scope is wide enough, for it attempts to select from the fields of botany, zoology, and human biology the essential facts, and especially the great ideas, of the science of life which are of interest to the average intelligent person who has no time and reason for more extensive study of biology. The authors have accumulated and set forth in an orderly fashion such a mass of facts—including an account of experiments to demonstrate these facts—that "a year's course" rather understates the case. The authors' outlook is both wide and philosophic, for in its purview it includes the ideas of biology as they apply to human life in its combined intellectual, æsthetic, economic, and hygienic aspects.

Part I. deals with introductory matter and the Principles of Zoology, including such trite subjects as changes and composition of lifeless and living matter, the characteristics of living things, the structure and life of an animal—the frog being taken as the type—the structure and life of a plant with the bean as a type. A comparison of animal and plant biology follows and also a classification of animals and plants. It would appear that there is a "Teachers' Manual of Biology" which is designed to accompany this book, but it has not reached us. There is a concise paragraph on the "justifiable use of animals for science study." We can hardly consider the following a correct or adequate description: "The posterior, conical, whitish part of the frog's heart is called *ventricle*." Some of the physiology is of doubtful character. No indication is found of the size of milk globules (p. 47), while the figure of "a nerve cell and its fibers" can hardly be recognised as typical.

Part II. deals with Principles of Biology, illustrated by Types of Plants, beginning with an excellent and graphic account of "seed-plants," and ending with an attractive description of "spore-plants." In studies of spore-plants, while Pasteur's experiments on yeast are mentioned, the name of C. de la Tour finds no place. Why is not the exact formula of the sugar and other constituents in Pasteur's solution given? In the section on bacteria we looked in vain either in text or index for the name of Lister, while Koch's name is associated in the index with malarial organisms, the compiler of the index never apparently having looked at p. 291, whereon is recorded Koch's salient discovery of the tubercle bacillus.

Part III. deals with Principles of Biology, illustrated by Types of Animals, Invertebrate and Vertebrate, in which a very readable account is given of the subject. The economic relations are interestingly set forth, and it will come as a surprise to many to learn that "Grasshoppers destroyed crops to the value of $200,000,000 in Iowa, Missouri, Kansas, and Nebraska in four years." The statement that "the alimentary canal is essentially the same in all birds" (p. 432) is incorrect. In regard to the respiratory power of birds, we failed to find a reference to the size, number, and superficial area of their red corpuscles.

In Part IV. Principles of Biology applied to Human Structure and Life are introduced in an attractive form.

The book will prove useful and suggestive both to students and teachers of biology in its widest aspects. Most of the illustrations are taken from well-known authorities.

Dental Anæsthetics: A Text-book for Students and Practitioners. With a Contribution on Analgesia by JOHN BOLAM, L D.S. Edin., Honorary Assistant Dental Surgeon, Newcastle-upon-Tyne Dental Hospital. By WILFRED E. ALDERSON, M D., M.S. Durh., B.Hy., D.P.H., Honorary Physician, Newcastle-upon-Tyne Dispensary; Senior Honorary Anæsthetist, Newcastle-upon-Tyne Dental Hospital; Lecturer on Dental Anæsthetics, Newcastle-upon-Tyne Dental School. Bristol: John Wright and Sons, Limited; London: Simpkin, Marshall, Hamilton, Kent, and Co., Limited. 1911. Pp. 100. Price 2*s.* 6*d.*

THIS little book is a *résumé* of Dr. Alderson's lectures to dental students. The compression into brief dogmatic subdivisions which renders the subject matter easily available for reference on any individual point, makes at the same time for uncomfortably jerky reading. It is doubtless inevitable in a little work of this kind. Dr. Alderson is commendably emphatic upon the undesirability of using chloroform for dental operations. As he well points out, these operations are never operations of absolute necessity, and therefore it is never justifiable to run any risks with the anæsthetic. We think he might with advantage have bestowed more attention upon the continuous use of nitrous oxide and also upon details in connexion with dental ether cases, such as the proper use of sponges, designed to obviate the occurrence of after-sickness. Again, in his consideration of contra-indications to the use of nitrous oxide we should have liked to see special mention of cellulitis of the neck with some œdema of the glottis, a condition in which the use of nitrous oxide is highly inadvisable, and in which it is

likely to be suggested, owing to the presence of carious teeth as a suspected cause of the cellulitis. Dr. Alderson's general instructions are sound, and particularly we welcome a passage in which he points out the inadvisability of allowing the responsibility of choosing the correct anæsthetic to fall upon a man who has had solely a dental training. A useful chapter upon analgesia by Mr. John Bolam concludes the book, and will be not the least of its attractions for the dental student.

Die Lehre von der Krebskrankheit von den Aeltesten Zeiten bis zur Gegenwart. Von Sanitätsrat Dr. JACOB WOLFF, prakt. Arzt in Berlin. II. Teil, mit einer Abbildung im Text. Jena: Gustav Fischer. 1911. Pp. 1261. Price, paper, 26 marks; bound, 39 marks.

THIS is the second part of a great work on malignant disease, in which the author has gathered together all the knowledge of cancer from the earliest times to the present date, and has digested it so that now it forms a well-arranged whole. The first volume was concerned mainly with the general aspect of malignant disease, while in the present part the malignant affections of special organs are dealt with as well as the question of the biological and clinical etiology of cancer. The important subject of precancerous conditions is discussed, and the relation of malignant disease to other conditions is reviewed. The varieties of malignant disease are described. Chapters are devoted to the manifestations of the disease, metastases, recurrences, and its metabolism. After discussion of the general diagnosis, the remainder of the volume is concerned with the cancer of individual organs.

Criticism of a work such as this is impossible in any detail. It is vast, thorough, and complete, and all readers must acknowledge the industry and the energy of the author, and appreciate the value of the work he has carried out in providing surgeons and pathologists with so useful a summary of our knowledge of malignant disease.

A Manual of Fevers. By CLAUDE BUCHANAN KER, M.D. Edin., F.R.C.P. Edin., Medical Superintendent, City Hospital, Edinburgh, and Lecturer on Infectious Diseases to the University of Edinburgh. London: Henry Frowde and Hodder and Stoughton. 1911. Pp. 314. Price 7*s.* 6*d.* net.

THIS manual is intended for the use of students who are taking the prescribed course of study of the infectious fevers at an isolation hospital, and is written with a view to supply the theoretical and systematic information necessary for the full use of the practical opportunities afforded by the cases in these hospitals.

The first chapter of the work is introductory in character and is devoted to a brief but clear statement of the general nature of infection, immunity, and the febrile state. The second chapter contains useful descriptions of rashes and hints in regard to the examination of the skin and of the throat. The various rashes are classified into three groups—the erythematous rashes, those the elements of which contain lymph or pus, and the hæmorrhagic eruptions. The importance of examination of the throat as a routine measure in all sick children is forcibly emphasised, and the method of carrying out this procedure most effectively without frightening or hurting the child is described.

The individual fevers are then considered in separate chapters in the following order—measles, rubella, scarlet, fever, small-pox, vaccinia, chicken-pox, typhus fever, enteric fever, diphtheria, erysipelas, whooping-cough, mumps, and cerebro-spinal meningitis. Each disease is described systematically from the clinical standpoint, full accounts being given of the symptoms and their variations, of the course of the fever, and the nature, distribution, and effects of the rash. Diagnosis and treatment are also discussed in a thoroughly clear and practical manner. Short paragraphs are given describing the morbid anatomy, the blood changes, and where this is known the nature and character of the infective agent. The descriptions given are in simple language and are not mere transcriptions of text-book accounts, but are obviously based upon a large personal experience. They are illustrated by a few plates and by numerous reproductions of typical temperature charts.

The book should well serve the purpose for which it is written, and should also justify the hope expressed by the author in his preface that it may not cease to be useful when its owner has entered upon general practice.

The Law Relating to Medical Practitioners and Dentists in Great Britain, with an Appendix of Statutes. By J. N. MORTON, M.A., Solicitor, Secretary of the Western Medical School, Glasgow. London and Edinburgh: William Green and Sons. 1912. Pp. 148. Price 7*s.* 6*d.* net.

Mr. Morton has compiled a brief exposition of the law relating to the medical profession, in the form of a series of paragraphs grouped in chapters and followed by explanatory notes illustrated by reference to cases. These are followed by an appendix consisting of the Medical Acts, the Anatomy Acts, and the Dentists Act, 1878, and an index. There is also a table of contents and an index of reports and abbreviations.

The subject is one upon which, so far as we are aware, no good modern text-book exists, and the writer has the advantage of familiarity with the Scottish law relating to it, but at the same time the law, so far as it immediately concerns medical practitioners, comprises, in our opinion, a good deal more than can readily and usefully be compressed into 150 octavo pages; so that a work dealing with it, to be really satisfactory, should contain information upon topics which Mr. Morton has not dealt with at all. His opening paragraph, which apparently contains all that he has to say as to the use by the unqualified of titles implying qualification, is an example of brevity which is, to say the least, excessive. Among omissions it may be mentioned that the chapter on medical men as witnesses contains no statement of the fees fixed for them by regulation in criminal cases in England, nor do we find any reference to their appearance before coroners.

Interne Klinik der Bösartigen Neubildungen der Bauchorgane. Von Priv.-doz. Dr. RUDOLF SCHMIDT, K.K. Primararzt am K.K. Kaiserin Elisabeth-spital, Wien. Mit einer farbigen Tafel. Berlin und Wien: Urban und Schwarzenberg. 1911. Pp. 355. Price, paper, 12 marks; bound, 14 marks.

FEW diagnoses are of greater importance than those connected with the nature of an abdominal swelling. On the one hand, the belief that a malignant tumour is merely inflammatory in nature may induce the surgeon to allow the time to pass by when operative interference might have been undertaken with a good hope of success; while, on the other hand, to diagnose a simple inflammatory swelling as a malignant growth will in the first instance cause much unnecessary pain to the patient and his relatives, and later may lead to a useless laparotomy. The importance of this decision is, however, almost equalled by its difficulty, and therefore it behoves medical men to devote much care to this matter.

This book has been written mainly with the purpose of assisting in the diagnosis of abdominal diseases, and it appears to be very well suited for its purpose. The first 60 pages are devoted to general considerations, such as the external examination, the internal examination, and the

use of the Roentgen rays and the "diazo" and "aldehyde" reactions of Ehrlich. The several organs are then taken in order, and in each case the early symptoms of malignant disease are detailed; the physical examination of the organ is described; then the course and duration of the condition, and, lastly, the differential diagnosis are given. The latter half of the volume contains reports of a large number of cases that have been under Dr. Schmidt's care. These should prove very useful in assisting the reader to appreciate the points on which a diagnosis is based.

The book is well written, but we should have preferred more illustrations. There is, it is true, an excellent coloured plate showing the bacteria present in a number of conditions, but the volume contains no other illustration.

Medici e Ispettorato del Lavoro. (Publication of the Permanent International Committee for the Study of Industrial Diseases, Milan.) By Dr. LUIGI CAROZZI. Cusano: A. Colombo e Figli. 1911. Pp. 176.

THE author of this work on the Medical Inspection of Factories has been secretary of the Permanent International Committee for the Study of Industrial Diseases since its formation in 1906, having its headquarters now, with library and laboratories, in the Clinic for Industrial Diseases in Milan. Dr. Carozzi has studied his subject deeply in Belgium and England, where the value of medical inspection in factories has been recognised for many years. Germany in this respect has lagged behind, although in Baden and Würtemberg—but not in Prussia—medical appointments in the factory departments have been made within the last few years. Holland and Austria, also, have recently made similar whole-time appointments. In France and Prussia systematic medical intervention in factories appears to be limited to periodical medical examination of workers in a few specially dangerous trades. Belgium has had four medical inspectors of factories since 1905, with, as their chief, Dr. D. J. Glibert, whose scientific outlook on the problems confronting him has influenced continental opinion not a little in favour of the Belgian system.

Dr. Carozzi, however, deals not only with the activities of permanent officials, but also with the duties and functions of certifying and appointed surgeons (*médecins agréés*). The certifying surgeons in this country, he says, represent "la forza incondizionata" of the medical service. But it is evident that his ideal is the full-time factory surgeon independent of everybody but the State, and working in association with a laboratory and clinic for occupational maladies and accidents. Before this can be reached, however, he recognises that much more prominence must be given to the subject in the medical curriculum than is the case at present.

The author treats his subject in each of the principal countries of Europe historically. Mention is made of all the principal enactments creating or extending the duties of medical men in regard to industry, and there is a useful bibliography, not only of the subject generally, but also of the individual researches of the various medical inspectors of factories.

Traitement adjuvant du Strabisme. Par F. TERRIEN et HUBERT. Paris: G. Steinheil. 1912. Pp. 292. Price 4 francs.

THIS is one of the best of the many small monographs on squint which have appeared.

The book commences with a general discussion of the subject, and describes the manifestations of squint, its nature and evolution. Its cerebral origin is asserted, and adjuvant factors, such as errors of refraction, are allotted their appropriate sphere. In dealing with convergent strabismus, the indications for atropine are discussed, and its application to the fixing eye, in order to prevent the development of amblyopia in the squinting eye or to improve its vision by exercise, is rightly advocated. Occlusion of the fixing eye with the same object is recommended as an alternative treatment, correction of hypermetropia by glasses receiving adequate attention. A chapter on divergent strabismus deals briefly with the myopic element commonly present, and discusses the use of prisms and tenotomy of the external recti. A chapter on astigmatism and anisometropia follows, thus completing the preliminary excursus and leading up to the main subject matter of the book—viz., the relation of squint to binocular vision and the orthoptic treatment of the disorder.

Orthoptic exercises are introduced by an excellent account of Rémy's diploscope and its various uses, followed in logical sequence by Javal's bar reading, Worth's amblyoscope, the synoscope and the stereoscope. These subjects are all familiar, with the exception of the synoscope, an instrument introduced by the authors. It may be regarded as a further development of the principles of the diploscope, and appears to us thoroughly to justify its existence as a simple and valuable instrument for orthoptic treatment. The various steps in the treatment of a case of convergent squint—the development of simultaneous vision, the fusion of the double images, the establishment of binocular vision and its gradual improvement by diploscopic and other exercises—are lucidly described. After a short chapter on the orthoptic treatment of divergent strabismus the use of the stereoscope is discussed.

We can confidently recommend the book as an admirable introduction to the rational treatment of squint.

Lehrbuch der speziellen Chirurgie. Von HERMANN TILLMANNS, Dr. Med. et Sc., Geheimer Medizinalrat und Professor an der Universität Leipzig, Generalarzt à la suite des Königlich Sächsischen Sanitätskorps. Neunte, verbesserte und vermehrte Auflage. Part I.: Pp. 888, with 647 illustrations. Part. II.: Pp. 1079, with 783 illustrations. Leipzig: Veit and Co. 1911. Price, paper, 50 marks; bound, 55 marks.

Tillmanns's "Surgery" has occupied for many years a very prominent position in German surgical literature, and its English translation has had a large circulation in this country and in America. It is hardly necessary to add that the work is fully deserving of the reputation it possesses. The volumes which we are now noticing constitute the special part of the "Surgery," as "General Surgery" forms a separate volume.

The present issue of the special part of the work has undergone a very complete revision in order to bring it completely up to date; many chapters have been rewritten, and in many ways it is almost a new book. Some of the older illustrations have been withdrawn and many new ones have been added. On the whole, the illustrations are very good and clear, but some of them are on a small scale, which renders them less useful than they would otherwise be; this applies mainly to some of the older blocks which date from the earlier issues. A few of the illustrations are in colours, and these are especially good. The characteristic of the work has always been that it contains a full account of the various branches of surgery, giving the chief prominence to the most important subjects, but without neglecting the less employed methods of treatment.

The favour with which earlier issues have been received should be extended also to this edition, for it is equally well deserved.

LIBRARY TABLE.

Case Histories in Medicine, Illustrating the Diagnosis, Prognosis, and Treatment of Disease. By RICHARD C. CABOT, M.D., Assistant Professor of Clinical Medicine, Harvard Medical School. Second edition, revised and enlarged. Boston: W. M. Leonard. 1911. Pp. 295. Price $3.00.—In the second edition of this book Dr. Cabot has gone more into details as regards prognosis and treatment than in the previous edition. The order of the cases has been changed by grouping them under the headings of Infectious Diseases, Gastro-intestinal and Biliary Tract, Urinary Tract, Circulation, Respiratory System, Nervous System, Lymphatic and Ductless Glands, and Diseases of Unknown Origin. Each clinical case is briefly stated in all its important features, and certain questions arising therefrom are formulated and answered. The value of each point noted is then discussed and a diagnosis is suggested. The prognosis and treatment next receive consideration. The author expresses the hope that he will continue to be aided by the frank criticism of those who differ from him in regard to his diagnosis, prognosis, or treatment. A very interesting note on drug therapy has been added, to refute the charge of therapeutic nihilism so often levelled against medical teachers. The author discusses therein the present outlook for drug therapy, placebos, the homœopathic principle and modern dosage, and presents a working list of drugs drawn up on the basis of those actually used by the physicians of the Massachusetts General Hospital staff during the past four years, 50,000 prescriptions having been scrutinised for the purpose. We repeat that the book is likely to prove useful both to students and practitioners.

Aids to Ophthalmology. By N. BISHOP HARMAN, M.A., M.B. Cantab., F.R.C.S. Eng., Lecturer in Ophthalmology, West London Post-Graduate College. With 100 illustrations. Fifth edition. London: Baillière, Tindall, and Cox. 1912. Pp. 216. Price, 2*s.* paper, 2*s.* 6*d.* cloth.—The fifth edition of this book has undergone a thorough revision. A table of contents and some 60 new illustrations have been added. The subjects of glaucoma, optic neuritis, and muscle balance have been allotted more space, while the subject of refraction now occupies seven chapters. A chapter on ocular therapeutics has also been added. So long as this and similar works are not regarded as text-books, but are used for review only, they will fulfil a useful purpose for the student and the general practitioner.

Life, Death, and Immortality. By W. HANNA THOMSON, M.D., LL.D. New York and London: Funk and Wagnalls Company. 1911. Pp. 117. Price $1.00 net.—The author of this little book on a great subject is past president of the New York Academy of Medicine, and has already written on the deep questions of life and personality. In little over a hundred pages it is not to be supposed that the treatment of such subjects can be other than introductory and stimulant to further study. This is apparently what Dr. Thomson has aimed at, and he has succeeded, his familiarity with psychology and psychological medicine giving him a deeper insight than that possessed by the ordinary physician. He traces the beginnings of life on the earth and the development of the personal being, man; shows the impossibility of explaining the development and growth of organised beings as the result of chance; and just hints at the hereafter. It may be doubted if that division of the kingdom of life that consists of microscopic unicellular organisms is "characterised by the greatest variety of distinct and permanent species" (p. 74); one would be more inclined to say that permanence is not the characteristic of bacterial "species," if by permanence is meant immutability. This, however, in no way affects the author's argument. Although, perhaps, there is nothing absolutely novel in Dr. Thomson's views, the manner of treatment is so attractive and the exposition so clear, and in the best sense of the word popular, that the book may be read with interest and profit by everyone. It is stimulating and refreshing.

Circumstances or Character? Studies in Social Work. By CLEMENT F. ROGERS, M.A. London: Methuen and Co., Limited. 1911. Pp. 218. Price 3*s.* 6*d.* net.—The author has collected a number of papers and addresses that he has written or delivered during recent years on various aspects of social work. He is a strong supporter of the Charity Organisation Society, and his object has been, in part at any rate, to justify its aims and methods. After an introductory section on fundamental principles, he treats of charity and the Church briefly but adequately from the historical point of view. Beginning with the short but significant references that are found in the New Testament, from which we learn that widows and orphans, the sick and the aged, and prisoners were cared for, Mr. Rogers traces the defective methods and encouragement of beggars that became general in the Middle Ages and after. An interesting chapter collects some references in eighteenth century literature to charity in England; it practically merely meant, as a rule, the giving of doles, which Mr. Rogers, of course, emphatically condemns. We think, however, that he is not just to Miranda, the heroine (or one of the heroines) of Law's "Serious Call," who, according to Mr. Rogers, did "everything that the Charity Organisation Society holds to be anathema." The point of view in those days was, no doubt, different from ours, but, at any rate, this benevolent lady not only gave away her money but employed her time in personal investigations as to the recipients of her charity; she set up poor tradesmen in business, put poor children in the way of employment, and comforted poor people who were too old to work, all being done in her own neighbourhood, where she knew the circumstances. That she did it, as Mr. Rogers says, "without discrimination" is his gratuitous supposition. In this same eighteenth century that our author rather girds at we find Fielding, in his "Covent Garden Journal," denouncing the giving of money to beggars as "a crime against the public," and in his well-known "Inquiry into the Late Increase of Robbers," dividing the poor into three classes—those unable to work, those able and willing, and those able but not willing, and prescribing appropriate treatment for each. The difficulty, he wrote, is the method of adapting—i.e., the bringing the workers and the work together. This is one of the chief objects of the Charity Organisation Society to-day, but it was also advocated in the despised eighteenth century by Fielding, who did other things besides write "Tom Jones." Mr. Rogers justly calls attention to the "almost complete ignorance of the work of the friendly societies" on the part of the clergy and of the feeling of irritation that this naturally gives rise to, and he mentions, only to condemn, the spurious form of thrift called "slate clubs," often supported by the clergy in ignorance of the injury they do to the *bonâ fide* friendly societies. There is much also worthy of attention in his outspoken remarks about free dinners to poor children and kindly but sometimes careless dispensation of free boots, and other help in kind. "The gradual breaking down of character by the expectation of help, whether private or from the rates, is becoming a national danger," he says roundly. Lastly, in a review of the organisation of charity, the author shows how we may learn from the Socialist, Individualist, Communist, and Liberal, but the Socialist who merely insists on his rights is as odious as the Individualist who is merely selfish. Mr. Rogers has a wide knowledge of his subject, and his book will be of value and

will give ideas to all who are interested in, and work with and for, "the poor." The gist of the matter is that "the cure of distress lies in character, in the character of the workers, in the character of those in distress."

MISCELLANEOUS VOLUMES.

THOSE who desire to enter on the study of eugenics—the consideration from a biological point of view of problems concerning social organisation, population, and the future welfare of the race—would do well to take their first steps under the guidance of *An Introduction to Eugenics*, by WILLIAM CECIL DAMPIER WHETHAM, M.A., F.R.S., and his Wife, CATHERINE DURNING WHETHAM (Cambridge: Bowes and Bowes; London: Macmillan and Co., Limited; Glasgow: James Maclehose and Sons. 1912. Pp. 66. Price 1*s.* net). The authors rightly say that "as in all branches of science, a knowledge of the range and methods involved in the inquiry is the first requisite to a clear understanding of the subject." This admirably concise yet explicit little pamphlet briefly unfolds the history of eugenics, discusses racial qualities, describes the methods of research, and examines the construction of society. The appendix and bibliography deserve special praise; the latter consists of no mere string of books and articles, but points out briefly the scope and character of some of the principal works by eminent authors bearing directly or indirectly on the subject.—Those interested in witchcraft, possession, spectres, and such-like ghosts that, despite the exorcism of latter-day civilisation and knowledge, decline to be altogether laid, may possibly be interested by two recent books. In *Demoniacal Obsession and Possession as Causes of Insanity* (London: The Ambrose Company, Limited. 1911. Pp. 51. Price 1*s.* net), Mr. C. WILLIAMS, L.R.C.S., L.R.C.P. Edin., essays in 51 pages to prove that demoniacal possession is a fact, and that it is manifested in certain kinds of insanity, of which it is the cause. He bases his belief in the reality of possession on the assertions that the Christian religion teaches us to expect it and that he has *seen* it (author's italics).—Dr. J. MAXWELL WOOD, in *Witchcraft and Superstitious Record in the South-Western District of Scotland* (Dumfries: J. Maxwell and Son. 1911. Pp. 355), recounts the results of his gleanings on witchcraft, fairy-lore, death-warnings, funeral ceremony, and ghost story, from Dumfriesshire and Galloway, without attempting to subject them to higher analysis or criticism, as adequately presenting "a truer aspect and reflection of the influence of superstition upon the social life of those older days." The book is a distinct addition to Scottish folk-lore.—The mental wanderings of souls unfettered by the shackles of time or space are recounted by Mr. G. M. IRVINE in his book *In the Valley of Vision* (London: Simpkin, Marshall, Hamilton, Kent and Co., Limited. 1911. Pp. 155. Price 2*s.* 6*d.* net). "Dr. Semel Bis" having acquired the art of telepathically reading these flights of fancy in his patients "when in a critical condition as the result of acute disease," records them in a manner that somewhat ingeniously illustrates the determination given to delirium by the problems, pursuits, or natural characteristics of the subject. Morals, philosophy, and fantasy are intermingled in a kaleidoscopic phantasmagoria.—"*Truth*" *Cautionary List for 1912* (London: *Truth* Publishing Co. Pp. 124. Price 1*s.*, by post 1*s* 2*d.*) continues its knight-errant career as a protector of the gullible public. Pp. 44–52 of this issue are devoted to comment on certain alleged medical quackeries. Perhaps the most inherently vicious of these are certain advertised cures for drug habits which surreptitiously supply the bane under cover of providing an antidote.

JOURNALS AND MAGAZINES.

The Journal of Physiology. Edited by J. N. LANGLEY, Sc.D., F.R.S. Vol. XLIII., No. 5. Dec. 22nd, 1911. London: C. F. Clay, Cambridge University Press. Price 4*s.*—G. C. Mathison (Beit Memorial Research Fellow), working under the direct guidance of Mr. Barcroft, of Cambridge, has investigated "The Influence of Acids upon the Reduction of Arterial Blood." That organic acids, such as lactic acid, are present in the blood in asphyxia and after violent exercises has been abundantly established. Lactic acid occurs in the tissues in conditions of deficient oxidation, and the importance of organic acid in tissue respiration is acknowledged. This research follows the lines already so successfully laid down by Mr. Barcroft. Blood completely saturated with oxygen is exposed to an atmosphere of nitrogen, either by an aerotonometric method or by bubbling a stream of nitrogen through a quantity of blood. A simple method was ultimately devised whereby from 3 to 5 c.c. suffice to test quantitatively the rate of reduction of arterial blood by the passage of a current of nitrogen. Lactic, acetic, formic, carbonic, hydrochloric, and sulphuric acids hasten the rate at which arterial blood gives up its oxygen at low tensions. The accelerating effect of carbon dioxide and other substances is mainly due to the change in hydrogen ion concentration produced by them. The next paper, by Soroku Oinuma, on the "Relative Rates of Oxidation and Reduction of Blood," continues the study of the gases of the blood as devised in the Cambridge School. The rate of reduction of blood is greatly increased, and the rate of oxidation somewhat retarded, by a rise of temperature. The rate of oxidation of blood by alveolar air is about twice that of a similar mixture containing half the quantity of oxygen. The contribution by D. H. de Souza on "Protection of Trypsin from Destruction by Heat" occupies about five pages, and deals with the question from a laboratory point of view. A. V. Hill deals with the "Total Energy Exchanges of Intact Cold-blooded Animals at Rest." He used four types of cold-blooded animals—viz., frogs, newts, worms, and snakes. In the summary of results confirmation is obtained of a fact already well known, that the animal "regulates its own metabolism" independent of the O_2 tension. He further finds that "the heat production of men and big animals is probably not due to a special mechanism, but is merely a direct consequence of the activities of living cells." The next communication, by Casimir Funk, on the "Chemical Nature of the Substance which Cures Polyneuritis in Birds Induced by a Diet of Polished Rice," occupies six pages, and is from the Lister Institute. Its author starts from the statements of several observers that the cortical layers of rice contain a substance which cures both the beri-beri in man and the polyneuritis which is produced in birds by feeding them on polished rice. The author carried out his experiments on pigeons with a view to determine the nature of the "curative substance." Physiological chemists will be interested in the details of the author's methods. It appears that the polyneuritis of birds is due to lack of an "essential substance" in their diet—a substance which is absent in polished rice and is contained in rice polishings.[1] The curative dose of the active substance is small. The following are some of the titles in the Proceedings of the Physiological Society, Nov. 18th, 1911: F. H. A. Marshall, On the Ovarian Factor concerned in the Recurrence of Œstrus; A. R. Mines, Interpretation of the "Protective Action" of Gelatine on Colloidal Gold; A. F. Stanley Kent, The Influence of Salts upon the Action of Rennet on Milk.

[1] THE LANCET, Nov. 4th, 1911, p. 1266.

THE LANCET.

LONDON: SATURDAY, FEBRUARY 24, 1912.

The National Insurance Act.

WE publish elsewhere an account of the meeting of the Representatives of the British Medical Association, which took place in the Guildhall, London, on Tuesday, Wednesday, and Thursday last. The meeting was held with the object of considering the report of the Council of the Association on the relations of the medical profession to the National Insurance Act, in which report the Council made the recommendations which will be found printed in full in THE LANCET of Feb. 3rd, p. 335, and which have also appeared in publications of the British Medical Association, as well as in the lay press. The recommendations of the Council, it will be remembered, asked for instructions to press upon the Government the necessity of further conditions to secure the requirements of the profession, and to notify the Insurance Commissioners that no negotiations will be entered into with any Insurance Committee until the Representatives are satisfied; to submit a report upon the regulations when issued by the Insurance Commissioners; to make certain arrangements for appointing provisional medical committees in every insurance area; to take steps against the possibility of medical attendance being obtained at inadequate rates; and to appoint a new State Sickness Insurance Committee to consider and report to the Council on all matters connected with the Act. This represents the pith of the recommendations. The Council, to put it briefly, asked the constituencies, through their delegates, to work the Act on the understanding that the medical profession was secured by further provisions against the many risks and possible wrongs which have been so freely pointed out during the last eight months. The Representatives, however, as was confidently expected, decided that the report of the Council seemed to put too favourable a construction upon the Act. The net result of the meeting is that the recommendations of the Council of the British Medical Association have been considerably strengthened, and that the Association has declared that it will call upon the profession not to work the Act unless the minimum demands of the profession are effectually and permanently embodied by the Commissioners in the Regulations, with a view to their subsequent incorporation in an amending Act. Although motions to break off all negotiations, and to demand an immediate amending Act, were lost, yet the reform party of the British Medical Association and the National Medical Union at this meeting of Representatives made good their views to a considerable degree. Moreover, the two opposing sections within the Representative Body managed to sink their differences, and by mutual concessions gave a unanimous vote upon the above vital declaration of policy. We regard this as a really hopeful sign of approaching unity in purpose and in action within the ranks of the profession, and we are glad to think that the demand for Regulations containing definite guarantees was first proposed in the columns of THE LANCET. The next step should be taken by Mr. LLOYD GEORGE and the Insurance Commissioners. It remains to be seen whether in the circumstances now created the Chancellor will realise the necessity of coming to an understanding with the medical profession.

Epidemic Poliomyelitis.

THE Local Government Board issued last week a volume of Reports and Papers on Epidemic Poliomyelitis, prefaced by an introduction by Dr. A. NEWSHOLME, which promises to be of great utility to those concerned with the disease in its various aspects in this country. The volume comprises a summary, prepared by Dr. HUGH A. MACEWEN, a digest of whose contents we published last week, of the principal facts which have been recorded in the extensive literature of the subject in Sweden, the United States, and other countries where poliomyelitis has been epidemic on a wide scale during recent years, and a review by Dr. M. H. GORDON of the results obtained to date by Professor LEVADITI and other workers in foreign laboratories who have investigated the virus of poliomyelitis and its experimental transmission from man to animals and from animals to animal. It also sets out the results of inquiries made for the Local Government Board by Dr. R. A. FARRAR in the Midlands and in Dorsetshire in 1910, and by Dr. R. J. REECE in Devon and Cornwall in 1911. Dr. REECE'S report establishes the fact that the disease not only showed a considerable prevalence in one or two places, especially Holsworthy, but that cases, singly or in small groups, were scattered widely over both counties. It is probable that if any other part of England had been as systematically worked last summer a very similar result would have been obtained. Dr. REECE'S inquiries have also confirmed the foreign experience that poliomyelitis occurs to a disproportionate extent in remote country places and isolated dwellings, and as a result of his painstaking investigations it can be said that epidemiological considerations similar to those frequently ascertained in Sweden and America also arise in this country and equally await explanation. Dr. REECE'S paper will be a little disappointing, perhaps, to those who have formed no clear idea of what its scope would be. It does not contribute much new knowledge with regard to the clinical character or the pathology of the disease; while it is guiltless of novel or startling theory. But this should not surprise us. It could hardly be expected that all the circumstances of an epidemic widely spread, not compulsorily notifiable, and often difficult of diagnosis, could be worked out satisfactorily from every point of view by one observer, whatever his practical

experience in the clinical or the epidemiological investigation of this disease; or that such an inquiry should at once place us in advance of other countries, where the disease has been much more extensive and where many observers have had several years of experience and numerous co-workers and assistants in inquiring into epidemics of this nature.

Among the 154 cases reported by Dr. REECE as poliomyelitis in the Devon and Cornwall outbreak are certainly some which from clinical description alone would hardly be accepted as cases of poliomyelitis, undue stress being laid, we think, on certain signs, while little mention is made of others which are of considerable significance. For instance, importance seems in the report to be attached to the presence of Kernig's sign, and yet it is generally regarded as a sign of small diagnostic value. That portion of the report which is concerned with the epidemics at the village of Stoke Rivers is particularly satisfactory from the epidemiological point of view; it has been worked out with the greatest care, and in detail, with the result that there must be considerable doubt whether that epidemic was one of poliomyelitis. What the nature of the poison was which gave rise to the epidemic remains doubtful, and this very fact emphasises the necessity there is for obtaining some clinical test or some serum reaction by which the uncertain and abortive cases of poliomyelitis may be recognised. The report of the epidemic in the Midlands in the summer of 1910, which follows upon Dr. REECE'S report, is of interest, for it shows that cerebro-spinal meningitis and poliomyelitis may, as has always been recognised, coexist; but, as Dr. FARRAR points out, these are two distinct diseases, and their coexistence does not indicate any relationship. In a community in which cerebro-spinal meningitis is a notifiable disease it is certain that from time to time cases of tuberculous and septic meningitis, and also cases of the cerebral form of poliomyelitis, will be notified. The examination of the cerebro-spinal fluid in such cases is essential, for from its cytological and bacteriological characters a correct diagnosis can always be made. The epidemic at Cerne Abbas in Dorset is most instructive, in that it shows the variability of the infectivity of the virus. In this small epidemic of 16 cases, three children were infected in one house; on the other hand, a father contracted the disease and remained in a small cottage with his wife and several children, not one of whom developed the disease. Whether the freedom from infection in this latter family can be attributed to the use of permanganate of potash gargle must remain doubtful; but it is certainly a simple and harmless preventive measure.

It is to be hoped that the Local Government Board will regard the report now presented as a preliminary one, and will make arrangements as suggested in the preface by its chief medical officer for "further research both in the laboratory and by exact and painstaking inquiry into the circumstances of local outbreaks," so that any outbreaks of poliomyelitis which may occur during the coming summer may be thoroughly examined from every point of view. The lines on which further investigation should be carried out will have to be carefully thought out. The report of the Local Government Board has indicated one important line of investigation—viz., the possible relation of certain forms of illness in domestic animals with poliomyelitis. The experimental work of Dr. H. K. MARKS (to which Dr. F. E. BATTEN called attention in our columns last week, in the course of a lecture upon experimental poliomyelitis) has shown that rabbits injected with the virus of poliomyelitis often die suddenly from a disease which bears no clinical resemblance to poliomyelitis, but which, when again communicated to a monkey, reproduces the disease in its typical form. The Local Government Board may be congratulated on obtaining the assistance of Professor LEVADITI, of Paris, in carrying out its experimental investigations in the transference of the English virus to monkeys, but it is natural to wish that an English bacteriologist had been able to undertake the work. The more do we feel this because in future investigations of this disease it will be essential that the experimental work be carried on in this country.

The Teaching of Anatomy.

AT a recent meeting of the Southwark board of guardians, briefly reported in our issue of Feb. 10th, it was resolved that in future no unclaimed bodies of paupers should be sent to the schools of anatomy for dissection, and though a letter was read from Mr. F. G. PARSONS, the lecturer on anatomy at St. Thomas's Hospital, pointing out the importance of a knowledge of anatomy to medical students, the board decided to adhere to its resolution, one of its members adding that he was glad to learn that other boards of guardians, especially in the North of England, were following their example. We have only to say that if other boards of guardians are found in any quantity to subscribe to the views of the Southwark board a fatal blow at medical progress will be struck.

An adequate knowledge of anatomy can be obtained only by dissection. This must be the starting-point of any discussion on the question whether boards of guardians should grant for the study of anatomy or withhold the unclaimed bodies of paupers. On this point all who are acquainted with the position will agree; every teacher of anatomy or surgery, everyone who has to instruct students of medicine, must acknowledge that without a knowledge of anatomy it is not possible for the medical student to be adequately equipped. It is only by dissection, by seeing the tissues of the body in their natural positions, and in their relation to one another, that a student is enabled to learn, and learn thoroughly, the structure of that with which he has to deal afterwards when he practises his profession. Without an adequate knowledge of anatomy the medical practitioner will always be at sea; he will feel that he is not sure of the formation of the part which he is examining, and as a result both his powers of diagnosis and of treatment will be greatly impaired. His diagnosis will be faulty because he will be unable to appreciate the relation which the anatomy of the part concerned has with the symptoms manifested; his lack of knowledge will interfere seriously with his powers of treatment, especially with his capacity for operating, and either from fear of doing harm he will not venture upon

what is required, or, if his lack of knowledge fail to restrain his hand, he may inflict irreparable damage. It is incontrovertible that there is nothing more essential for the basis of the knowledge of the student of medicine than a real familiarity with the anatomy of the human body, and it may reasonably be asked what substitutes have been suggested for dissection. The use of plates, illustrations, and models may assist in perfecting the student's knowledge of anatomy, but it can never replace dissection. The anatomical knowledge obtained from books and plates may suffice for the passing of some of the less severe examinations in anatomy, but it will not serve for the practice of medicine and surgery. The skilled examiner can always distinguish between the student who has learned his anatomy from books and the student who has gained his knowledge from dissection. Those who oppose the use of the unclaimed bodies of paupers for dissection must either believe that a knowledge of anatomy is unimportant for the practice of medicine, or that a knowledge of the subject can be obtained in some other way. There is no method save dissection of obtaining a satisfactory knowledge of anatomy.

The feeling of sentiment that impels a board of guardians to refuse to allow the unclaimed bodies to be used for the teaching of anatomy is perfectly natural; they feel that as no friends or relatives are there to see that the bodies of these poor people are given decent burial, it behoves them as the trustees for the poor to see to it. They are possibly ignorant of the fact that all bodies sent to the medical schools are buried in consecrated ground with all due religious rites, and that the process of dissection has merely anticipated the normal effects of putrefaction without its horrible accompaniments, since the bodies are preserved with the strongest antiseptics. We cannot help thinking that if guardians knew how very essential it is that students should dissect, they would not allow a sentiment for the dead, however laudable, to override the needs of the living. No stigma attaches to the dissected body. At one time it was different, for it was part of the sentence on some criminals that when they had been hanged their bodies were to be handed over to the surgeons for dissection; so that ignominy attached to dissection. When, however, the Anatomy Act was passed in 1832, in order that this slur should be taken away, it was enacted that in future the bodies of executed criminals should not be dissected. The horrors of "body-snatching" were entirely due to the difficulties intentionally cast in the way of the supply of bodies for dissection. The examining authorities require a knowledge of anatomy which can be gained only by dissection; these examinations must be passed by anyone who wishes to practise medicine; it is clearly, therefore, the duty of the State to see that the schools of medicine are provided with sufficient bodies for the teaching of anatomy. In most of the provincial schools of medicine the difficulty is not so keenly felt, partly because the guardians seem more ready to recognise that dissection is essential for the due teaching of anatomy, and partly because the requirements are not so great as in London, where more medical students are to be found and where more examinations are held. A solution of the difficulty must be discovered. The simplest method of solving the difficulty would be to take from the boards of guardians the right of deciding what should be done with the unclaimed bodies of paupers; this would relieve the guardians of the expense of burying these unclaimed bodies, and would enable the schools of medicine to carry on their work efficiently. It has been suggested that it might be possible to import the bodies required, but the expenses would certainly be greatly increased. Whatever solution may suggest itself to those in authority, one thing at least is clear, something must be done to supply sufficient bodies for the instruction of our future physicians and surgeons. Many of those who are most bitterly opposed to the anatomical use of unclaimed bodies would be the first to complain if a medical man were to make a mistake in the diagnosis or treatment of themselves or their relatives, from a want of knowledge of anatomy.

Annotations.

"Ne quid nimis."

THE COAL STRIKE AND THE SANITARY SERVICES.

NEVER before probably in the history of this country has it been so sternly and acutely realised by us all to what an extent the great systems of our modern life depend upon our regular supply of coal. During the last fortnight the community has been aroused to the fact that a coal strike may quite possibly take place, and that the inadequate heating and lighting of our homes are absolutely trivial matters compared with the real terrors of such a ghastly disaster. Look at this one thing only—a prolonged coal famine would bring our principal sanitary schemes to a standstill. The splendid efficiency of our public health administration will be threatened with complete defeat if the supply of coal be discontinued. Our great schemes of water-supply and sewage disposal, for example, would fail, and such failures would bring disease and death in their train. Our water and sewage mains without the steam pumps would become an arterial system with a non-beating heart. When the railway strike assumed for a time a serious position last summer, it was reported that fears were entertained that the distribution of water in the metropolitan area was within sight of being stopped, as coal could not be got quickly enough to keep the engines of the great water pumps going. There was threatened a shortage because the means of communication between the colliery and the pumping stations were shut off, but fortunately a long strike was averted and a serious situation saved. It is to be hoped that again counsels of peace may prevail, though it is obvious that the struggle upon which the miners and coal-owners are engaged is a vastly greater one than that which so sadly affected the comfort of holiday-makers last year. It is difficult to think of any department of life that will escape catastrophe if a hard, determined policy of war is persisted in. The damage to the industrial interests of the country will of course be enormous. Misery or starvation will be experienced by thousands. But over and above this stands in our mind the risk that a great injury may be inflicted upon the public health machinery of the country which will take a weary time to repair. It is clear that a prolonged coal strike must mean a compulsory falling away from our present high sanitary standard, the maintenance of which is responsible for the splendid health statistics of the country. For that reason alone we may well pray for peace.

ANTIVACCINATION AND THE ENCYCLOPÆDIA BRITANNICA.

IN THE LANCET of Nov. 25th, 1911, we reviewed the article on Vaccination by Dr. S. Monckton Copeman in the new edition of the Encyclopædia Britannica. A "Reply"[1] to Dr. Copeman's article has been issued in pamphlet form from the headquarters of the antivaccinationists. It consists, for the most part, of the usual denials of everything that is well established to all except those who will not see. Naturally space is too valuable to keep on repeating the same categorical denial of "facts" which are not facts, but there are three points in the pamphlet which may be worth some comment. 1 After an ineffectual attempt to disprove the identity of small-pox with cow-pox, it is stated that "if the non-identity of cow-pox with small-pox is established, the alleged scientific basis of vaccination is at once exploded, as there is no evidence that one infectious disease is capable of setting up immunity against another." But the professional estimate of the value of vaccination is based on logical reasoning from observed facts, and not on any theory whatever as to how it works, though, of course, the settlement of that question is highly desirable. Further, to assert that there is no other known case in which one infectious disease is capable of setting up immunity against another would be, even if true, of no value as an argument that this particular disease does not do so, unless the assertion that it does were based on the theory that all infectious diseases do produce immunity against other infectious diseases—a foolish proposition which no one has made. Again, the author of the pamphlet adduces as evidence against the identity of the two diseases, the assertions that inoculation of small-pox into a cow does not produce cow-pox, that small-pox causes a general eruption, while cow-pox causes only a local eruption, and that small-pox is spread by infection as well as by contagion, while cow-pox is spread by contagion only. Yet in the face of these assertions he considers it "safe to say that there is little, if any, 'cow-pox' lymph in use to-day," because "small pox virus, cultivated through a series of calves, is now the favourite brand." Now, if small-pox does not produce cow-pox in a cow, what does it produce? For the condition induced in human beings by the lymph derived from "small-pox virus, cultivated through a series of calves," does not produce a general eruption but only a local one, and the condition in calves thus induced is not infectious to human beings, but must be inoculated to produce any result at all. As a matter of fact, the results of vaccination, whether, as formerly, from undoubted spontaneous cow-pox, or as (asserted in the pamphlet) at present from small-pox cultivated through a series of calves, has the same visible results—viz., a local eruption never communicated except by inoculation. 2. It is further stated that "the assumption that vaccination mitigates small-pox is absurd in theory and untrue in fact, for no one can possibly tell theoretically whether vaccinated persons who contract small-pox would have suffered more or less severely had they not been vaccinated." In any given instance that is true; but when it is found by comparison that the cases of severe small-pox occurring in vaccinated persons form a negligible fraction per hundreds of thousands of vaccinations, while the cases of severe small-pox in unvaccinated persons have a heavy percentage, it is only a reasonable assumption based on the doctrine of chances that the vaccinated patient would have suffered more severely if he had not been vaccinated. 3. Not vaccination but improved sanitation, we are told, is responsible for the improvement in small-pox incidence and mortality. Now, in the nature of things it takes time to convert insanitary conditions into sanitary ones, while the beneficial effect of vaccination, if any, we should expect to demonstrate itself promptly. When Porto Rico came under United States occupation in 1898 small-pox was endemic there and sanitation was not good. In December, 1898, small-pox assumed such a severe epidemic form in that island that 16 out of 71 municipalities showed 3000 cases in two months. On Jan. 27th, 1899, it was ordained that "every resident who has not had this disease will be vaccinated, and hereafter all infants must be vaccinated before reaching the age of six months." By June 30th, 1899, 790,000 persons had been vaccinated, not a death attributable to vaccination had occurred, and the only accidents were "a few infected arms." On Oct. 20th, 1899, it was officially reported that "not a single case of small-pox is known to either the military or the civil authorities, and it may be considered stamped out of Porto Rico." It has never gained a foothold there since. A similar, but if anything more remarkable, experience was afforded a year or two later in the Philippines.

[1] Vaccination Pros and Cons. A Reply to Dr. Monckton Copeman's Article on Vaccination in the eleventh edition of the Encyclopædia Britannica. By the Editor of the Vaccination Enquirer. Price 2*d*., post free 2½*d*.

THE DREAM OF ANTHROPOLOGY.

It has always been a dream of the anthropologist—a dream the realisation of which would prove one of the romances of science—that from an examination of the skull it should be possible for one versed in the study to reconstruct faithfully the features which characterised the individual the bones of whose head and face are preserved. The fascination of such an ideal is so great that it must strike anyone as curious that those whose business it is to handle skulls have been contented with stereotyped measurements and indices which seem to tell so little about the living individual. As a matter of fact, these seemingly sterile methods do not represent the true limits of anthropology, for it is certain that in the review of any skull the anthropologist sees far more of the living man than the mere collection of measurements and indices, with which he is forced to describe it, would suggest. The truth is that every anthropologist has his dreams; that some portion of his dreams he can realise, but that for want of a better method of expressing himself he resorts to the compilation of tables and indices, with which he is probably by no means contented. What he has seen in the skull is, alas, not represented in his tables, and no one who chances to wade through his records can ever build again that picture of the living individual or even of the skull from which it arose. Gropings after graphic methods are always being made, methods by which, at any rate, a skull contour may be reconstructed from data recorded by the observer; but more than this is wanted to fulfil the dream of anthropology, for a reconstruction of the actual features of the living individual is the climax aimed at. From time to time the question has attracted attention from a wider circle than that of the professed anthropologists, for the skulls reputed to belong to various great men have at times come under examination for the purpose of deciding either their authenticity or the fidelity of disputed portraits said to depict the living man. The skull said to be that of Dante was examined in 1867 by Welcker, and from its general similarity to the poet's death-mask it was judged to be genuine. The death-masks, the portraits, and the reputed skull of Schiller have also furnished material for an exhaustive study by the same authority. Raphael and Bach have in their turn provided problems for the anthropologist. Sophocles has also come under review, for a skull reputed to be his was examined by Professor His in 1893. The remains of other celebrities have been brought to light and paraded before the public from time to time. The disputed head of Cromwell attracted attention not long ago, and suggestions have been made of late

that the famous curse should be braved, and Shakespeare's remains be dragged from the grave in order to determine which of his portraits is genuine. Authorities differ as to the extent to which reliance may be placed upon the verdict that a particular skull accords so well with a particular portrait that therefore the bones must be actually those of the individual depicted. Still more doubt has been cast upon the value of attempts to reverse the process and reconstruct the portrait from the skull. So much that lends every distinctive feature to a face would seem to leave no trace upon the contours of the skull bones. The eyes, the lips, the nose have in all their most characteristic parts so little connexion with the bones that it is too much to expect that a faithful likeness could be reproduced. And yet something may be done. The artist's reconstruction of the features of an Australian native upon a skull handed to him by Merkel gives clear evidence that broad racial characters may be brought out with some distinctness upon a face modelled from the skull. It is possible that something more than this may be arrived at by a long series of comparisons of the features of actual individuals with the characters of their skulls, and by a systematic study of the average thickness of the tissues overlying every part of the skull bones. An excellent contribution towards this study has recently been made by Professor H. von Eggeling ("Physiognomie und Schädel"), and in his paper the writer gives a valuable account of what has so far been accomplished and what may yet be done. Professor von Eggeling has done his best to realise the dream of anthropology.

KALA-AZAR AND THE BED-BUG.

That certain human diseases are spread through the instrumentality of biting insects has been proved over and over again, and the number of such instances is gradually increasing. The latest addition to the list would appear to be the association of the bed-bug with the propagation of kala-azar (black fever) in India. In THE LANCET of Feb. 17th we briefly referred to the announcement which Surgeon-General W. B. Bannerman, I.M.S., has made to Sir Ronald Ross, that Captain W. S. Patton, I.M.S., had discovered the complete development of the parasite of kala-azar in the Indian and European bed-bugs. As the form of this disease met with in India is the most serious of the three known forms of illness due to Leishmania, it is obvious that the discovery of the life-cycle of the protozoal parasite in an insect which infests many Indian homes will clear away at once much of the doubt and difficulty which have hitherto surrounded our knowledge of the precise manner in which the disease is spread, and how it may therefore be prevented. For some time the Indian bed-bug has been under suspicion as the transmitting agent, but no sufficient evidence had been obtained to establish the charge. Captain Patton, now assistant director of the King Institute, Madras, sharing the views held by Major L. Rogers, I.M.S., who has already done much solid work towards the elucidation of the etiology of this disease, has been directing his investigations to the connexion between the bed-bug and kala-azar. He had already shown [1] that the parasite's life-cycle consisted of three stages —pre-flagellate, flagellate, and post-flagellate. The flagellate stage was said to be found in the mid gut of the Indian bed-bug, Cimex rotundatus, and the post-flagellate in the rectum, where the parasites became encysted and were finally passed out with the fæces, being liable, it was conjectured, to be ingested by the larvæ or nymphs. But it may be mentioned that Sir Patrick Manson has pointed out that the supposition that the infection took place by an animal feeding on the excreta of its own species was contrary to the usual course of nature. It was also believed that the parasite, in order to reach man, must revert to its non-flagellate stage, and that this change most likely took place in the bed-bug somewhere in the neighbourhood of its biting apparatus. It had been shown experimentally by Captain Patton that the Indian bed-bug could become infected by feeding on the blood of a kala-azar patient. But the final stages of the development of the parasite and the method of its re-entry into the human body could not be determined. The difficulties connected with proof of the insect transmission of flagellated protozoal organisms are notorious, and experimental research in this direction is acknowledged by experts as being far from easy. The natural parasites of the suspected insect, for example, would need careful study, and there might be difficulty in determining whether any parasites found in the bug were developmental forms of leishmania or were, on the other hand, flagellates of another kind altogether. It is therefore the more satisfactory now to learn that in spite of all the great difficulties which had to be encountered Captain Patton has succeeded at last in discovering the complete life-cycle of leishmania donovani in the body of the bed-bug. We assume that this discovery brings with it the knowledge that the bug is not only a potential agent, but that it is the usual transmitter of the infection to man. The practical application of this knowledge to the formulation of preventive measures naturally follows. Indeed, this view has already been acted upon with advantage in some parts of India, bug-infested huts in which cases of kala-azar had been reported having been destroyed by burning, and the human inmates removed to new homes erected on fresh sites. This incrimination of the bed-bug by Captain Patton affords another instance of the importance of cleanliness in dwellings, and the need for waging constant warfare against biting insects, more particularly on those which rely upon man for their sustenance. As we have before pointed out in these columns, it cannot be too often urged that the prevention of many diseases depends primarily upon the condition of the home, and that cleanliness of interiors avails much in the struggle against infection. We shall look forward with much interest to seeing the full details of Captain Patton's important investigations, and we trust that their publication will not long be delayed.

[1] Vide THE LANCET, Jan. 30th, 1909, p. 306.

THE DIETARY OF THE ELIZABETHANS.

A LITTLE-KNOWN work is Thomas Moffet's "Health's Improvement," which deals with the choice and preparation of food in Elizabethan England. It is just to note that our ancestors, often accounted gluttons, held nice views on the subject of diet, ate many viands now discarded, and based their opinions of their bill of fare on the writings of Galen, Cardanus, and like authorities. The Elizabethan ate his meat in an eclectic and philosophic spirit. "I affirm with Galen," exclaims Moffet, "that a fat and young heifer, kept up a while with dry meat, will prove a convenient, temperate, and good nourishment, especially if it be killed after the French fashion, as I saw the Norman butchers kill them in our camp whilst I lay there in camp with that flower of chivalry, the Earl of Essex." The Normans, it appears, inflated the carcass of the cow with wind and then beat it till the meat grew tender, as is now done in the case of veal. Bull beef is said by this same writer to be a fit food for strong stomachs, but only after the bull has been baited and has died in battle. "Mutton is generally commended of all physicians." The flesh of the old he-goat is not to be eaten "till he hath been baited like a bull to death, and when he is dead, you must beat the flesh in the skin after the French fashion of beating a cow." "No brawn,

pork, or bacon should be eaten without wine." A certain prejudice seems to have existed against the flesh of red and fallow deer as being too dry and cold. In that age of humoralistic medical theory all food is, indeed, judged according to a fictitious standard. Some meats are held to be heating, others are watery, and the choleric must not eat of the former or the weakly of the latter kind. The list of birds that came to table in the days of Shakespeare is enough to stagger the Wild Birds Preservation Society. Thus, robin redbreasts are esteemed "a light and good meat," and all the little song-birds are mentioned as edible. The jay has a bad name. He suffers from falling sickness and conveys it to others. The sparrow has an aphrodisiac effect; the wag-tail is conducive to the shaking palsy; the wren is hostile to stranguary and the stone; the cuckoo is "hot and leprous." Fishes, especially the fresh-water kinds, are recommended on much the same grounds as birds. Loches are good for women in childbed; the liver of the whale is said to smell like violets and to taste most pleasantly. Lampreys are very sweet and nourishing, but they tempt men to surfeit. "How ill they are even for strong stomachs, and how easily a man may surfeit on them, not only the death of King Henry I. but also of many brave men and captains, may sufficiently demonstrate." Caviare, under the name of cavialy, is praised, but an Italian proverb is quoted—

> "Chi mangia di Caviale
> Mangia moschi, merdi, e sale.

This is not civil. It is curious that the taste for caviare survives while that for lampreys has disappeared. Dr. Thomas Moffet was a fine specimen of the physician of his age. A person of many accomplishments, a courtier, and traveller, he ranks as one of the worthies of Caius College and Trinity College, Cambridge. His curious book retained such influence that it was reprinted as a serious contribution to knowledge as lately as 1746.

ARTIFICIAL HYPOSPADIAS FOR INTRACTABLE URETHRAL STRICTURE.

IN the *Australian Medical Journal* of Dec. 23rd, 1911, Mr. R. Hamilton Russell has described an ingenious operation for the relief of intractable urethral stricture. He conceived the project of producing artificial hypospadias and subsequently operating for its relief, making a new urethra independent of the stricture. A man, aged 44 years, was admitted to hospital with complete retention of urine accompanied by uræmic symptoms. Some four years previously he had undergone perineal section, but had gone up the country, with the result that his urethra was neglected. Artificial hypospadias was performed, and so great was the relief and so inconsiderable the inconvenience involved that he declined any further operation. The procedure is very simple. The scrotum is first divided longitudinally throughout along the median raphé until the corpus spongiosum is exposed. The opening will be diamond-shaped when the testes are drawn to either side. Each half of the scrotum is sewn up with horsehair applied antero-posteriorly, commencing at the outer angles of the diamond and continued inwards towards the middle line as far as convenient, so that each testis is sewn up in a separate bag. A director is now passed into the urethra, which is opened a little in front of the scrotum. The urethal incision is carried backwards into the perineum past the strictured portion. The whole length of the incised urethra is stitched on either side to the skin, whether of the penis, scrotum, or perineum. In this way a condition closely simulating perineo-scrotal hypospadias is produced, the differences being that the anterior portion of the urethra is not laid open and the penis and glans are mobile and free. The operation is completed by tying in a rubber catheter through the perineal wound and applying a simple dressing of gauze and wool. The scrotal sutures should not be removed for 10 days. In a second case a man, aged 80 years, had suffered from intractable stricture for 40 years. One day he suddenly became comatose and his medical attendant aspirated the distended bladder as he could not pass a catheter. After 12 hours consciousness returned. Next an attempt to pass the stricture under chloroform failed. The membranous urethra was opened through the perineum and a rubber catheter passed into the bladder (Cock's operation). Several ounces of very foul urine and pus were evacuated and the bladder irrigated. A week later the operation described above was performed, with the result that the trouble which had rendered life a burden for 40 years was removed. Washing out the bladder was then a simple matter. At first it would not tolerate more than 4 ounces of urine, but within a fortnight it could take 18 ounces comfortably. The drawbacks to the operation are loss of procreative power and having to perform micturition in the feminine fashion. Neither of these is serious in men who have reached or passed middle age. They are trivial in comparison with the troubles relieved. Sexual power would doubtless be unimpaired. It might be suggested that the making of a permanent urethral fistula would do equally well without dividing so much of the urethra, but Mr. Russell does not think so, and believes that the division of the scrotum adds greatly to the comfort and facility with which micturition can be performed. He also suggests that in traumatic stricture involving the membranous urethra the operation may be useful. Although it would not be possible to get behind the stricture, the difficulty in managing it experienced through the urethra would be much diminished in dealing with it at close quarters through the perineum.

THE MINERAL WATERS OF ESSEX.

AN interesting contribution has been added to the Essex Field Club Memoirs in the form of a history of the mineral waters and medicinal springs of that county by Mr. Miller Christy, F.L.S., and Miss May Thresh. It appears that in Essex there are a considerable number of springs which have been in the past valued for medicinal purposes and visited more or less extensively by persons who regarded these waters to have curative properties. Altogether, we gather, rather more than a score of such wells attained at one time a certain measure of fame. The well at Wanstead became known at the very beginning of the seventeenth century. Some eight others—Witham, South Weald, Upminster, Little Leighs, Felstead or Little Dunmow, Mark's Hall, Woodham Ferrers, and Colchester—were known and used at least as early as the end of the seventeenth century. About a dozen others (namely, those at Woodford, West Tilbury, Havering, Chigwell Row, Wethersfield, Gidea Hall, Hornchurch, Stapleford Abbotts, Springfield, Twinstead, Plaistow, and Ilford) appear to have been discovered during the eighteenth century, while only two—Hockley and Dovercourt—became known during the nineteenth century. The wells containing an important quantity of salines were at South Weald and Upminster, which provided chiefly the sulphates of magnesium, calcium, and sodium; Hockley water was a bitter magnesium water. The rest appear to have attracted attention through their chalybeate properties. At Dovercourt an attempt was made to establish a regular spa about 50 years ago, and a spa-house exists there to-day. At Hockley a spa was established and a pump-room built in 1842, but the enterprise failed, for in 1871 it was written that the whole place had "a most dilapidated appearance, the hotel has been let at £10 per annum as a beer-shop, and the unfortunate spa-room is used as a Baptist chapel." In

1893 another attempt was made to develop the spa, but without success, until two or three years ago a builder took the matter in hand, with the result that "the Spa Hotel (a couple of hundred yards distant from the pump and well) on the road from Rayleigh to Rochford, after many years of decadence, is at last a prosperous hostelry, and it is likely to do well now that the exceptionally picturesque district around Hockley is developing rapidly as a residential district." The water contains as its chief constituents, according to Miss Thresh, 197·3 parts per 100,000 of magnesium sulphate, 95·9 parts of calcium sulphate, 95 parts of sodium chloride, and 39·7 parts of calcium carbonate. It acts as a gentle aperient, and shows a composition which, if the spring had been on the continent, would have attracted a *clientèle* long ago.

ACUTE DILATATION OF THE STOMACH IN PNEUMONIA.

ACUTE dilatation of the stomach is a rare condition which has attracted increased attention in recent years. Upwards of 200 cases have now been recorded. Its pathogenesis is somewhat obscure. It may occur without obvious cause in an apparently healthy person, in the course of some disease, or after some operation, abdominal or not. In the text-books it is stated to occur sometimes in severe acute or wasting diseases, but it does not appear to be mentioned among the complications of pneumonia. Yet ten years ago in our columns Dr. H. Campbell Thomson published an important paper on acute dilatation of the stomach, in which he reported one case in which it occurred in pneumonia,[1] and Dr. Charles R. Box and Mr. Cuthbert S. Wallace reported a second case.[2] A paper in the *American Journal of Medical Sciences* for December, 1911, by Professor M. H. Fussell tends to show that acute dilatation of the stomach is not such a rare complication of pneumonia as might be supposed. The connexion first attracted his attention in July, 1910, since which date he has seen three other cases, and on searching his notes he found a fifth case, observed in 1904, in which the connexion with pneumonia was not recognised at the time. The following are some examples. A youth, aged 20 years, was attacked with severe pneumonia involving first the right lung and then the left until only the right upper lobe appeared to be in use, though there was some resolution at the right base. The temperature ranged between 103° and 104° F. The pulse was very rapid, frequently reaching 140. Resolution slowly progressed and the temperature fell by lysis. Three days after the temperature had been normal much creamy sour material was suddenly vomited. Professor Fussell saw the patient a few hours later and found the stomach greatly distended. The left hypochondriac and umbilical regions protruded while the right hypochondrium was flat. The outline of the stomach could be seen, and tympany extended almost to the pelvis. The patient was collapsed and the pulse running. Notwithstanding his apparently moribund condition a stomach tube was passed, much liquid was removed, and the stomach was washed out. The protrusion immediately disappeared and the patient was much relieved. Recovery ensued. In a second case the pneumonia was confined to the left lower lobe in a man aged 35 years. On the fourth day the temperature suddenly fell to normal, but it again rose to 102°, and on the sixth day there were symptoms of intestinal obstruction. The abdomen was greatly distended and the bowels could not be got to act by any means. On the seventh day Professor Fussell saw him in consultation and found that the abdominal distension was epigastric and extended 2 inches below the umbilicus, forming a tympanitic tumour. The pulse was rapid, but good. There was complete consolidation of the lower left lobe, which was undergoing resolution. The patient was semi-comatose and delirious, and there was some vomiting. A stomach-tube was introduced and a small amount of sour material was obtained, with much gas. The epigastric tumour immediately disappeared and the abdomen became flaccid. On the next day and on three other occasions the stomach was washed out, and after the fourth washing there was no return of the distension. Eserine and strychnine were given hypodermically and recovery ensued. Professor Fussell has collected from literature six other cases. Analysis of the whole 11 cases shows that 6 were fatal. The dilatation occurred before the crisis in 8, after it in 3. Collapse is reported in 5, diarrhœa in 2, and vomiting in 8. Most of the patients were delirious. In two cases the vomit had a fæcal odour. Constipation was the rule. Frequently the patient was collapsed, with pinched anxious face, sunken eyes, and rapid breathing. The condition must be differentiated from general intestinal distension, peritonitis, and intestinal obstruction. General abdominal distension is common in pneumonia, but the outline of the stomach cannot be made out, the stomach tube will not remove the distension, and frequently a rectal injection will give relief. Moreover, there is no vomiting, and often there is diarrhœa. In general peritonitis there is the same rapid distension as in gastric dilatation, but the outline of the stomach cannot be seen, and the abdomen is tender. In three cases intestinal obstruction was diagnosed. But in it the distension is general, and the passage of the stomach tube will not cause this to disappear. Sudden abdominal distension in pneumonia should suggest acute gastric dilatation. Before the patient is moribund the stomach tube should be passed and lavage performed. This must be repeated as often as the dilatation recurs. The position of the patient is of some importance. If, as is held by some, the cause of the dilatation is constriction of the duodenum under the root of the mesentery, this may be removed by turning the patient on the right side or on the face. Professor Fussell thinks that these pneumonic cases are in favour of some toxic cause affecting the innervation of the stomach. The dilatation so caused may, by traction, produce constriction of the duodenum.

[1] THE LANCET, Oct. 26th, 1901, p. 1113.
[2] Ibid., Nov. 9th, 1901, p. 1259, and July 22nd, 1911, p. 214.

SOME DEVELOPMENTS IN PHARMACEUTICAL RESEARCH.

IN the domain of pharmaceutical research some useful work has been accomplished since the beginning of the present year, evidence of which is to be found in the three papers that were communicated to the February evening meeting of the Pharmaceutical Society in London. In the Pharmacy Research Laboratory of the society Professor H. G. Greenish, joint editor of the forthcoming edition of the British Pharmacopœia, is, with the assistance of Miss D. J. Bartlett, undertaking a series of experiments with the object of drawing the attention of pharmacists to drugs the sophistication of which exists in more than isolated cases. The first report on these investigations deals with powdered gentian, nux vomica, and ipecacuanha, and was the subject of one of the communications in question. Of powdered gentian 33 samples were examined, and 13 failed to comply with the requirements of the Austrian Pharmacopœia as to aqueous extract. The yield of aqueous extract depends not only on the original quality of the root, but also on the treatment to which the root has been subjected, and the test serves to exclude exhausted root, while it excludes definitely highly fermented root. The 13 samples were therefore of poor quality. On the other hand, with five exceptions, the samples

satisfied the ash-limit of the Austrian Pharmacopœia. An examination under the microscope showed that five samples were grossly adulterated, three of them containing an abundance of almond shell; five others also showed evidence of contamination with foreign vegetable substances, and the authors draw the conclusion that "the quality of commercial powdered gentian still leaves much to be desired. Intentional adulteration with foreign vegetable powders still continues. Carelessly cleaned root is ground to powder, and a large proportion of the samples are deficient in water soluble substances." The 11 samples of nux vomica examined gave much more satisfactory results, and the 11 samples of powdered ipecacuanha, with one exception, contained sufficient total alkaloid to comply with the requirements of the Committee of Reference in Pharmacy. The series of investigations promises useful results, and if other drugs are found to be adulterated to the same extent as powdered gentian root valuable caution will be instilled. In another paper read at the same meeting the same authors demonstrated that the frequently repeated statement that black mustard seeds do not always contain sufficient myrosin to decompose all the sinigrin they contain, was incorrect. In two of the samples of black mustard seeds examined there was, in fact, sufficient of the enzyme to decompose a much larger quantity of the glucoside than the seeds themselves contain, while in all the samples there was a sufficiency of myrosin. It therefore follows that the practice of adding white mustard seeds, which contain an excess of the same or a similar enzyme, myrosin, is not necessary to complete the decomposition of the glucoside, although a mixture of the two kinds of seeds may be more palatable than the black seed alone. The third paper consisted of a preliminary report on examinations of asafœtida and oil of asafœtida which have been conducted by Mr. E. F. Harrison and Mr. P. A. W. Self. The authors describe in detail the process employed in investigating the oil, and, since there is good reason to believe that the virtues of asafœtida are chiefly due not merely to the essential oil but to the sulphur-containing constituents of the oil, they draw especial attention to the importance of an accurate determination of the amount of sulphur present. They showed that high percentage of sulphur in the oil goes with high specific gravity, high refractive index, and levorotation, while the lowest percentage of sulphur goes with the lowest specific gravity and refractive index, and dextrorotation. The authors were reluctant to suggest that the figures they obtained established any sort of standard or limit, although the samples were chosen to be as representative as possible; they are inclined to think, however, that when the amount of sulphur in the oil is not under 1·5 per cent. of the real gum resin, there is a *primâ facie* case for regarding the drug as pure. They are continuing their investigations in the hope that the accumulation of further data may lead to results of greater value.

THE PATHOLOGY AND TREATMENT OF TUBERCULOSIS.

IN another column we publish a communication from our correspondent at Budapest with regard to the views held by Dr. Joseph Hollós respecting certain points in the pathology and treatment of tuberculosis. The remarks on latent and masked tuberculosis will doubtless be received with a considerable amount of scepticism by practitioners in this country. Nevertheless we have thought it well to publish them, as they have received some attention from French observers. Certain symptoms are detailed which Dr. Hollós believes are indicative of latent tuberculosis, but similar symptoms occur in so many other conditions that much hesitation will be experienced in accepting Dr. Hollós's contentions that they are due to the "high quality of sensitivity" of the organism against the toxins of tuberculosis. Dr. Hollós also states that patients in the latent stage of tuberculosis respond well to antituberculous treatment. The patients under his care were without exception treated with Spengler's serums—namely, the smaller proportion of them with tuberculin and the larger proportion with the "tuberkulose Immun-Körper" (I.K.). In THE LANCET of Sept. 16th, 1911 (page 838), we made some remarks on this "I.K." treatment for tuberculosis, and after a criticism of the accounts which had been published claiming very favourable results from the employment of the preparation we asked our readers to receive the results of employing "I.K." with reserve for the present. After reading Dr. Hollós's remarks our opinion is not changed, but we should be interested to receive from our readers any personal experience they may have had in treating patients with Dr. Spengler's serums.

THE CANADIAN ROYAL COMMISSION ON TUBERCULOSIS.

WITH the administration of sanatorium benefit under the National Insurance Act in view, the attention of statesmen, Insurance Commissioners, local authorities, and practitioners may be directed advantageously to the report of the Royal Commission on Tuberculosis for the Province of Quebec recently issued. The report presents the problem of the prevention and eradication of tuberculosis in clear, concise, and eminently practical fashion. For ready reference the arrangement of the report is excellent. The body of the report is prefaced by a short summary of six pages which contains the more important conclusions. Following this comes the detailed report with excerpts from the evidence. The Commission consisted of 14 members, and included Dr. E. P. Lachapelle (chairman), Professor J. G. Adami, Dr. Roddick, and Colonel Jeffrey Burland, the donor of the Royal Edward Institute. The general conclusions include an emphatic statement that tuberculosis is infectious and transmissible. The unavoidable confession is made that the mortality from tuberculosis is higher in the Province of Quebec than in the Province of Ontario and the adjacent United States. It is further pointed out that the death-rate from tuberculosis in the rural population equals that in the urban population, who, theoretically, live under more unhealthy conditions; that the mortality among women is considerably greater than among men; and that the mortality among French Canadians is higher than among Anglo-Canadians. Attention is especially drawn to the spread of tuberculosis through contagion in families, in the collective life of schools, boarding schools, offices, and workshops—in short, through the influence of vitiated air in all places where people are gathered together. Means for combating tuberculosis are divided in the report broadly into: (1) Measures that can be carried out at once; and (2) measures to be carried out gradually. Among measures which the Commissioners hold can be carried out at once are included stricter application of the laws contained in public health statutes, the teaching of hygiene in schools, popular education in relation to tuberculosis, the medical inspection of schools and industrial establishments, the establishment of tuberculosis dispensaries in the principal centres, the erection of isolation hospitals for advanced cases among the poor, the establishment of open-air schools for certain groups of children, and legislative measures regarding institution of farm colonies and holiday colonies, the the employment of children, the abuse of alcoholism, and the inspection of meat and milk. Among measures to be carried out gradually may be noted the creation of sanatoriums, the improvement of dwellings under existing statutes, and fresh legislation to promote the building of cheap, healthy

dwellings for the working classes, and the improvement of hygiene generally throughout the province. Finally, the report terminates by the submission to the Lieutenant-Governor in Council of certain recommendations relating especially to the share the Government should take in the campaign against tuberculosis. These include the following five most practical requests, of which, in view of their significance in the present issue before the country, we reproduce the *ipsissima verba*.

1. That very explicit instructions be given to the Provincial Board of Health, to municipalities and other duly constituted authorities to enforce the regulations respecting the compulsory notification of tuberculosis, the disinfection of contaminated premises, the healthy condition of dwellings, schools, and industrial establishments; and that such authorities be actively assisted by the law officers when compelled to enforce such regulations.

2. That the Provincial Board of Health be the central authority which will direct the application of the means of combating tuberculosis and, to that end, that it be given a sufficient appropriation to establish a special department for tuberculosis with the necessary staff. That department should be under the direction of a *physician of acknowledged competence in the matter* (the italics are the Commissioners') who would apply all the educational means mentioned in the report, inspect the antituberculosis institutions, and strive to have others established to complete the antituberculosis armament, compile statistics, and submit a yearly report on his administration and on the results of the campaign against tuberculosis.

3. That in every municipality or union of municipalities, where there is a chartered antituberculosis association, the Government, on a favourable report of the Provincial Board of Health, contribute a proportionate amount (to be determined) towards the cost and maintenance of every established dispensary and empower the municipalities served by such dispensaries to contribute an equal amount towards their erection and maintenance.

4. That the Government contribute a proportionate amount (to be determined) towards the establishment of isolation hospitals or the construction of special pavilions in existing hospitals receiving advanced cases of tuberculosis among the poor and empower the municipalities served by such isolation hospitals or pavilions, to contribute to their erection and maintenance.

5. That the Government contribute a certain amount (to be determined) towards the maintenance of advanced cases of tuberculosis among the poor, in special hospitals or pavilions, by distributing that amount *pro rata* at so much per head and per week, and empower municipalities to also contribute in the same manner to the same object.

The recommendations are based on most interesting evidence which is cited throughout the body of the report and on the plan of the antituberculosis campaign of the city of New York and the plan of the antituberculosis campaign in Edinburgh, an account of each of which is included in valuable appendixes, which contain also an account of the present condition of the campaign against tuberculosis in the various provinces of the Dominion of Canada.

Dr. Archibald E. Garrod, F.R.S, has been elected physician to St. Bartholomew's Hospital to fill the vacancy caused by the retirement of Dr. Norman Moore from the active staff of the hospital.

HUNTERIAN SOCIETY.—The 93rd anniversary dinner of this society was held at De Keyser's Royal Hotel on Feb. 7th, the President, Dr. R. Hingston Fox, being in the chair. There was an attendance of 66 Fellows and guests, including ladies. The Royal toasts were proposed by the President; "The Hunterian Society" was proposed by Sir George Newman and replied to by Dr. A. T. Davies. "The Guests" and "Sister Societies" were proposed by the President. Mr. Rickman J Godlee replied for the Royal College of Surgeons of England, and Dr. J. Mitchell Bruce for the Medical Society. Dr. T. B. Hyslop spoke for the guests. A programme of music was provided by Miss Christine Roy and Mr. Robert Carr, vocalists, and Mrs. A. C. Jordan, who gave violin solos, Miss Gwendoline Williams playing the accompaniments. The music was much appreciated. The annual oration was delivered at the London Institution on Feb. 14th by Dr. T. Glover Lyon on "The Cure of Consumptives, a Review and a Forecast." Dr. Lyon emphasised the important part played and to be played by sanatoria in the treatment of consumptives, and drew attention to many practical points in which sanatorium treatment, as conducted in most existing institutions, failed to conform to the needs of the various types of patient.

AN EXAMINATION OF THE MEDICAL PROVISIONS OF THE NATIONAL INSURANCE ACT.

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III.[1]

Estimates of Attendance Required.

UNTIL the regulations are issued by the Commissioners, uncertainty must exist as to the services which are to be performed by practitioners under medical benefit. Nevertheless, attempts have been made to estimate the number of attendances which, on the average, each insured person will require, from the attendances received at present by members of Friendly Societies and clubs, including visits to patient's houses and consultations at home. It is worth while examining how far these figures are applicable to the persons who will be insured. The British Medical Association is collecting exact information on the point, but pending its publication the following may be quoted:—

Reference.	Number in club.	Average attendances.	Remarks.
B.M.A. Contract Practice Report, p. 14.	40,893	4·1	Figures totalled from 269 clubs.
Letter, *B.M.J.*, May 27th, 1911 (figures for 10 clubs)—			
Club B	42	2·8	Resident staff of firm—young men.
,, D, E, F, & G ...	267	4·5	Oddfellows.
,, H	41	1	Visits exceptionally distant.
,, I & J	229	5·8	Include single employed women.
,, K	195	3·8	—
,, L	15	3·2	All clerks.
From "Thirty Years Provident Dispensary Work," 1911.	Several thousand.	4·77	Unselected lives; no age-limit; 78% women and children.
Market Drayton Dispensary, *B.M.J.*, Dec. 2nd, 1911.	810	6·5	Unselected lives; bulk women and children.

Scattered through the Contract Practice Report, and in the columns of the medical journals for the last year, will be found other figures and estimates of a similar character. Most of them range between 1 and 6. The average for clubs consisting of adults examined before admission and with an age-limit appears to be about 4.

In applying these figures to the insured population the following factors have to be considered.

Value of life.—In most clubs there is an examination for admission, though often not of a very rigid character. Members of approved societies, despite the arrangements for deposit contributors, are not likely to be highly selected. Indeed, several important societies have already announced their intention of accepting members without any medical examination at all. But, as pointed out, promise has been given that bad lives shall be treated at a special rate of remuneration, and it is within the power of the Insurance Commissioners to arrange for a medical examination in every case before requiring a person to be attended at the ordinary fee. Thus that part of the insured population treated at the general rate might be more selected than existing club members.

Sex constitution.—This is of importance in view of the fact that women are believed to require more medical attendance than men. The actuaries estimate the number of persons likely to become members of approved societies, excluding Ireland, at: men, 8,530,000; women, 3,522,000—i.e., 70 per cent. men. These figures were compiled before the right was given to employed married women who were insured before marriage to continue, if they so elect, to be insured

[1] Articles I. and II. were published in THE LANCET of Feb. 10th (p. 383) and 17th (p. 447).

after marriage upon a reduced scale of benefits and contributions. The number who will exercise this right cannot be determined, but the actuaries suggest that it might be 700,000 in the course of ten years. Attendance in cases of maternity is of course excluded from medical benefit.

Age constitution.—The following is given by the actuaries as the probable age-distribution of persons expected to become members of approved societies:—

Age.	Number.	Age.	Number.
16–20 years	2,004,000	40–50 years	1,969,000
20–30 ,, ...	3,826,000	50–60 ,, ...	1,179,000
30–40 ,, ...	2,733,000	60–65 ,, ...	341,000

It will be noticed that 71 per cent. are under 40 years of age. In existing clubs the average age is probably higher. Sir Thomas Whittaker, during the debate on the second reading of the Bill, said that the position of some of the Friendly Societies was precarious and actuarially unsound owing to the increase in the number of the older members. "One of the strongest societies, the Hearts of Oak, has now three times as many members over 70 years of age as it had ten years ago."

Effect of sanatorium benefit.—If arrangements are made whereby advanced and chronic cases of tuberculosis can be sent to appropriate institutions, an appreciable reduction of the work required from the general practitioner may be anticipated. It has been estimated that 25 per cent. of the sick pay of the Foresters is in respect of this malady.

Venereal disease.—In practically all clubs this is an "extra." Under the Act it will be treated as part of medical benefit.

Organisation of the profession.—Advantage may be anticipated from the fact that in place of the existing competition, which has led to such disastrous results, medical men will be working together upon panels and in committees. This will enable arrangements to be made for mutual benefit. For example, medical men might agree to exchange patients, subject to their consent, so that each practitioner would have the bulk of his work in his immediate neighbourhood. It is said that insured persons will make unreasonable demands for medical attendance. There does not seem to be any cause why such abuse should be greater than it is among existing club patients, but in any case the profession will be in a stronger position to deal with it under the Act. Where at present a practitioner hesitates to complain of a tiresome person for fear of losing an appointment, he will in future run only the risk of losing a single patient. It is said, too, that attendances among club patients are swollen by malingering. But if the Medical Committees are given power to deal firmly with this evil, it should under the Act be reduced to a minimum. In comparing existing with future conditions it should be borne in mind that, except in localities where special arrangements are made, time will not be occupied in dispensing. It would appear, therefore, that several factors make, or may make, for a reduction in attendance as compared with that now given to members of clubs. If a reliable estimate could be made of the number of attendances each insured person, on the average, is likely to require, a useful step preliminary to fixing an adequate fee would have been taken.

The Remuneration.

Payments will be made to practitioners for medical attendance and treatment by the Insurance Committees with which they contract. The revenue of the Insurance Committees out of which the cost of medical benefit will be paid is to be derived partly from approved societies, which by Section 15 (6) are required to pay to the Insurance Committees such a sum in respect of their members as may be agreed upon between the society and committee, or in default of agreement may be determined by the Insurance Commissioners. No specific sum is mentioned here or elsewhere in the Act; the matter is entirely one for local arrangement or determination by the Commissioners. The remainder will be paid, in respect of deposit contributors, under Section 42, which provides that there shall be paid each year to the Insurance Committee out of the Post Office fund such sum as the Insurance Committee, with the consent of the Insurance Commissioners, determine. Here again no amount is specified by the Statute.

The 6*s.* which has been so often referred to was the sum the actuaries were told to assume as the cost of medical treatment and medicines for the purpose of determining the Government contribution. Whilst it is in no way statutory, it is probable that it will form a basis from which to start negotiations. In the ensuing paragraphs it is spoken of only in that sense.

To determine how the Insurance Act is going to affect medical practitioners financially is really a very difficult matter. Many doctors have stated that they anticipate losing from one-fifth to one-half of their income, but facts and figures in support of these statements have not been abundant, and where given they have, in some cases at least, been based upon errors, instances of which have been quoted. The reason is that the full data required to make a comparison do not exist. It is only in respect of patients—that is, persons actually treated—that reliable figures are forthcoming. A practitioner can readily determine from his books the number of times he has seen each of his patients and the amount he has received per attendance. But what he requires to know in order to estimate his position in the future is the number of insured persons who will be on his books; persons for each of whom he will be paid, though some will not require medical attendance at all. It is impossible to see how this figure can be arrived at, except in rare isolated districts where there is only one practitioner, who can be looked upon as having practically the whole population of the district under his care. Nor is this the only difficulty. In determining who among his patients are likely to become insured, a medical man must not only be familiar with the qualifications and conditions laid down by the Act, but he ought also to possess certain private information regarding the incomes, ages, &c., of his patients, which in many cases he may not have. Finally, assumptions have to be made both as to the amount of the capitation or other fee which may be fixed, and the effect of any income-limit which may be imposed.

A rather more hopeful line of investigation is based upon an estimation of the total amount each practitioner will, on the average, receive from the fund for medical benefit. In round figures, the total number of persons who will eventually be insured for medical benefit is 13,000,000. The number of practitioners estimated to be available for service under the Act is 24,000.[2] On the average, then, each practitioner will have on his books 542 insured persons, in respect of whom there will be paid £162 for attendance and medicines. The total population of Great Britain is 40,834,714. Deducting 1,000,000 for persons in the services, &c., the number of persons to each practitioner is 1660. If, therefore, the whole population were insured at the same rate, the average medical income from medical benefit would be just under £500, out of which would have to be provided the cost of drugs, &c. It is, of course, impossible to determine what the average medical income is, but in a recent correspondence in the *British Medical Journal* it was placed appreciably below this figure.

Another rough comparison may be made by estimating as far as possible the total amount which is at present paid for medical attendance and medicines by the 13,000,000 persons who will be insured by the Act. It has been calculated that there are at the moment about 4,000,000 persons receiving medical treatment through Friendly Societies, of whom doubtless the great majority will become members of approved societies. Figures in the Contract Practice Report and elsewhere show that these pay on the average to the medical profession for attendance and medicines about 3*s.* 6*d.* per annum or, say, 4*s.* to allow for a certain number who, though subscribing to a club, pay a doctor privately. It may be taken that members of registered Friendly Societies on the whole do not consist of the poorest section of the working class. To quote the Contract Practice Report, "it is probable that the great bulk of the members of the registered Friendly Societies are, in fact, drawn from those of the working classes who follow regular occupations, together with a considerable number of small shopkeepers. ..... There is evidence that in various districts a considerable number of persons are taking advantage of the arrangements who are in a better social position than those for whom the service was intended." Do the remaining 9,000,000 pay on the average more or less than members of registered Friendly Societies? Of some of them the report says: "The smaller or unregistered Friendly Societies, and especially

[2] Brit. Med. Jour, Jan. 13th, 1912.

the Dividing Societies, while they provide mainly for a somewhat similar class, cater rather more than the large Permanent Societies for those who are less regularly employed." There is also a large class who subscribe to private clubs or provident dispensaries, and another large group who receive their medical attendance through the Poor-law or hospitals, or go without it altogether and resort to self-medication. An interesting light is thrown upon the expenditure by working girls on medical attendance, &c., by a volume published recently by the Board of Trade,[3] containing a detailed analysis of the total expenditure for a year of 32 girls employed in factories, dressmaking, and other occupations. The average weekly wage was 15*s.* 9*d.* Of the 32, one was insured for medical benefit. The total expenditure of the remainder under the heading of medical attendance and medicines was £12 5*s.* 5*d.*, and was made up as follows: medicines, £6 7*s.* 6½*d.*; dentist, £2 17*s.* 6*d.*; doctor, £1 5*s.*; miscellaneous, £1 15*s.* 4½*d.* The high proportion spent upon medicines is noteworthy. The bulk of it consisted of patent and proprietary drugs. "Miscellaneous" includes such expenses as payment of substitute while away from work, eye-glasses, chest-protector, &c. These were all young girls, but several were ill and away from work for various periods during the year. Still they must be regarded as to a certain extent picked, for any girl who was seriously ill would presumably not have been able to keep up the record.

Against these poorer classes must be placed the class of comparatively well-to-do private patients who may come in as voluntary contributors. Their numbers and qualifications have already been considered. While individually these will pay less, it does not seem probable that they will be so numerous as to wipe out all the gain upon the others.

These considerations have not been brought forward with a view of suggesting that a 6*s.* capitation fee is sufficient. No sum can be accepted or even considered by the profession until the duties to be performed for medical benefit have been defined. Under any circumstances an efficient service can only be obtained if the remuneration is adequate. It is merely intended here to point out the danger of making a claim for a higher fee on the ground that the profession as a whole is at the moment getting a larger total sum from the persons who will be insured than it will receive under the Act.

The method of payment is a matter for local arrangement. Payment by capitation fee has the advantage that it reduces the cost and trouble of bookkeeping.

Cost of drugs.—An obvious criticism of the foregoing is that the profession will not get 6*s.*, since this has also to cover the cost of drugs and such surgical appliances as may be prescribed. But for purposes of comparison it is necessary to take the higher figure, since medicines are usually included with attendance among the working class. It is currently assumed that the cost of drugs will be 1*s.* 6*d.*, leaving 4*s.* 6*d.* for the doctor. But there is no statutory authority for this division, nor is there anything to justify it in the Actuaries' Report. Most practitioners with knowledge of dispensing will agree that 25 per cent. is an unnecessarily high proportion to allocate to cost of drugs. It is a matter for regret that Insurance Committees are probably unable under the Act to open and conduct their own dispensaries, as the system by which an insured person can have a prescription made up by any chemist on the list is costly. Medical men themselves can help to reduce the expenditure. Probably there will be less drug-taking than there is at present, and medicines will be prescribed in more concentrated form and in larger quantities at a time. The indiscriminate sale of patent and proprietary medicines has always been regarded by the profession as harmful. The regulations might well require that doctors on the panel should be forbidden to prescribe them. As regards surgical appliances it is important to notice that Section 12 empowers a society or committee to provide them out of the fund for sickness benefit in the case of a person who is an inmate of any workhouse, hospital, asylum, convalescent home, or infirmary.

Payments from Other Sources.

It has been assumed by many practitioners that 6*s.* for medical benefit is the only sum that can be paid to them whatever the services they may be called upon to perform. Some, for example, have supposed that they will be required to furnish various reports and statistics under Section 60 which makes Insurance Committees responsible for such duties. But the Act clearly defines medical benefit as medical treatment and attendance, and practitioners will be justified in asking for additional remuneration for any services which are not of this nature. The point is of importance in view of the fact that the rate paid by the Government for attendance upon Post Office employees—viz., 8*s.* 6*d.*—is being used as an argument for raising the capitation fee for medical benefit to that figure. It must be remembered that for this remuneration Post Office doctors have to perform duties other than those of a purely therapeutic character. It is desirable to enumerate briefly the various services which may be the subject of extra remuneration from medical benefit, or may be paid for from other funds under the Insurance Act.

Extra medical services.—The guarantee that the profession has here is contained in the statement made by the Chancellor at the special Representative Meeting on May 31st. As reported by the *British Medical Journal*, June 3rd, he said: "Of course, the payment of a specialist would not be included in the capitation fee, and, therefore, if there were consultations, they must necessarily be outside the range of whatever capitation grant is paid; it must necessarily be. That would not be a burden cast upon the medical man, but the society, or the Local Health Committee, as the case may be, would have to pay that fee. With regard to operations, that also I should put in the same category. Most of the various operations—not all, of course—would be performed in institutions, and I can well understand the medical profession insisting upon special arrangements being made for serious operations. That is a matter you will have to arrange with the Local Health Committee, subject to the approval of the Insurance Commissioners." On the question of night work he did not express a definite opinion. The promise made on the same occasion of a higher rate of pay for bad lives has already been quoted. The Chancellor concluded with the remark, "I think it would be better for you if you were to confine yourselves to those three or four really big burdens upon the profession—consultations, operations, and mileage."

For major operations, arrangements will probably be made with hospitals, and Section 21 allows payments to be made to hospitals from various sources. It would obviously be unfair to charge to medical benefit the entire cost of an operation which has the effect of saving the funds for payment during sickness and disablement.

Mileage.—This might be regarded as covered by the promise that local circumstances shall be taken into consideration in fixing the capitation fee. Clearly 6*s.* is not high enough in a scattered country district, but is it quite reasonable to ask for a higher capitation fee and mileage in addition to that? In towns mutual arrangements between practitioners should reduce long journeys to a minimum.

Certificates.—It has already been pointed out that approved societies will require numerous certificates in order to make the payments in respect of sickness and disablement benefit. Medical practitioners will be under no contract with approved societies, and it will be a matter for mutual arrangement whether payment shall be made for each certificate or by some other system, and what the amount shall be. These certificates impose legal liabilities upon the medical men giving them, and cannot be regarded as medical treatment and attendance. It is, of course, impossible to determine what the number of certificates required will be. In London the percentage of sick absentees on the established staff of the Post Office in 1909 was for males 60 and for females 84. Allowing for repetitions, it is possible that, on the average, each insured person might require one certificate.

Treatment of tuberculosis.—If practitioners on the panel are recognised as persons undertaking treatment of tuberculosis within the meaning of Section 16, a substantial addition to the remuneration from the fund for sanatorium benefit may be anticipated. Further, Section 17 (1) allows the Insurance Committees to extend the special treatment to the dependents of insured persons, and for them obviously extra fees must be paid. The amount available for sanatorium benefit, irrespective of the grant of a million and a half for building, is 1*s.* 3*d.* per insured person. There is no reason

[3] Accounts of Expenditure of Wage-earning Women and Girls.

why a considerable proportion of this should not go to the medical profession.

Maternity benefit.—In estimating remuneration on a capitation basis per insured person, some part of the payment from maternity benefit should be excluded, since it will be paid in many cases in respect of persons outside the 13,000,000. The Chancellor of the Exchequer estimated that £500,000 would go to the medical profession from this source, but the grounds for this opinion were not stated. If fees are raised very much, societies may encourage their members to obtain the services of midwives rather than doctors. The profession should, however, secure a substantial increase in the fees paid for attendance upon cases to which they have been summoned under the Midwives Act of 1902.

LORD LISTER'S FUNERAL.

ON Friday last, Feb. 16th, the body of the late Lord Lister, the greatest Englishman of his century, the master surgeon, was buried at Hampstead Cemetery near that of his predeceased wife. So much his country, which would fain have done him the highest honour that lay in its power by burial in the national Pantheon, was constrained to yield to his own personal wishes. But it claimed at least the prerogative of first paying final homage by a solemn memorial service in the historic great Abbey of Westminster. For Lister was a maker of history, not for England only, but for the human race. No personal skill as a surgeon, however great, could have gained for him the homage and gratitude of the entire world. It was the keen observation, the years of patient questioning of Nature's ways, the illuminating insight, the patient demonstration that finally enabled him to lay a firm foundation for the surgical art—never to be superseded no matter what developments in superstructure it may be called on to sustain—that called forth the splendid tribute of reverence to the remains of Lord Lister from rulers and nations, from the scientists and savants of the earth, and from representatives of every rank and class in life among his own countrymen.

Before 1 P.M. the lantern and choir of Westminster Abbey were filled with official representatives, and a goodly portion of the general public occupied the north transept and aisle and the nave. The King was represented by Sir Frederick Treves, Queen Alexandra by Sir Francis Laking, and Princess Louise (Duchess of Argyll) by Mr. Oswald Balfour. The Prime Minister in person offered the tribute of the nation at large. Austria-Hungary, France, Germany, Italy, and Russia sent their Ambassadors; Belgium, Denmark, Greece, Sweden, Norway, and Portugal their Ministers; the Chinese Minister was represented by Dr. Wu Lien-Teh; and Servia by its Chargé d'Affaires. The Government was represented through the Medical Departments of the Local Government Board and the Board of Education, the Army and Navy Medical Services, and the West African Medical Staff. Representatives of scientific bodies, foreign as well as British, were present; the Swedish Academy of Science, the Norwegian Society of Science, the Madrid Academy of Medicine, the Accademia dei Lincei of Rome, the Imperial Academy of Sciences of St. Petersburg, the British Academy, the Royal Institution, the British Science Guild, the Royal Institute of Public Health, the Hunterian, Royal Microscopical, and Zoological Societies, and Kew Gardens, in addition to those enumerated below which sent special delegates to the procession. The Royal Colleges of Surgeons and of Physicians of the three kingdoms and the Society of Apothecaries were represented, as was every University in Great Britain and Ireland, the medical societies, the Edinburgh and Glasgow University Clubs, the Merchant Taylors' Company, Epsom College, University College of South Wales, the constituent colleges of the University of London, the Norfolk and Norwich Hospital, and the general and special hospitals and medical schools of London, Oxford, Edinburgh, and Glasgow.

The scene in the Abbey during the interval of waiting was truly impressive. A spirit of reverence dwells within those lofty grey walls, and in very truth it hovered over the entire congregation there gathered together. The silence was profound. Notwithstanding a continuous stream of newcomers hardly a sound could be heard, and the demeanour of all was grave. Presently Purcell's exquisite music, composed for the funeral of Queen Mary in 1694, broke in upon the silence from the organ. This was followed by Chopin's "Marche Funèbre," and finally trombones, stationed high up in the triforium, played the Tres Æquali of Beethoven. Then came, faintly at first, the voices of the choir singing the hymn "Brief life is here our portion," as the coffin was borne from the Chapel of St. Faith, where it had rested during the previous night, to a high bier at the foot of the altar rails, surrounded by six burning candles. In the front of the procession came the clergy, with the Dean of Westminster, Bishop Ryle, at their head. A magnificent wreath of orchids and lilies, sent by the German Emperor, and deposited on the coffin by the German Ambassador while it lay in St. Faith's Chapel, was carried in front of the coffin. Splendid wreaths were also displayed at the altar rails from the Institut Pasteur of Paris, the Congress of German Surgeons, and the Medical Society of Amsterdam. The coffin was covered with a purple pall, and on it were laid Lord Lister's three most distinguished orders—the Order of Merit, the Prussian Order Pour le Mérite, and the Grand Cross of the Order of the Danebrog. The pall-bearers, in their various official robes, escorted the body. They were Lord Rayleigh, O.M., representing the Order of Merit; Lord Rosebery, for the University of London; Lord Iveagh, for the Lister Institute; Sir Archibald Geikie, President of the Royal Society; Sir Donald MacAlister, Principal of Glasgow University; Sir Watson Cheyne, Bart., for King's College, London; Mr. Rickman J. Godlee, President of the Royal College of Surgeons of England; and Professor F. M. Caird, for Edinburgh University. Immediately following were the principal mourners, consisting of Mrs. Lister, Mr. and Mrs. J. J. Lister, Dr. A. H. Lister, Mr. and Mrs. W. T. Lister, Miss Lister, Miss E. M. Lister, Miss G. Lister, Dr. and Mrs. A. G. Phear, Mrs. R. J. Godlee, Mr. and Mrs. J. Lister Godlee, Mr. and Mrs. A. Godlee, Mr. F. Godlee, General Burn, Mr. T. Godlee, Miss Godlee, Mr. J. Harold Pim, Mrs. Goodbody, Miss Pim, Miss C. Pim, Mr. A. Lister Harrison, the Right Hon. J. W. Wilson, Mr. and Mrs. Albright, Mr. and Mrs. C. T. Barclay, and Mr. Ernest Beck. The Lord Mayor of London (Sir Thomas Crosby, M.D.) and the Lord Provost of Edinburgh came next, and were followed by the official delegates from various scientific and learned societies. The French Academy of Science sent its President (Professor Lippmann), and also Professor Chauveau and Professor Dastre; the Institut Pasteur of Paris sent Professor Roux; the French Academy of Medicine, Professor Pozzi; the German Congress of Surgeons its President (Professor Garré); the Société de Chirurgie de Paris, Sir Victor Horsley; and the Medical Society of Amsterdam, Professor Treub. The Royal Society of London sent its treasurer, Sir Alfred Kempe; its secretaries, Sir Joseph Larmor, M.P., and Sir John Rose Bradford; and its foreign secretary, Sir William Crookes, O.M.; while the Royal Society of Edinburgh sent Sir James Dewar. The Royal College of Physicians of London sent its President, Sir Thomas Barlow, Bart.; its Senior Censor, Dr. J. Mitchell Bruce; its Registrar, Dr. J. A. Ormerod; and Sir Richard Douglas Powell, Bart. The Royal College of Surgeons of England sent its Vice-Presidents, Mr. C. W. Mansell Moullin and Mr. C. T. Dent; that of Edinburgh, its President, Mr. G. T. Berry; and that of Ireland, its President, Mr. R. H. Woods. The delegates from the University of London were Sir Edward Busk (chairman of Convocation), Sir H. Miers (Principal), and Sir Philip Magnus, M.P.; from the University of Edinburgh, Professor Alexis Thomson; and from the University of Glasgow, the Lord Rector, Mr. Birrell. Other delegates were Sir Henry Morris, President of the Royal Society of Medicine; Mr. Edmund Owen, for the British Medical Association; Sir William Ramsay, President of the British Association; the Bishop of Exeter, Principal the Rev. A. C. Headlam, D.D., and Professor J. M. Thomson, F.R.S., for King's College, London; Sir David Ferrier and Dr. Nestor Tirard for King's College Hospital. University College sent its Provost, Dr. Gregory Foster; and University College Hospital Medical School its Dean, Mr. Raymond Johnson.

The service was brief but impressive. After the Ninetieth Psalm, *Domine, Refugium Nostrum*, had been chanted by the choir to Purcell's music, and the lesson from I. Corinthians, xv., had been read by the Dean, the choir sang Handel's "When the ear heard Him," the concluding sentence of which—"His body is buried in peace, but his name liveth

evermore"—was splendidly appropriate. Goss's anthem, "I heard a voice," followed, and after the prayers had been recited by the Precentor, and the hymn, "O God, our help in ages past," had been sung by the congregation, the procession was reformed and the body borne on the way to its final resting place to the solemn roll of the Dead March in "Saul."

To the onlooker, perhaps, the most significant characteristic of the assembled congregation was the spirit of reverence that seemed to permeate all present. In a mixed assemblage of all religious creeds, containing many, perhaps, owning no creed, official attendance on an important function is commonly satisfied with the preservation of due decorum. In the present instance, however, there was more than that visible in the demeanour of everyone. To those of the Church of England the ever beautiful service spoke its accustomed words of hope, but in a voice of unusual sweetness. Those of other faiths, doubtless, translated its significance into terms of their own. But all at least were alike impressed with that view of immortality which sees the survival of personality in the enduring work of one who devotes his life to furthering the welfare of the human race; and this was particularly evident in the case of him who established the relief of human suffering on an everlasting basis.

OFFICIAL MANUAL OF CAUSES OF DEATH.

IN his Supplement to the Fortieth Annual Report of the Local Government Board, already noticed in these columns,[1] Dr. A. Newsholme foreshadows the removal of some of the defects in our national vital statistics that detract from their usefulness for purposes of sanitary administration.

Sanitary and Registration Districts.

Owing to lack of correspondence between the areas dealt with by the Local Government Board and the National Register Office respectively, comparison among the vital statistics of these areas has hitherto been impracticable. These defects will shortly disappear, for the Registrar-General has undertaken to substitute sanitary districts for registration or Poor-law districts as the areas for which returns of birth and death will be published from the year 1911 onwards.

Moreover, as the coöperation of the Central Statistical Office may presumably be relied on for the calculation of local rates of mortality, we doubt not that in such event the county as well as the district medical officers everywhere will be glad to be relieved of that irksome part of their duty, so that more time may be available for the discharge of their definitely preventive functions.

The medical officer of the Local Government Board further states that the Registrar-General has undertaken to issue to every medical officer of health a "Manual of Causes of Death" which will contain the new standard tables, and will define the contents proper to the various items in the list, showing how each form of death certificate should be classified.

Nature and Object of Manual.

In fulfilment of this undertaking the present manual has been issued by authority of the Registrar-General. The work has been compiled by Dr. T. H. C. Stevenson, the superintendent of statistics, Mr. Bernard Mallet's contribution thereto being limited to a brief minute officially submitting the document to his parliamentary chief. A work on similar lines but more comprehensive in scope has recently been published by Dr. Cressy Wilbur, chief statistician to the United States Census Bureau. It is upon this work, a copy of which lies before us, that the English manual is avowedly based, although in preparing the latter many exclusively American expressions have been omitted, whilst numerous terms have been added which are in common use here but not in the United States.

In projecting the present work it has been the compiler's endeavour to secure the nearest approach to uniformity of tabulation of facts throughout the United Kingdom. For reasons given in the introduction the form of the Scottish and Irish list of causes will not be identical with that of the English list, though the differences will be slight. But in England and Wales complete uniformity will be obtained by the adoption of the standard list at Somerset House and Whitehall respectively, and the use of the same list will doubtless be required in the reports of all medical officers of health. This standard list is already published, and will be circulated with the manual itself among medical officers of health generally. Included in the manual will be found revised suggestions to medical practitioners in filling up their death certificates. We presume that a copy of these suggestions will be sent to every medical practitioner on the Register, and it would certainly be desirable that this should be accompanied by a copy of the manual itself.

Classification of Causes of Death.

In Dr. Stevenson's judgment the only classification of diseases that is essential in a standard list is that it should secure the correct assignment of a given cause to one or other of the included titles. The order of titles in the list he regards as of less importance, inasmuch as that order admits of alteration according to individual requirements, whereas the user has no means of modifying the grouping of death causes under titles.

Readers of the earlier reports of the Registrar-General will be aware that the order of causes originally adopted by Dr. Farr about the middle of last century was based on anatomical rather than on etiological considerations. On this point, however, it seems reasonable to conjecture that Farr's preference may have been determined by the primitive and unsettled state of etiological knowledge at the time. In any event, the author of the present manual has decided to revert to Farr's practice, and he does so on the ground of the greater convenience to statistical students that he believes to attach to a regional as compared with a causal arrangement. Whether this decision is the wisest in the circumstances experience alone can determine. Meanwhile it is due to Dr. Stevenson to note his acknowledgment that "the grouping of causes of death is a subject in regard to which there is room for differences of opinion; and, further, that the individual points which require consideration in preparing such a manual as this are so numerous and in some cases so complicated that it will not be surprising if critical use of the work reveals a number of defects in regard to detail, whether the general principles followed prove acceptable or no."

Criticism of New Departure.

In justification of the action of the Registrar-General's predecessor, who in the year 1901 revised the official list of death causes, it may be pointed out that in so doing he simply followed the example of the Royal College of Physicians of London in the decennial revision of the nomenclature then in course of preparation. On account of the admittedly infective nature of certain diseases, such as pneumonia, cerebro-spinal fever, epidemic diarrhœa, &c., the College deliberately transferred them to the class of "general diseases" from their original places among purely local affections. If the College in its approaching fourth decennial revision, pursues the same course respecting several of the so-called "local" diseases, we shall be in nowise surprised.

Among adverse criticisms of the new departure may be noted one by Sir John W. Moore, of Dublin, the eminent sanitarian and ex-President of the Irish College of Physicians who in a letter to us[2] severely condemns the changes initiated recently in the Registrar-General's mortality returns. The gravamen of his charge is that the transference to merely local affections of such unquestioned acute infections as cerebro-spinal fever, pneumonia, epidemic diarrhœa, and puerperal fever from their rightful position under the heading epidemic diseases places a formidable block in the path of sanitary reformers and medical officers of health. The hands of the State-medicine clock are being put back a quarter of a century at least—to pre-notification days. Writing as a resident in Ireland, Sir John Moore regards with concern a modification in the list of causes of death which will probably delay the inclusion under the Notification Act of such death-dealing yet preventable maladies as pneumonic fever and epidemic diarrhœa.

Continuity with Past National Records.

Dr. Stevenson assures us that the difficulty of arranging for the continuity of official records has been almost entirely overcome by subdividing some of the titles in the new

[1] THE LANCET, Nov. 25th, 1911, p. 1501.

[2] THE LANCET, Jan. 21st, 1911, p. 189.

extended table, which will be published in subsequent annual reports of the Registrar-General, together with the necessary subdivisions of titles in tables of the mortality of the whole country.

Primary and Secondary Causes of Death.

Among other good points in the manual may be noticed an attempt to explain the meaning of the terms "primary," and "secondary" as applied to causes of death in the medical certificates, the official form for which has been revised for use from the year 1911 onwards. The definitions of these terms were adopted after consultation with the Royal College of Physicians of London. They have been designed to secure, as far as possible, that the certifying practitioner, the only person fully qualified to do so, shall select as primary that cause of death which was of greatest importance, and upon which any other related causes mentioned were dependent. In the suggestions to medical practitioners already referred to we read that by "primary cause of death" is meant (in the case of death from disease) the disease present at the time of death which initiated the train of events leading thereto, and not a mere secondary, contributory, or immediate cause, or a terminal condition or mode of death.

A terminal condition or mode of death should not be entered as a secondary (or contributory) cause. In a very large proportion of instances the statement of the primary cause gives all the information required; in these cases nothing is gained by adding as a secondary cause such a condition as "syncope," "heart failure," "coma," "exhaustion." Thus a certificate of "pulmonary tuberculosis" is not improved by the addition of "exhaustion" as a secondary cause; though if a complication such as "pneumothorax" had supervened this should be noted as a contributory cause of death.

We have been led to notice this part of the manual thus fully because it is by no means certain that the Treasury will sanction the circulation of the work to medical practitioners generally, although they are called upon to supply gratuitously the indispensable information respecting the cause of death which they alone possess. Quite significant in this regard is the fact that the price of the manual (1*s.*) is printed on the cover.

REPORTS ON PLAGUE INVESTIGATIONS IN INDIA

ISSUED BY THE ADVISORY COMMITTEE APPOINTED BY THE SECRETARY OF STATE FOR INDIA, THE ROYAL SOCIETY, AND THE LISTER INSTITUTE OF PREVENTIVE MEDICINE [1]

Epitome of Some Recent Observations on Rat Fleas.

THE chief points noted in this summary of recent work on rat fleas elsewhere than in India are: 1. English field rats harbour C. fasciatus and Ct. agyrtes in about equal numbers. 2. The tropical rat flea (X. cheopis) has been found on rats at Guy's Hospital in London in abundance. 3. The work of Chick and Martin shows that C. fasciatus feeds on man about as readily as on the rat or rabbit; the common mouse flea (Ct. musculi) and Ct. agyrtes, on the other hand, bite man hardly or not at all. 4. Observations in Marseilles by Gauthier and Raybaud, in Sydney by Tidswell, and in Japan by Kitasato show that at each place there is a seasonal variation in the prevalence of rat fleas, especially of X. cheopis, and that the maximum abundance of fleas is found at the time of year when plague epidemics in man mostly prevail in the given locality.

Preliminary Observations on an Anti-plague Serum.

Preliminary observations on the protective and curative value for rats of the serum of a horse immunised with a toxic nucleo-proteid extracted from the plague bacillus have been made by Dr. Sydney Rowland. The serum prepared possessed, when tested on rats, considerable antitoxic value, 1 c.c. neutralising about 100 fatal doses of the toxic nucleo-proteid with which the horse had been inoculated. It also had a good prophylactic value against infection with living plague bacilli, 1 c.c. protecting every animal, and 1/10 c.c. 7 out of 10 rats, against a dose of plague bacilli inoculated 24 hours later which killed 80 per cent. of untreated rats. The serum was also efficacious in a curative way when administered subsequent to infection, and it is shown to save the lives of a sensible proportion of infected rats even when given as long as 24 hours after infection. This is the more remarkable since the control rats, inoculated but untreated with serum, begin to die on the second day.

Second Report on Investigations into Plague Vaccines.

Dr. Rowland continues his studies of the toxic nucleo-proteid which he has extracted from the plague bacillus and which, as he has previously shown, acts as a highly efficient vaccine in rats in doses so small as 1/1000th milligramme. This nucleo-proteid forms loose compounds with chloroform and toluol, which are relatively non-toxic and are easily reversible; these compounds have greatly diminished immunising power. The effect of heat on the toxic and immunising powers of the nucleo-proteid is much less if the whole bacillus is heated before extraction than when the extracted nucleo-proteid is heated in solution in dilute saline. Extracts of the plague bacillus contain an active proteolytic enzyme. If this be allowed to act on the nucleo-proteid the immunising power at first increases and then remains steady for some months; the toxic value, on the other hand, diminishes progressively, so that after some time the hydrolysed extract is relatively non-toxic, but still forms a very efficient vaccine both against toxic nucleo-proteid and against infection with live bacilli. Hence the protective and toxic properties of such an extract of plague bacilli are distinct.

Statistical Investigation of Plague in the Punjab. Second and Third Reports.

Dr. M. Greenwood continues his statistical analysis of the data collected by the late Major George Lamb, I.M.S., on the occurrence of plague in the villages of the Punjab and United Provinces. Investigating the influence of proximity to railways, he finds that in districts containing large cities, villages near a line of railway are liable to a higher rate of plague epidemics than villages, similar in size and other respects, not so situated. This is probably due to increased opportunities for personal transit rather than to the movement of merchandise, since in purely or mainly agricultural districts proximity to railways does not entail any increased liability to plague infection. It is also shown that large villages tend to be infected earlier in the plague season than small villages; that the mortality from plague tends to be greater the earlier a village is infected; and that in nearly all cases large villages, when infected, suffer less heavily than smaller communities. There is some evidence that the same difference between large and small places obtained in England in the fourteenth to seventeenth centuries. Analysis of the possible explanations leads to the conclusion that the difference in mortality depends upon some material factor which varies with the size of the community rather than on the random incidence of plague infection on a population living in aggregates of varying size.

Observations on Plague in Eastern Bengal and Assam.

The province of Eastern Bengal and Assam has suffered very little from bubonic plague, although it is in close proximity to heavily infected districts in Bengal (Calcutta, Saran). Imported cases from these districts have from time to time given rise to small outbreaks of pneumonic plague, but no bubonic epidemic has arisen. The Commission has made an inquiry lasting over a year into the conditions which might determine this immunity. In Dacca an investigation was undertaken for the whole 12 months into the prevalence of rats and fleas, and other places were visited for short periods. It appears that the freedom of the province from plague can be attributed chiefly to the scarcity of rats in the houses. Per 100 traps set, from 1 to 9 Mus rattus were caught in different places, as compared with 20 to 50 in Poona, Belgaum, Punjab villages, and other heavily infected localities. This comparative scarcity of rats seems to be due partly to the habits of the people, who are comparatively clean, neat, and tidy in their household arrangements, and partly to the structure and disposition of the houses, which are either too well built or too flimsy to afford much shelter for rats. In many places, also, the houses are widely separated from one another. The Commission visited also the neighbouring town of Bhagalpur in

[1] Journal of Hygiene, vol. xi., 1911. Supplement, pp. 1-206. Accounts of previous reports will be found in THE LANCET of Nov. 3rd, 1906, p. 1233; July 27th, 1907, p. 246; Jan. 25th, 1908, p. 253; and Dec. 3rd, 1910, p. 1640.

Bengal, which has suffered rather severely from epidemic plague on several occasions; here were found the more usual ill-built, crowded, and dirty houses with mud walls, and 34 rats were caught for every 100 traps set. Rat fleas were found to be about as common as elsewhere in India, varying from 2 to 8 per rat in different places. In Dacca weekly observations showed that there was a distinct seasonal variation in the prevalence of fleas, the maximum falling in April—i.e., in the plague season as judged by the seasonal prevalence of plague in Calcutta (160 miles distant).

Observations on the Breeding of Mus Rattus in Captivity.

To breed wild rats successfully in captivity it was found necessary to have a separate hut for each pair. If several pairs were confined in the same hut, provided with artificial burrows, &c., not only were young never produced but on being killed the females were never found pregnant. Under appropriate conditions, however, an active pair will produce from 29 to 44 young per annum; the commonest number in a litter is 6, with an average interval of 56 days. The young will breed when 5 months old, probably earlier, and in the absence of any mortality it may be calculated that a single pair will increase to 198 in 12 months and 858 in 16 months. Interesting data are given with regard to the rate of growth of young rats in length and weight; up to about 100 grammes weight (14 weeks) they grow about 1 gramme per day, weighing 4 grammes at birth.

Major George Lamb, M.D. Glasg., I.M.S.

An obituary notice is given of this distinguished officer of the Indian Medical Service, who had been associated with the work of the committee since its commencement in 1905, for the most part as officer in senior charge of investigations in India.

MEDICINE AND THE LAW.

Action arising out of the Sale of a Medical Practice.

AT the recent Devon assizes Mr. Justice Darling with a special jury tried an action brought by the executors of the late Mr. J. Gordon against Mr. J. W. Winterburn for £200 alleged to be due under an agreement for the purchase of the medical practice of the former, or in the alternative for damages for breach of an agreement to purchase. The defendant alleged that he was induced to enter into the agreement by misrepresentation and counterclaimed that it should be rescinded. The case was opened by counsel for the defendant in support of the counterclaim to the effect that the defendant desiring to purchase a medical practice was attracted by an advertisement in THE LANCET, which described as for sale an "unopposed country practice; appointments about £90; scope for increase; residence available with land; low rates; inclusive rental £26" The defendant accordingly inspected the place and had interviews with the plaintiffs, when he was informed that another medical practitioner residing in the neighbourhood had retired and was occupying himself with farming, being also told that this gentleman had looked after the patients of the deceased at a time when he had been incapacitated by an accident. The defendant did not inspect the books of the deceased as he was told they were badly kept, but was given particulars of two appointments as medical officer to guardians, two clubs, and vaccination fees, which were estimated to be of a total value of £80 or £90 a year. The whole of the earnings of the late occupant of the practice were put down as about £230 per annum, no mention being made of opposition. The defendant after further negotiations agreed to pay £300 for the practice, and did pay down £100. Later, when he had entered upon practice the guardians declined his application for the appointments, which amounted to only £37 15*s*, and advertised them; he found the total of the private practice of the deceased to have been considerably less than alleged, and that Dr. G. R. Ayshford, the medical man already mentioned, was in fact practising. He eventually was informed by Dr. Ayshford that the deceased had given way to the drug habit and had lost practice thereby, and eventually agreed to go into partnership with Dr. Ayshford, upon terms which enabled him to secure one of the Poor-law appointments originally spoken of. In his evidence the defendant laid stress upon the statements that the practice was unopposed, and upon the amount alleged for the appointments available as being the misrepresentations of which he particularly complained. Evidence as to the value of these and as to the practice of the deceased was given. For the plaintiffs, evidence was given to the effect that the advertisement in THE LANCET quoted above was an old one used for the sale of the practice when the deceased bought it, which had been repeated through an error, and that the defendant had been fully informed of its inaccuracies by the executors. It was also stated that he had been told that Dr. Ayshford attended patients, reference being made to his doing this in some cases as locum tenens for Mr. Gordon, with the suggestion that he might not retain these. At the close of the case Mr. Justice Darling left the following questions to the jury, who gave the answers appended: 1. Did the plaintiffs make Mr. Winterburn the misrepresentations alleged?—Yes. 2. If so, was Mr. Winterburn thereby induced to agree to buy the practice of the late Mr. Gordon and to pay £100 as part of the price?—Yes. 3. Has Mr. Winterburn had and kept any part of what he agreed to buy?—Yes. (This refers to the defendant having remained in the district after entering into partnership with Dr. Ayshford.) 4. If so, what is the value of what he has had and kept?—£120, including £100 paid as deposit. Judgment was not given, the consideration of the precise effect of the jury's findings being reserved for argument at a later date in London.

Summoning a Medical Man in an Emergency.

An inquest was held recently in the Westminster coroner's court upon the body of a lady engaged in journalism and residing by herself in chambers in Davies-street, Berkeley-square. There was no doubt upon the medical and other evidence that the deceased had shot herself with a revolver, which she kept to the knowledge of her friends for the purpose of self-defence, and the verdict of the jury was probably a correct one—that she had met with accidental death while handling the weapon in question. Frequent protest has been made in THE LANCET against the carrying of revolvers in public, but the keeping of a firearm by a lady living alone, with a view to a possible emergency, such as the visit of a burglar, is, of course, a different matter. A revolver, in such circumstances, may some day prove a valuable protection, but its value will depend upon expert handling, and its owner should render herself familiar with its use, never forgetting the danger of manipulating it carelessly. In the instance under comment two of the witnesses who knew that the deceased owned such a weapon were not able to say that she had ever fired it, and one of them was of the opinion that she knew very little about its use, although she kept it loaded by her bedside. A feature of this case, however, of more interest to the public and to medical practitioners than the use or abuse of pistols, consists in the fact that in the middle of the West-End of London one of the witnesses, a lady friend of the deceased, who found her lying wounded and hastened to summon a medical man, was apparently engaged for about an hour in scouring the neighbourhood in a taxicab in order to find one. The conditions were peculiar as to time and locality, for the shooting took place about 5 P.M. on a Sunday, and, as we have said, in Davies-street, Berkeley-square. It will readily be realised that in almost all the nearest streets the number of brass plates on the front doors would appear to suggest an abundant supply of surgical aid for any person seeking for it, but in fact the number of gentlemen at hand and ready to respond to such a call proved to be extremely small. According to the evidence, the witness tried Brook-street, Bruton-street, Jermyn-street, and Harley-street before securing the assistance of Mr. Walter Wise from George-street, Portman-square, who about 6.30 P.M. found the deceased moribund, and afterwards gave evidence at the inquest. The difficulty might not have occurred if the deceased had had occasion to consult a general practitioner in her neighbourhood, but it must be remembered that a young lady in good health may not even know the name of any medical man resident within a mile of her dwelling, and that on a Sunday afternoon, with the shops closed and the streets empty, it would be doubly difficult to obtain the desired information. At the shop of a pharmaceutical chemist, where, on Sundays as well as on week days, prescriptions are made up for applicants, the address might have been obtained of a surgeon known to be at home, but it is fortunate that urgent

occasions corresponding exactly with that described do not very often arise.

The Sale of Indecent Publications: Another Prosecution.

At Bow-street recently, before Mr. Curtis Bennett, the Phœnix Press, Limited, were summoned for sending through the post a packet containing prints of an improper character, the subject matter of the prosecution being three copies of the periodical *Photo Bits*, dated Dec. 23rd and 30th, 1911, and Jan. 13th, 1912. Mr. Curtis Bennett, in imposing a fine of £10, with 20 guineas costs, observed that papers of this class were circulated amongst the young to the detriment of their morals, and that it was time that such a thing should be stopped. To his mind, from the first sheet to the last, these papers were produced for one purpose only—the suggestion of evil. The illustrations, one and all, were of a most suggestive and loathsome character, and to suggest that the directors of the company were not responsible was not fair to the manager, who was there to do what he was paid for.

We may add that in opening the case against the defendants Mr. Muskett had made particular allusion to the objectionable character of the advertisements inserted, and had referred to the fact that the Home Secretary on Jan. 23rd promised that a Bill would soon be introduced dealing with the whole subject, and had complained of the difficulty which, under the existing law, attends any attempt to punish promptly and effectively those responsible for publications of the class complained of. It will be noticed that the proceedings in question were brought under the Post Office Act in consequence of this difficulty. Those who hope to see the Home Secretary's promise fulfilled may be warned not to be too sanguine. In THE LANCET of Oct. 31st, 1908, comment was made upon the report of the Joint Select Committee which had then recently considered the whole question of indecent publications and of advertisements which recommend, under a veil of words too thin to deceive anyone, drugs intended to be bought by pregnant women for use as abortifacients. No Bill upon the subject has yet been introduced by Government, although it could hardly be one likely to excite violent opposition or of very great length or complexity.

The subject was referred to again more recently in THE LANCET of July 31st, 1909, when prosecutions instituted in respect of a paper named *Photo Fun* had resulted in convictions and the imposition of fines. *Photo Bits* was mentioned on this occasion during the prosecution of a newsvendor as the subject of a search warrant, so that its proprietors must have been aware, apart from their knowledge of its contents, that it was attracting the attention of the authorities. Their trade, however, is not likely to be seriously interfered with until objectionable matter in the body of a periodical and in its advertisements is fully defined in an Act of Parliament, and until power is given to inflict imprisonment upon summary conviction in aggravated cases upon those responsible for either publication or sale. Fines are of little avail, and when incurred by newsvendors are readily paid by those who make a profit by publishing this kind of garbage.

VITAL STATISTICS.

HEALTH OF ENGLISH TOWNS.

IN the 94 largest English towns having an estimated population of 17,559,219 persons in the middle of this year, 9096 births and 6270 deaths were registered during the week ending Feb. 17th. The annual rate of mortality in these towns, which had steadily increased from 14·8 to 21·6 per 1000 in the four preceding weeks, declined to 18·6 in the week under notice. During the first seven weeks of the current quarter the mean annual death-rate in these large towns averaged 17·3 per 1000, while in London during the same period the annual death-rate did not exceed 16·6 per 1000. The annual death-rates last week in the several towns ranged from 6·2 in Southend-on-Sea, 8·5 in Hornsey, 9·2 in Wimbledon, 9·9 in Enfield, and 10·0 in Ilford, to 27·5 in Preston, 28·5 in Bath, 29·6 in West Bromwich, 35·1 in Great Yarmouth, and 37·5 in Dudley.

The 6270 deaths from all causes in the 94 towns were 1006 fewer than the number recorded in the previous week, and included 365, which were referred to the principal epidemic diseases, against numbers rising from 297 to 435 in the four preceding weeks. These 365 deaths from the principal epidemic diseases included 148 from whooping-cough, 69 from measles, 58 from infantile diarrhœa, 43 from diphtheria, 28 from scarlet fever, and 19 from enteric fever, but not one from small-pox. The mean annual death-rate from these diseases last week was equal to 1·1 per 1000, against 1·2 and 1·3 per 1000 in the two previous weeks. The deaths attributed to whooping-cough, which had steadily increased from 81 to 186 in the four preceding weeks, fell to 148 last week, and caused the highest annual death-rates of 1·8 in Bury, 1·9 in Devonport, 2·2 in Preston, 2·4 in Barrow-in-Furness, 3·2 in Merthyr Tydfil, and 3·9 in Walsall. The deaths referred to measles, which had been 72, 63, and 98 in the three preceding weeks, declined to 69 last week; the highest annual death-rates from this cause were 1·2 in Reading, 1·3 in York, 2·1 in Warrington, and 2·4 in Nottingham. The fatal cases of infantile diarrhœa, which had been 47, 67, and 49 in the three previous weeks, slightly rose to 58 last week, and included 19 in London and its suburban districts, 7 in Manchester, and 6 in Liverpool. The deaths attributed to diphtheria, which had been 53, 71, and 64 in the three preceding weeks, fell to 43 last week, and of this number 13 were registered in London and its suburban districts, and 3 in Portsmouth. The deaths referred to scarlet fever numbered 28, and were 6 in excess of the average in the six preceding weeks; 3 deaths were recorded in Liverpool, and 2 each in London, Stoke-on-Trent, Birmingham, Warrington, Leeds, and Aberdare. The fatal cases of enteric fever, which had been 13 and 16 in the two preceding weeks, further rose to 19 last week, and included 3 in London and 2 each in Stoke-on-Trent, Birmingham, Leeds, Sheffield, and Hull.

The number of scarlet fever patients under treatment in the Metropolitan Asylums and in the London Fever Hospital, which had been 1562, 1500, and 1512 in the three preceding weeks, had further declined to 1461 on Saturday last; 154 new cases of this disease were admitted to these institutions during the week, against 158, 169, and 178 in the three preceding weeks. These hospitals also contained on Saturday last 1148 cases of diphtheria, 390 of whooping-cough, 180 of measles, 55 of enteric fever, and 2 of small-pox. The 1564 deaths from all causes registered in London were 198 fewer than the number in the previous week, and were equal to an annual death-rate of 18·0 per 1000. The deaths referred to diseases of the respiratory system, which had steadily increased from 290 to 545 in the five preceding weeks, declined to 440 in the week under notice, but were 19 in excess of the number recorded in the corresponding week of last year.

Of the 6270 deaths in the 94 large towns, 195 resulted from different forms of violence, and 474 were the subject of coroners' inquests. The causes of 54, or 0·9 per cent., of the deaths registered last week were not certified either by a registered medical practitioner or by a coroner after inquest. All the causes of death were duly certified in Manchester, Sheffield, Leeds, Bristol, West Ham, Bradford, Newcastle-on-Tyne, Nottingham, and in 57 other smaller towns. The 54 uncertified causes of death last week included 7 in Liverpool, 6 in Birmingham, 3 in West Bromwich, 3 in South Shields, and 3 in Gateshead.

HEALTH OF SCOTCH TOWNS.

In the 18 largest Scotch towns, having an estimated population of 2,182,400 persons in the middle of this year, 1108 births and 923 deaths were registered during the week ending Feb. 17th. The annual rate of mortality in these towns, which had increased from 17·3 to 22·8 per 1000 in the four preceding weeks, declined to 22·1 per 1000 in the week under notice. During the first seven weeks of the current quarter the mean annual rate of mortality in these towns averaged 19·2 per 1000, and was 1·9 per 1000 in excess of the mean rate recorded during the same period in the 94 large English towns. The annual death-rates in the several Scotch towns last week ranged from 12·2 in Leith, 12·9 in Clydebank, and 13·7 in Partick, to 25·7 in Glasgow, 26·8 in Greenock, and 33·2 in Perth.

The 923 deaths from all causes were 30 fewer than the number in the preceding week, and included 103 which were referred to the principal epidemic diseases, against 100 in each of the two preceding weeks. Of these 103 deaths, 63

resulted from measles, 14 from whooping-cough, 14 from infantile diarrhœal diseases, 6 from diphtheria, 4 from enteric fever, and 2 from scarlet fever, but not one from small-pox. These 103 deaths from the principal epidemic diseases were equal to an annual death-rate of 2·5 per 1000, or 1·4 per 1000 above that recorded in the 94 large English towns. The deaths attributed to measles, which had increased from 39 to 62 in the three preceding weeks, were 63 last week, and included 42 in Glasgow, 9 in Greenock, and 4 in Edinburgh. The deaths referred to whooping-cough, which had been 14 in each of the two preceding weeks, were again 14 last week; and of this number 3 deaths occurred in Glasgow, 3 in Greenock, 2 in Aberdeen, and 2 in Ayr. The fatal cases of infantile diarrhœa, which had been 11, 13, and 6 in the three preceding weeks, rose to 14 last week; 4 deaths were registered in Glasgow and 4 in Edinburgh. The deaths attributed to diphtheria, which had been 12 and 13 in the two previous weeks, declined to 6 last week, of which 3 were recorded in Glasgow. The 4 deaths referred to enteric fever were 2 in excess of the number in the previous week, and included 2 deaths in Glasgow. The 2 fatal cases of scarlet fever were registered in Glasgow and Kirkcaldy respectively.

The deaths referred to diseases of the respiratory system, which had steadily increased from 120 to 220 in the four preceding weeks, slightly declined to 209 in the week under notice; and 30 deaths were attributed to different forms of violence.

HEALTH OF IRISH TOWNS.

In the 22 town districts of Ireland, having an estimated population of 1,157,014 persons in the middle of this year, 679 births and 590 deaths were registered during the week ending Feb. 17th. The annual rate of mortality in these towns, which had steadily increased from 18·0 to 31·0 per 1000 in the seven preceding weeks, declined to 26·6 per 1000 in the week under notice. During the first seven weeks of the current quarter the mean annual death-rate in these Irish towns averaged 23·6 per 1000; in the 94 large English towns the mean annual death-rate during the same period did not exceed 17·3 per 1000, while in the 18 Scotch towns it was equal to 19·2 per 1000. The annual death-rates in the several Irish towns last week were equal to 23·9 in Dublin (against 18·0 in London), 33·1 in Belfast, 26·5 in Cork, 16·6 in Londonderry, 21·7 in Limerick, and 30·4 in Waterford; while in the 16 smallest of these Irish towns the death-rate last week was equal to 21·3 per 1000.

The 590 deaths from all causes in the 22 Irish towns were 98 fewer than the number in the previous week, and included 42 which were referred to the principal epidemic diseases, against 31 and 49 in the two preceding weeks; of these 42 deaths, 21 resulted from whooping-cough, 8 from measles, 8 from infantile diarrhœal diseases, 2 from enteric fever, 2 from scarlet fever, and 1 from diphtheria, but not one from small-pox. These 42 deaths from the principal epidemic diseases were equal to an annual death-rate of 1·9 per 1000; the death-rate last week from these diseases did not exceed 1·1 per 1000 in the 94 large English towns, while in the 18 Scotch towns it was equal to 2·5. The deaths attributed to whooping-cough, which had been 15, 15, and 25 in the three preceding weeks, declined to 21 last week, of which 17 were recorded in Belfast and 2 in Cork. The deaths referred to measles, which had been 2 and 5 in the two preceding weeks, rose to 8 last week, and included 4 in Cork and 3 in Dublin. The 8 fatal cases of infantile diarrhœa were equal to the number in the previous week; 4 deaths were registered in Dublin and 2 in Waterford. The 2 fatal cases of enteric fever were recorded in Belfast; those of scarlet fever in Limerick and Galway respectively; and that from diphtheria in Dublin.

The deaths referred to diseases of the respiratory system, which had steadily increased from 83 to 239 in the eight preceding weeks, declined to 212 in the week under notice. Of the 590 deaths from all causes in the 22 Irish towns last week, 181, or 31 per cent., occurred in public institutions, and 14 resulted from different forms of violence. The causes of 20, or 3·4 per cent., of the total deaths were not certified either by a registered medical practitioner or by a coroner after inquest; in the 94 large English towns the proportion of uncertified causes of death last week did not exceed 0·9 per cent.

THE SERVICES.

ROYAL NAVY MEDICAL SERVICE.

IN accordance with the provisions of Order in Council of April 1st, 1881, Fleet-Surgeon Alfred Harold Lissant Cox has been placed on the Retired List, at his own request (dated Feb. 6th, 1912).

The following appointments have been notified:—Fleet-Surgeon J. Shand to the *Shannon*, on recommissioning. Staff-Surgeons: J. C. Bringan to the *Victory*, for disposal; A. R. H. Skey to the *Roxburgh*; A. A. Sanders to the *Vivid*, additional, for disposal, to be lent to the *Gossamer*, and for duty with the *Circe*, *Seagull*, and *Speedwell*.

THE ROYAL NAVAL VOLUNTEER RESERVE.

Donald John Forbes has been appointed Surgeon (dated Feb. 9th, 1912).

ROYAL ARMY MEDICAL CORPS.

Lieutenant-Colonel George F. Gubbin is placed on retired pay (dated Feb. 19th, 1912).

Major Anthony J. Luther to be Lieutenant-Colonel, vice G. F. Gubbin (dated Feb. 19th, 1912).

The undermentioned Majors to be Lieutenant-Colonels:—Robert J. Copeland, vice R. G. Hanley, deceased (dated Jan. 30th, 1912). John Girvin, vice F. P. Nichols, retired (dated Feb. 9th, 1912).

The undermentioned Lieutenants are confirmed in their rank:—Hugh G. Monteith, John S. Levack, Tom C. R. Archer, Basil H. H. Spence, Edward S. Calthrop, Robert Davidson, Herbert S. Blackmore, James M. Elliott, Douglas W. Bruce, Richard T. Vivian, Edward G. H. Cowen, Leonard Buckley, William L. Webster, Stanley P. Sykes, Henry J. G. Wells, Ernest C Deane, Frank S. Tamplin, Ivor R. Hudleston, William Stewart, Alexander G. J. MacIlwaine, and Arthur S. Heale.

Surgeon-General T. M. Corker has been appointed Principal Medical Officer of the Sixth (Poona) Division, vice Surgeon-General J. G. MacNeece, C.B., on transfer to the home establishment. Colonel M. W. Kerin, C.B., principal medical officer of the Seventh (Meerut) Division, has been appointed Principal Medical Officer of the Eighth (Lucknow) Division. Lieutenant-Colonel C. E. Nichol, D.S.O., commanding the station hospital at Maymyo, has on promotion been selected for appointment as Principal Medical Officer of the Presidency and Assam Brigades, vice Colonel E. Butt, transferred as Principal Medical Officer of the Seventh (Meerut) Division. Lieutenant-Colonel N. Manders, on return from Ceylon, has been appointed in charge of the Military Hospital at the Curragh and in command of No. 17 Company of the Royal Army Medical Corps, in succession to Lieutenant-Colonel G. F. Gubbin on retirement from the service. Lieutenant-Colonel R. H. Hall, senior medical officer at Bermuda, has been selected for the increased rate of pay under Article 317 of the Royal Warrant. Lieutenant-Colonel S. Hickson, on return from a tour of service in South Africa, has been selected for appointment to hold charge of the Cambridge Hospital at Aldershot.

Major I. A. O. MacCarthy has been appointed Recruiting Medical Officer in the London District. Major A. W. Bewley, lately commanding the station hospital at Landour, Mussooree Hills, has joined at Meerut Cantonment for duty. Major S. H. Withers has been transferred from Gharral to the Station Hospital at Ambala. Major J. J. W. Prescott, D.S.O., Adjutant of the Northumbrian Division, School of Instruction, Royal Army Medical Corps, at Newcastle, has been appointed to the Southern Command. Major J. P. Silver, from Edinburgh, has been posted to the Dublin District for duty. Major P. McKessack, on return from Mauritius, where he was employed as sanitary officer, has been appointed Sanitary Officer of the South Thames area of the Eastern Command, vice Major C. H. Stratton, whose tenure of the appointment has expired. Major F. A. Symons, from Ceylon, has joined for duty in the Southern Command. Major H. S. Taylor has arrived home for duty from the Straits Settlements. Major L. Wood and Major A. A. Seeds have embarked for a tour of service in India.

Captain J. Tobin, at present in charge of the Military Families Hospital at Devonport, has been placed under orders for service at Gibraltar. Captain E. W. Powell, on return from Aden, has been appointed to the Irish Command for

duty in the Cork District. Captain A. T. Frost, from the Royal Infirmary, Phœnix Park, Dublin, has been selected for attachment to the Royal College of Surgeons, Ireland, Contingent of the Senior Division, Officers Training Corps. Captain W. F. B. Loughnan, specialist in the prevention of disease Bareilly Brigade, has been granted eight months' leave of absence home. Captain R. L. Argles has joined the Station Hospital at Aden. Captain R. J. Buchanan has been transferred from the Military Hospital at Cosham to the Royal Victoria Hospital, Netley. Captain H. G. Sherren has been posted to the Aldershot Command on his return from India. Captain P. Davidson, D.S.O., has taken up duty as Adjutant at the Royal Army Medical Corps Depôt, Aldershot, in succession to Major F. S. Irvine, transferred to the London District and appointed Assistant to the Commandant, Royal Army Medical College, Grosvenor-road, London. Captain H. A. Bransbury has embarked for India.

The following lieutenants have been appointed for duty in the Irish Command:—R. T. Vivian, H. J. G. Wells, and W. L. Webster. Lieutenant W. A. Frost has been appointed to Tregantle from Devonport. Lieutenant R. C. Paris, from the Royal Victoria Hospital, Netley, has embarked for a tour of service in India. Lieutenant W. Bisset, from Hounslow, has been posted to the Royal Herbert Hospital at Woolwich. Lieutenant S. W. Kyle has been transferred from Jhansi to the Station Hospital at Jubbulpore. Lieutenant W. T. Graham, from the Military Hospital, Tidworth Park, Salisbury Plain, has joined at Birmingham. Lieutenant J. A. Manifold has embarked for a tour of service in Bermuda.

INDIAN MEDICAL SERVICE.

The King has approved of the admission of the undermentioned Lieutenants on probation (dated Jan. 27th, 1912):—Ronald Herbert Candy, Philip John Veale, Henry Hingston, Jamasji Cursetji Bharucha, Frederick Jasper Anderson, Heerajee Jehangir Manockjee Cursetjee, John Simson Stuart Martin, Peter Fleming Gow, Robert Victor Morrison, Jogesh Chandra Dey, James Walker Jones, and James Hall Hislop.

The King has approved of the confirmation of the commissions of the following Lieutenants on probation with effect from July 29th, 1911:—John Alexander Sinton, Edward Randolph Armstrong, Denis Fitzgerald Murphy, Charles James Stocker, Eric Edward Doyle, Cyril Macdonald Plumptre, Archibald Wallace Duncan, Leon Francis Brandenbourg, John Edward Scudamore, Henry Lewis Barker, Edward Austen Penny, and George Benkhorn Harland.

Surgeon-General W. B. Bannerman has been appointed an Additional Member of the Legislative Council of the Governor of Madras Presidency. Lieutenant-Colonel T. E. Dyson has been granted one year's leave of absence home from India. Lieutenant-Colonel A. Coleman has handed over charge of the duties of Superintendent of the Rawal Pindi District Jail to Captain C. A. Gill.

Major J. W. F. Rait has been granted an extension of furlough for four months by His Majesty's Secretary of State for India. Major M. Corry has handed over charge of the duties of Superintendent of the District Jail at Ludhiana to Captain J. G Swan. Major W. E. Scott-Moncrieff, Agency Surgeon of the Second Class, Bengal Presidency, has been granted leave of absence home from India for two years. His Excellency the Governor of Bombay in Council has been pleased to appoint Major A. Hooton to officiate as Civil Surgeon at Poona, vice Lieutenant-Colonel J. B. Smith, proceeding on leave. Major E. S. Peck has assumed charge of the duties of Superintendent of the District Jail at Jullundur, vice Captain H. C. Keates. Major A. F. W. King has been appointed to officiate as Health Officer of the Port and Civil Administrative Medical Officer at Aden during the absence on leave of Lieutenant-Colonel S. E. Prall. Major G Hutcheson, Civil Surgeon at Aligarh, has been granted six weeks' privilege leave of absence.

Captain W. M. Houston has been appointed to officiate as Medical Officer in charge of the Kathiawar Political Agency and in charge of the West Hospital at Rajkot. Captain R. B. S. Sewell, Surgeon Naturalist to the Marine Survey of India, has been appointed to officiate as Professor of Biology at the Medical College, Calcutta, during the absence on leave of Captain R. E. Lloyd. The services of Captain P. Heffernan have been placed at the disposal of the Government of Madras. Captain F. T. Thompson has been granted six months' leave of absence on the recommendation of a medical board. Captain J. E. Clements has been appointed to officiate as Superintendent of the Central Jail at Fategarh, vice Lieutenant-Colonel E. Jennings, granted leave. Captain M. J. Quire has been appointed Professor of Materia Medica at the Madras Medical College. The services of Captain C. C. Shaw have been placed at the disposal of the Chief Commissioner of the Central Provinces. Captain W. P. G. Williams has been appointed to officiate as Superintendent of the Central Jail at Bareilly during the absence on leave of Major C. B. Prall. Captain R. B. Nicholson has been granted one year's leave of absence home from India. Captain J. W. McCoy has been appointed Civil Surgeon at Dinajpur.

SPECIAL RESERVE OF OFFICERS.

Royal Army Medical Corps.

The undermentioned Lieutenants are confirmed in their rank:—Gilbert K. Aubrey, Charles C. Jones, and Henry M. Buchanan.

TERRITORIAL FORCE.

Royal Army Medical Corps.

2nd East Lancashire Field Ambulance, Royal Army Medical Corps: Lieutenant Thomas Carnwath resigns his commission (dated Feb. 14th, 1912).

2nd West Riding Field Ambulance, Royal Army Medical Corps: Lieutenant Charles W. Eames to be Captain (dated Jan. 1st, 1912).

3rd Welsh Field Ambulance, Royal Army Medical Corps: The undermentioned officers to be Captains (dated Dec. 25th, 1911):—Lieutenant Daniel E. Evans and Lieutenant Ernest Brice. Lieutenant George D. E. Jones to be Captain (dated Jan. 7th, 1912).

4th Northern General Hospital, Royal Army Medical Corps: The undermentioned officers resign their commissions (dated Feb. 14th, 1912):—Captain John T. Collier, Captain Harold C. Harrison, and Captain Percy C. Phillips.

3rd West Riding Field Ambulance, Royal Army Medical Corps: Captain (Honorary Captain in the Army) Frederick A. Hadley to be Major (dated Nov. 15th, 1911).

1st South Midland Mounted Brigade Field Ambulance, Royal Army Medical Corps: Lieutenant Thomas H. Forrest to be Captain (dated Jan. 31st, 1912).

3rd London General Hospital, Royal Army Medical Corps: The under-mentioned officers resign their commissions (dated Feb. 21st, 1912):—Lieutenant-Colonel Sir Thomas Barlow, Bart., K.C.V.O, Major Augustus J. Pepper, Captain Henry A. Caley, Captain Horace S. Collier, and Captain Rupert T. H. Bucknall.

2nd London Sanitary Company, Royal Army Medical Corps: Percy Norman Cave to be Lieutenant (dated Jan. 9th, 1912).

Attached to Units other than Medical Units.—Lieutenant John C. S. Burkitt to be Captain (dated Nov. 15th, 1911). Lieutenant Reginald W. Ironside resigns his commission (dated Feb. 21st, 1912). Captain John A. Gibb resigns his commission (dated Feb. 21st, 1912).

For Attachment to Units other than Medical Units.—James Hamilton (late Captain, 5th Battalion, The Queen's Own (Royal West Kent Regiment) to be Captain (dated Feb. 3rd, 1912) Douglas Larmer Wall to be Lieutenant (dated Feb. 21st, 1912).

ROYAL ARMY MEDICAL CORPS (EASTERN COMMAND) TRAINING STAFF TOUR.

The following officers of the Royal Army Medical Corps stationed in the Eastern Command have been directed to attend a staff tour to be held at Guildford from Feb. 26th to 29th:—Lieutenant-Colonel M. O'Halloran, in charge of the Military Hospital at Canterbury; Lieutenant-Colonel F. S. Le Quesne, V.C., in charge of the Auxiliary Hospital at Woolwich; Major F. W. Begbie (Colchester), Major J. C. Jameson (Woolwich), Major H. E. Staddon (Shorncliffe), Major M. M. Rattray (Brighton), Major R. H. Fuhr, D.S.O. (Woolwich), and Major E. B. Knox (Norwich) The object of the tour is chiefly to study the modification which the recently introduced system of supply and transport may entail in the working of the medical services on active service.

The King has fixed Saturday, June 22nd, for an inspection of the St. John Ambulance Brigade in Windsor Park.

Correspondence.

"Audi alteram partem."

LEISHMANIA AND MOSQUITOES.

To the Editor of THE LANCET.

SIR,—Captain J. Hay Burgess, I.M.S., in a criticism of Professor Franchini's work, to which he himself will answer if he thinks it necessary, uses the following sentence: "I note that such is the heading of his article. *Leishmania infantum and Leishmania donovani are not synonymous terms.*" As Professor Franchini, voluntary assistant in my institute, has published other contributions on leishmania, cultivated from spleen juice of kala-azar patients, it is well that Captain Hay Burgess should know: 1. I have found in Sicily and in Calabria cases of kala-azar in youths (13 to 18 years old) and among grown-up people (38 years old). Dr. Spagnolio has found the disease in a man 34 years old, and Dr. Tropeano in a girl 20 years old. 2. That the symptoms and the morbid anatomy correspond to those of Indian kala-azar. 3. That the researches of Longo (Clinica Pediatrica of the University of Catania) have shown that the leishmania of our kala-azar *lives in all those mediums in which develops Leishmania donovani.* 4. That the only difference between Indian leishmania and the Italian-Tunisian form lies in the fact that dogs cannot be infected with the first one. This has been admitted also by Nicolle in one of his letters, which I have published. Now what importance the experiment by Patton on dogs has in order to show the difference of the two parasites I have shown already in my note,[1] and I have repeated it on more than one occasion.

I, who have been occupied for three years in studying this problem of vital interest for South Italy, am of opinion that the two kinds of leishmania are (1) morphologically identical; (2) they develop in the same medium of culture; (3) they produce in monkeys the same infection; (4) they produce in man the same symptoms and the identical morbid anatomy. The clinical picture among us is more easily to be observed in children than in India. The disease shows also in Italy "epidemic recurrences" (spring).

The "Leishmania infantum Pianese" appears identical with "Leishmania infantum Nicolle"; according to my own studies and to other ones, Leishmania infantum and Leishmania donovani are synonymous.

The leishmania of the "*ponos*," a children's disease, which I have discovered to be nothing else than kala-azar, was shown in Greece to be the same as the leishmania which Cristomanos, Aravantinos, and others found in Greece among *grown-up people.* It is necessary to add that whilst Nicolle did not find cases in grown-up people in Tunisia, Dr. Tashin Bey found at Tripoli a young man aged 19 suffering from kala-azar. How can one write in my own cases, in those of Spagnolio, Cristomanos, Tashin, of a Leishmania infantum?—I am, Sir, yours faithfully,

Prof. Dr. UMBERTO GABBI,
Director of the Section of Tropical Diseases at the Medical Clinic of the University of Rome.

Rome, Jan. 26th, 1912.

To the Editor of THE LANCET.

SIR,—I notice in THE LANCET of Jan. 13th, p. 123, a letter by Captain J. Hay Burgess, I.M.S., in which he comments upon a paper of mine on the Leishmania in Mosquitoes, and I hope you will permit me to make the following brief reply, which will be given in greater detail in an article appearing in a future number of the *Annals of Tropical Medicine and Parasitology.*

It appears to me that Captain Burgess has either not read my paper carefully or he has not quite understood what I wished to express. I have stated elsewhere that I have read repeatedly the well-known researches of Captain W. S. Patton, but I cannot understand how Captain Burgess could possibly compare my researches on the A. maculipennis (1911)[2] and the later ones on some culicidæ, including S. fasciata (1911)[3] with those of Captain Patton on Anopheles stephensi and Culex fatigans. It must be remembered that A. stephensi is not found in Europe at all, and that C. fatigans is found only in Malta as regards European countries.

According to Captain Burgess it would appear natural that the same parasites found in A. stephensi should likewise be met with in A. maculipennis. It may well be that he has found flagellate and post(?) flagellate forms in C. fatigans, but this has no bearing on my researches. I have repeatedly and very clearly stated in my papers that I have made *numerous control experiments* in which I have *never* found *any* parasites such as were described from the insects found on the cultures. I have also stated that I have found, in smears made from mosquitoes which had been fed on cultures, small round or oval forms identical with those from individuals infected with kala-azar. Is it possible to mistake these small round oval forms for herpetomonas?

As regards the other experiments, it would have been better if Captain Burgess had more carefully read the last portion of my article published in THE LANCET, where I said that more sections of mosquitoes, and still further experiments with the non-flagellate parasites contained in the splenic juice, as well as animal experiments, &c., have to be made.

I should like to draw Captain Burgess's attention to the fact that it is possible to transmit the disease to animals by means of cultures of the parasite from the Mediterranean. My researches have only just commenced, and will be resumed as soon as possible; they had to be discontinued because of the scarcity of mosquitoes owing to the decrease in temperature. As regards the nomenclature of L. donovani and L. infantum, I cannot accept the statement that "Leishmania infantum and Leishmania donovani are not synonymous terms," since he does not give any plausible proof. Meanwhile I can affirm that the leishmania of the Mediterranean can be cultivated in Novy-MacNeal-Nicolle's medium as well as in citrated blood, that the morphology is the same, that the clinical picture and prognosis of the disease are the same, and also that during the last year a youth, 18 years of age, died in Rome from kala-azar, which has not been the first and only case.

It can, therefore, be easily understood that the problem is a complicated one which is evidently not to be solved with a few words, as Captain Burgess apparently desires.

I am, Sir, yours faithfully,

Liverpool, Feb. 15th, 1912. Professor G. FRANCHINI.

[1] U. Gabbi: About Kala-azar (Il focolaio endemico di Bordonaro). Arch. delle Malattie trop. dell' Italia meridionale, vol. i., 1910, Rome.
[2] Franchini, G., THE LANCET, Nov. 4th, pp. 1268-1269.
[3] Franchini, G., Riv. Crit. Clin. Med. Firenze, XII., No. 45.

THE "RADICAL" OPERATION FOR MALIGNANT DISEASE OF THE TESTICLE.

To the Editor of THE LANCET.

SIR,—I have read with interest the paper in THE LANCET of Feb. 17th by Mr. H. Morriston Davies, entitled "Malignant Disease of the Testicle and the Treatment of it by Radical Operation." His summary of Nicholson's paper on the pathology of new growths of the testicle is excellent, and everyone will agree with him in his plea for the early recognition of this very grave form of malignant disease. The chief object of the paper, however, is to urge upon surgeons the adoption of a "radical operation" "unless the lumbar glands are extensively involved or there are evidences of metastases elsewhere"; indeed, his final point is that under these circumstances this "radical operation" "must be done." May I use your columns to ask Mr. Morriston Davies to give surgeons some firmer ground to rest upon than he has at present furnished? It is not enough to point to the known frequency of recurrence after simple castration, nor to show by the record of his own case that a certain form of extensive operation is feasible—"the patient returned home three weeks after the operation." What we need to be informed of is the *final result* of these "radical operations." Mr. Morriston Davies's own case was operated upon on April 5th, 1911—only ten months ago—and I infer that he is known to be free from all sign of recurrence *thus far*, but it would be a satisfaction to be distinctly told even this, and still more satisfactory to be told what is known of the other 13 cases of this operation to which he makes reference, the earliest of which, if cured of his disease, has now lived about seven years since the operation. I ask for details of 14—not 13—operations because, in spite of his footnote, I hardly

think Mr. Morriston Davies does my colleague Mr. J. Bland-Sutton justice in excluding his case from the list. The record of operations for malignant disease as mere surgical procedures is one thing; the right to attach the words "radical" or "ideal" to such operations is quite another. Surgeons know that Grégoire's operation can be done with safety by careful operators. What they want to know is the final (not immediate) result of this operation—its influence upon the course of the disease. Mr. Morriston Davies leaves us to suppose that all of the 13 (or 14) cases to which he refers justify his use of the word "radical" by having been permanently cured by the operation. Is this the fact? I ask for information, and by no means as a convinced opponent of this operation.

Mr. Morriston Davies refers to the general practice of surgeons in operating for malignant disease of the tongue and breast, and says: "There is no reason why the same radical treatment should not be adopted in cases of malignant disease of the testicle." In saying this, I think he has overlooked the difference in the usual clinical course of the disease in these different organs. Cancer of the tongue very often remains limited to the tongue and adjacent parts, and to the primary glands and the tissues around them, not only for months, but even throughout the whole course of the disease. Cancer of the breast, too, quickly infects the primary glands in the axilla, but in many cases does not spread further along the lymphatics for a long time. It is this great fact of the limitation of the disease to the area of operation that justifies, and explains the success of, our operations upon cancer of the tongue and breast. We cannot speak in similar words of malignant disease of the testicle; not only are the primary glands speedily infected and become the seat of very active growth, but the frequency and rapidity with which the disease spreads to the secondary glands, and further still, warn us not to rest our case for operation solely upon the results we obtain in operating for cancer of the tongue and breast.

However, I hope that Mr. Morriston Davies can reassure me on this point, and that, having recently looked up the records of all the published cases of this operation, he can tell us that a large proportion of them are living without sign of recurrence.—I am, Sir, yours faithfully,

ALFRED PEARCE GOULD.

Queen Anne-street, W., Feb. 19th, 1912.

THE VALUE OF SHORTCIRCUITING THE COLON FOR SEVERE CONSTIPATION.

To the Editor of THE LANCET.

SIR,—I should like to bring to the notice of the medical profession the very beneficial effects of Mr. Arbuthnot Lane's operation for the cure of chronic constipation as experienced by myself. Ever since an attack of typhoid fever when I was 18 (30 years ago) I have suffered from constipation of a very severe kind. During this period I have rarely had my bowels moved without aperients or enemata. Frequently I have gone a week without any action at all, and always the motion was hard and dry like sheep's dung. Along with this constipation I have suffered from dyspepsia, with its accompanying flatulence and acidity and general gastric discomfort. During the last four or five years my symptoms became much worse and it was with difficulty that I was able to continue my work.

In the autumn of 1908 I had a sudden attack of severe pain in the right hypochondrium which persisted for some days. I consulted a specialist who suspected that I had a duodenal ulcer. He called in a surgeon who opened the abdomen and found a large ulcer on the posterior wall of the duodenum. He did a gastro-enterostomy and I made a good recovery from the operation. For a time my symptoms were much relieved, but after six months the old symptoms of constipation, flatulence, &c., returned as badly as ever, and I had to give up work I became so ill. I consulted the same specialist again, who prescribed a raw, or practically raw, minced meat and minced chicken diet, with 30 c.c. of normal horse serum daily. This made me much worse, the pulse coming down to 44 and the temperature falling to 96° F.

I then lived for some months on a diet of milk, eggs, boiled fish, and toast. I was quite unable to digest anything else, but I got no better, so I consulted another surgeon who said he could do nothing without opening the abdomen again. This he did, and found the duodenal ulcer quite healed, but he found the appendix very much diseased, and he removed it. He told me he expected this had been the cause of my symptoms and that many cases got better after the removal of such an appendix. He also closed my pylorus. I again made a good recovery after the operation and for seven or eight months I did fairly well, but I always had a great deal of flatulence and often felt sick, which was a new symptom. I noticed the constipation was gradually coming back again, so I went to Harrogate and was instructed on the method of douching out the colon with large saline injections. This treatment relieved the constipation, but gave me so much pain, particularly in the region of the ascending colon, that I had to discontinue it.

I next tried dieting myself as recommended by Dr. A. F. Hertz in his book on "Constipation," eating porridge, wholemeal bread, with plenty of fruit and cream, and I persisted in this treatment for several months (December, 1910, to April, 1911). The constipation was certainly better, but I became weak and ill, and soon nervous symptoms developed which I had never had before. My thighs and calves were numb at times; at others I felt a feeling of pins and needles in the same parts. Towards the end of April, 1911, I completely broke down and was unable to do anything, so I consulted Mr. Lane, who sent me to Dr. A. C. Jordan to have the alimentary tract examined by means of the X rays. I was given a meal of 6 oz. of carbonate of bismuth, and this was carefully watched in its passage through the whole alimentary canal. The stomach was a little dilated but was vigorous in action, and the gastro-jejunostomy was working well. There was great delay in the passage of the bowel contents through the ileo-cæcal valve, and the terminal coil of the ileum appeared to be firmly adherent to the adjacent bone. There was also delay in the transverse colon, which hung down into the pelvis like a garland. The rectum was much elongated and in the form of a double S. On receiving Dr. Jordan's report Mr. Lane said another operation was necessary, so I placed myself entirely in his hands. He operated on me and found the last two inches of my ileum tightly bound down and very much constricted by a strong broad mesentery. He divided the ileum and put it directly into the rectum. The ileum showed very definite evidence of the chronicity of the obstruction. I made a very good recovery after the operation, and was able to return to work in ten weeks.

Now what benefits have I derived from the operation? 1. I now have a daily action of the bowels. At first there were several motions a day, but now things have become nearly normal. There is still a tendency to constipation, but this is easily remedied by fruit or some very mild aperient. It has been said that Mr. Lane's operation produces a state of chronic diarrhœa; I have not found it so. 2. The nervous symptoms mentioned before have completely disappeared and I sleep much better; formerly the insomnia I suffered from was very distressing. 3. My appetite has returned; indeed, it is almost too good, and I can eat an ordinary diet in moderation—a thing all dyspeptics will appreciate. 4. The principal benefit, however, is that I feel so well. I was an absolute physical wreck when I went to Mr. Lane in May; now I feel fitter and better than I have done for years.

I am, Sirs, yours faithfully,

F. P. BREMNER, M.B. Edin.

Lower Clapton-road, N.E., Feb. 20th, 1912.

PS.—I may say that both the surgeons who performed the previous operations were eminent men in the profession, so whatever they did was well done.

THE FATE OF THE APPENDIX AFTER ABSCESS FORMATION.

To the Editor of THE LANCET.

SIR,—Under this title an interesting paper by Mr. A. P. Dodds-Parker on the advantages of removal of the vermiform appendix in abscess cases appeared in THE LANCET of Feb. 10th, and has been followed by letters from Mr. Douglas Drew and Mr. H. J. Godwin in your issue of Feb. 17th. All the writers are agreed that in these cases the appendix is seldom destroyed by the disease or the suppuration that follows, and should be removed when the patient has recovered from a drainage operation. It is because the operation performed in the Royal Victoria Infirmary,

Newcastle-on-Tyne, where I was house surgeon, differs so materially from those advocated that I have ventured to offer a brief note as to the practice here.

A paper on "The Diagnosis and Treatment of Abscess in connexion with the Vermiform Appendix," by Professor Rutherford Morison, published 11 years ago in THE LANCET (Feb. 23rd, 1901), has been overlooked by your contributors, and as a large experience has confirmed the truth of the views he then expressed I should like to draw further attention to them. At the end of this paper he draws the following conclusions:—

> The diagnosis (of abscess) is based upon the history of an acute attack of appendicitis and the presence of a definite tender lump. The position of the appendix and the relations of the abscess may be foretold by a careful study of the tumour. (Every old house surgeon of Mr. Morison can fully bear this out, and the fact is insufficiently recognised, as it is most helpful in prognosis and treatment.) ..... Early operation is the proper treatment, and with few exceptions the vermiform appendix should be removed at the same time as the abscess is drained (pelvic cases form the chief exceptions to this rule).

A warning as to this is offered in the same paper in these words:—

> The operation should be done with the object of draining the abscess and removing the appendix, and, to do this safely, undoubtedly requires care and some practice. It also demands that the patient should not be too seriously ill to tolerate a fairly long operation; that skilled assistance should be available; and that the surroundings can be so adapted as to approach a hospital standard.

No detail of the operation then described has been altered, except that the catgut sutures are reinforced with silkworm-gut and that the amount of gauze used for drainage purposes has been diminished or altogether omitted. Later Mr. Morison[1] reports that he had operated on 110 consecutive cases on these lines without a death, and I recently collected statistics for him,[2] showing that 157 abscess cases had been operated upon in the Royal Victoria Infirmary without a death during the year 1910.

I am, Sir, yours faithfully,

Newcastle-on-Tyne, Feb. 18th, 1912. CHARLES F. M. SAINT.

KING EDWARD'S HOSPITAL FUND FOR LONDON AND THE EVELINA HOSPITAL.

To the Editor of THE LANCET.

SIR,—In justice to my committee I trust you will find space for this reply to the letter from the honorary secretaries of King Edward's Hospital Fund, which you have published in your issue of to-day. Their communication will, I fear, give the impression that my committee have deliberately departed from the uniform system of hospital accounts; this is not the case. It must be remembered that the legacy in question was absolutely unconditional, and *not* specified as being for the general purposes of the hospital. My committee, however, as a precaution sought legal advice, and ascertained that it would be a perfectly legitimate transaction to allocate it to the Samaritan fund. This legacy was then dealt with in accordance with a regulation of the King's Fund (No. 7 on p. 12 of their red book), which exactly applies to the case. This course has been approved by the hospital auditor who signed the accounts.

Paragraph 3 of the honorary secretaries' letter states that my committee have full power to apply the legacy to the general purposes of the hospital. Granted; but, having regard to the conditions just mentioned, they have also equal power to allocate it to any other object which is for the benefit of the hospital. If the committee of the King's Fund would be just in dealing with this matter, they must admit that it is not merely a question of hospital accounts, but also the strict interpretation of the wording of a will.

The letter from the honorary secretaries cannot fail to create the impression that my committee by their action wish to conceal the purposes for which the income of the Samaritan Fund is used. To this I must give a complete denial, and would point out that the authorities of the King's Fund know full well that the accounts of all special funds are published in our annual report, and are therefore open to the inspection and criticism, not only of the subscribers, but of anyone who may obtain a copy of the book.

In managing the affairs of this institution, which is the only large hospital for children in the whole of South London, my committee's only desire is to do, with the means at their disposal, the greatest amount of good for the sick poor, and by their straightforward policy hope to elicit the sympathy and support of the public.

Sincerely thanking you for your kindness and courtesy in publishing my other letter,

I am, Sir, yours faithfully,

D. MALCOLM SCOTT,
Feb. 17th, 1912. Chairman of the Committee of Management.

THE BIRTHPLACE OF LORD LISTER.

To the Editor of THE LANCET.

SIR,—I am writing in the room in which Lord Lister was born at Upton on April 5th, 1827. The house is, as you state in your obituary notice, now the Vicarage, and the Church of St. Peter is built upon a portion of the garden in which the great surgeon played as a boy. To the completion of this church Lord Lister himself contributed a few years ago, and we who worship in it think that it is a fitting home for a memorial to him, and that the best form that the memorial could take—of one who did more than any other man has done to alleviate suffering and to save human life—would be a rood screen with the figure of the Saviour of the World, and to this the character of the church is peculiarly adapted. We are all poor people here and cannot carry out our wish unaided. I therefore ask you of your courtesy to allow me to appeal through your columns for donations for this purpose—they could be given as a thankoffering in many cases for benefit received, as well as to perpetuate, on the scene of his birth, the memory of one who has placed the whole world under an obligation. I am, Sir, yours faithfully,

F. K. HODGKINSON, Vicar.

St. Peter's Vicarage, Upton, Essex, Feb. 16th, 1912.

PUBLIC HEALTH IN GRAND CANARY.

To the Editor of THE LANCET.

SIR,—Some report having appeared in the press regarding the prevalence of epidemic disease, I should be greatly obliged if you will give publicity to the fact that this island is, and has been, particularly free from infectious disease of any kind, the report being therefore quite without foundation. Visitors and invalids can enjoy the advantages of this delightful climate under as healthy conditions as exist anywhere. I am, Sir, yours faithfully,

W. M. M. JACKSON, M.D., D.P.H.

Las Palmas, Grand Canary, Feb. 10th, 1912.

FATALITIES FOLLOWING THE INTRAVENOUS INJECTION OF SALVARSAN.

To the Editor of THE LANCET.

SIR,—A correct appreciation of the value of salvarsan in syphilis, its efficacy in treatment, and the risks incurred, can only be attained by a careful consideration of all the aspects of the case. In THE LANCET of Jan. 20th (p. 152) you published an article by Mr. Willmott Evans in favour of salvarsan when employed with due care, and in your issue of Feb. 3rd (p. 283) you printed a valuable paper by Mr. Arthur Foerster, who has employed the drug widely, and who, with a recognition of its value, is also very certain that its use is by no means free from danger. In your issue of Jan. 20th (p. 153) Dr. J. H. Sequeira laid stress on the use of redistilled water in the preparation of the salvarsan for intravenous injection. It is certain that many precautions are needed to obtain the best results. You have referred[1] to fatal cases in which epileptiform convulsions and death occurred in young and strong patients after the intravenous injection of an ordinary dose of salvarsan. In those in which a necropsy was made hæmorrhagic encephalitis was found.

At the Académie de Médecine of Paris Professor Gaucher, who has succeeded Fournier as the leader of the French school of syphilography, referred recently to two fatal cases at the Saint-Louis Hospital. In one, a strong

[1] An address delivered at Halifax on Oct. 7th, 1903. See Northumberland and Durham Medical Journal for 1904, p. 263.
[2] Brit. Med. Jour., Oct. 28th, 1911; and THE LANCET, Dec. 16th, 1911, p. 1683.

[1] THE LANCET, Dec. 23rd, 1911, p. 1785.

country youth, in excellent health, contracted syphilis a month after going to Paris. A month later he came under the care of M. de Beurmann with an indurated chancre and double inguinal adenopathy. Examination of his organs revealed nothing abnormal and the urine did not contain albumin. On Sept. 18th an intravenous injection of 60 centigrammes of salvarsan was given with the usual aseptic precautions. There were no immediate symptoms, but after 15 minutes he was seized with vertigo and a feeling of heat. During the day he vomited abundantly, and in the evening his temperature was 100·7° F. On the following day he was quite well. On the 21st the injection was repeated under the same conditions as before. The same solution was used for the injection of another patient, who experienced no ill effects. At first the injection seemed to be well borne, but in the afternoon the patient was seized with vertigo, headache, and vomiting. The evening temperature was 101·5°. During the night he vomited again and complained of pain in the epigastrium. On the 23rd, while asleep, he uttered a cry like the bark of a dog and was seized with epileptiform convulsions, first tonic, then clonic. He bit his tongue and foamed at the mouth. At 4 P.M. he was comatose and made incoördinate movements. The pupils were dilated and immobile, and the face was pale and covered with sweat. The respiration was stertorous, the pulse 110, and the temperature 99·1°. At 4 A.M. on the 24th he died. At the necropsy the heart, great vessels, and lungs were found normal. So were the abdominal organs, except the kidneys, which were much enlarged, hard, congested, and of the colour of wine lees. The capsules were not adherent. Microscopic examination showed acute nephritis with epithelial degeneration and destruction of the tubules. The brain and meninges were normal to the naked eye. Professor Gaucher concluded that the patient died from uræmia, the result of arsenical poisoning. He considered salvarsan a dangerous drug, which should be used with the greatest care and reserved for cases in which mercury is badly borne or is without effect.

At a meeting of the Académie on Nov. 21st Professor Gaucher reported two more cases in which salvarsan had proved fatal. In one, communicated to him by Professor Oltramare, of Geneva, a robust man, aged 48 years, who had contracted syphilis 15 years before, desired an injection of salvarsan, although he had no symptoms. A complete examination revealed no sign of cardiac, renal, or nervous disease. On August 17th he was given an alkaline intravenous injection of 60 centigrammes of salvarsan. When seen again on the 19th he declared that he had well borne the injection and was quite well. On the 20th he complained of slight headache, and on the 21st he was found lying on the floor of his room. A medical man was summoned and found him unconscious, with convulsive movements, elevated temperature, and violaceous face. He remained in this state on the following day, and had several attacks of convulsions. He was covered with sweat and cyanosed. The pulse and respiration were rapid, the pupils were first dilated, then contracted, the temperature rose to 104 9°, and he died at midnight. The necropsy showed lepto-meningitis, scars on the ascending aorta, fatty degeneration of the heart, chronic bronchitis, and broncho-pneumonia of the lower lobes.

In another case, communicated by Dr. Caraven, of the Medical School of Amiens, a strong man, aged 21 years, who had just passed for the military service, came to hospital with a chancre. There were no signs of visceral disease and the urine did not contain albumin. On Oct. 11th an intravenous injection of 60 centigrammes of salvarsan was given and was well borne. On the 18th the injection was repeated and was equally well borne. But on the 20th the patient complained of headache, which was worse on the 21st. On the 22nd there were symptoms of meningitis—delirium, carphology, rigidity of the neck and upper limbs, and Kernig's sign. The respiration was stertorous and the pulse was 112. The pupils were slightly dilated, the eyes half open, and the conjunctivæ much congested. The face and nails were cyanosed and the patient was comatose. Lumbar puncture yielded cloudy, amber-coloured fluid. The urine contained 2 3 grammes of albumin per litre. In the afternoon he sweated profusely and there was Cheyne-Stokes respiration; the temperature rose to 104·2°. In the evening he died. The necropsy showed intense congestion of the brain and lungs. The kidneys were red and soft. The stomach presented a diffuse hæmorrhage.

It is now I think impossible to explain away all the fatalities by attributing them to errors of technique or use of this drug in unsuitable cases, as has been attempted by Ehrlich and his followers. To me it seems that there is incontrovertible evidence that the remedy is dangerous and may prove fatal to young strong patients. It is too soon, I consider, to estimate the position which will finally be given to salvarsan, but not too soon for emphasising its dangers, especially as they may present themselves to the general practitioner.

I am, Sir, yours faithfully,

M.D.

THE MEDICAL LIBRARY ASSOCIATION OF AMERICA.

To the Editor of THE LANCET.

SIR,—I have just read with interest the annotation on the Medical Library Association in THE LANCET of Jan. 13th. If you will permit me to correct an error, I believe conditions in this country are the same as in England—that is, we have some few large libraries and a number of small ones. In the large libraries it is "all give and no take," as the smaller libraries have nothing, or next to nothing, to contribute, while the larger libraries have hundreds of duplicates.

We have been endeavouring to develop an altruistic spirit in the medical libraries in this country, and, judging from the work in our Exchange, I think we are succeeding. I want to thank you for your kind words concerning our association and the *Bulletin*.

I am, Sir, yours faithfully,

JOHN RUHRÄH,
Treasurer.

Baltimore, Feb. 5th, 1912.

THE MEDICAL PROFESSION AND THE NATIONAL INSURANCE ACT.

To the Editor of THE LANCET.

SIR,—In the National Insurance Act, published by authority, at p. 135, Fourth Schedule, Part II., Additional Benefits, para. 1 runs as follows:—"Medical treatment and attendance for any persons dependent upon the labour of a member." This evidently includes wives and children who are not themselves workers. Does it apply only to relatives of members of approved societies? And what is the scale of remuneration for such medical treatment and attendance? Is it left for the Insurance Commissioners to arrange? Can any of your readers explain?

I am, Sir, yours faithfully,

W. J LE GRAND, M.D. R.U.I.

Blackwell, near Alfreton, Feb. 14th, 1912.

To the Editor of THE LANCET.

SIR,—May I be allowed to refer to a section of the National Insurance Act to which nobody seems to have given much attention, but which is of very great importance to all medical men practising in seaport towns? The section has, I think, never been referred to in the correspondence in your columns; it does not seem to have been brought up before the Council of the British Medical Association, for it is nowhere referred to in their recently issued "Report"; it has apparently escaped the notice of the eminent counsel consulted by the *Practitioner;* it is not noticed in the "Reform Committee's" "proposal for an amended Act," and in the "tabulated list of clauses" published by you in your number of Feb. 10th the number of the section is divorced from its contents, yet it is the only section of the Act which gives a direct negative to one of the "six cardinal points."

The section referred to is Section 48, "special provisions for the mercantile marine," and the especially interesting subsections are:—

(4) The Board of Trade shall ..... cause a society to be formed, t be called the Seamen's National Insurance Society, of which any masters, seamen, and apprentices to the sea service and the sea fishing service who are employed within the meaning of this ..... Act shall be entitled to become members.

(5) The affairs of the S.N.I.S. shall be managed by a committee ..... comprising representatives of the Board of Trade, of shipowners, and of members of the society in equal proportions, and the society shall, notwithstanding anything in this ..... Act, become an approved society.

(12) Members of the S.N.I S. shall be deemed to reside in England, and the *medical benefit* of such *members* shall be *administered* by *the*

society instead of by the Insurance Committee ; ..... but nothing in this provision shall prevent the society agreeing with Insurance Committees for the administration of those benefits by the Committee in relation to *individual* members of the society.

That this new society will become an extremely rich and therefore powerful and attractive one is rendered probable by the fact that, whilst the calls upon it for benefits will be small owing, under 48 (1), to neither sickness nor disablement benefit being paid to its members in respect of any period during which the owner of the ship is, under the Merchant Shipping Act, 1894, liable to provide medicine, attendance, and maintenance, at the same time, by 48 (6), the whole of the contributions paid by employers in respect of masters, seamen, and apprentices who are neither domiciled nor have a place of residence in the United Kingdom will be credited to the society. And yet the medical benefit of this powerful society is to be entirely under lay control, and not a single representative of the medical profession is to be allowed to have a place on the committee of management.

Can anyone say in face of the direct prohibition in this section that it is still possible to obtain the six points by arrangement with the Insurance Committees?

I am, Sir, yours faithfully,

Ramsgate, Feb. 17th, 1912. FRANK MILTON.

SCOTLAND.

(FROM OUR OWN CORRESPONDENTS.)

The Late Lord Lister.

IT was appropriate and right that a religious memorial service should be held in Edinburgh simultaneously with the service which was held in Westminster Abbey on the day of the burial of Lord Lister. The service was held in the ancient church of St. Giles ; it was attended by the Lord Provost and magistrates of the city in their official robes ; by the University, led by the Principal, Sir William Turner ; by the Royal College of Physicians, represented by the Council and many of the Fellows ; by the Royal College of Surgeons, represented by its Council and a large number of its Fellows; and by members of the profession belonging to neither college. The students were present in considerable numbers, and were officially represented by members of the Students' Representative Council. There were also present a large number of non-medical members of the community. The service was conducted by the Rev. Dr. Wallace Williamson, assisted by one of the University professors from the Faculty of Divinity, and one from the New College. The service was short, simple, and dignified. The anthem selected was the passage beginning "What are these that are arrayed in white robes," and ending with the passage, "And God shall wipe away all tears from their eyes," which was rendered with great beauty by the choir. The address was delivered by the Rev. Dr. Wallace Williamson, and showed a wide and deep understanding and appreciation of the great work Lister had done, and an intimate knowledge of what Lister was as a man. He concluded an address worthy of the occasion as follows: "The whole world stands debtor to Joseph Lister to-day. The whole world offers grateful homage to his memory. It is in this spirit we meet to-day. In humble gratitude for a whole life devoted to the highest and purest aims, for the splendour of his example, for his courage and tenderness, as well as for his undying gift to humanity, we bid him a proud farewell."

Edinburgh and the National Insurance Act.

If Mr. Lloyd George had for his purpose in the London Opera House speech to stiffen the backs of the profession in Edinburgh, and to make the counsel of moderate men, who are looking further ahead than next July, of no avail he is to be congratulated. Even supporters of the present Government have been rendered actively hostile. The Chancellor of the Exchequer has been an unspeakable trouble to his political friends in medicine, many of whom in their loyalty, first to medicine and secondly to their party, have been greatly embarrassed. Edinburgh has this week declared against the Act again, and at the divisional meeting of the British Medical Association selected three new representatives to the Representative meeting pledged to vote against the Act, and to vote for the removal of Dr. Maclean from the chairmanship of that body. I understand that the effect of the Chancellor's speech has not been so marked everywhere in Scotland as it has been in the Edinburgh district. Meanwhile, the election of representatives from the insurance areas to the Scottish Medical Insurance Council has been going on quietly and steadily. The Edinburgh and Leith Practitioners' Association has passed a vote of thanks to the medical corporations for the part they took in forming that council. It is expected that the Scottish Insurance Council will meet early in March.

Medical Officership of Stirlingshire.

A special meeting of the Stirling county council was held in Stirling last week for the purpose of considering the question of the appointment of a medical officer of health for Stirlingshire in the room of Dr. J. C. McVail, who was recently appointed Deputy Chairman of the Scottish Commission under the National Insurance Act. The council considered a recommendation from the public health committee to the effect that the present arrangement of a joint medical officer for the two counties of Stirling and Dumbarton, which had subsisted since 1891, should be continued, but on a division this recommendation was defeated, and it was agreed that a separate medical officer should be appointed for Stirlingshire. It was ultimately decided that the salary of the new medical officer should be £500 per annum, with travelling expenses and clerical assistance. The public health committee was empowered to make the appointment, suggested stipulations to the effect that the applicants should be able to make bacteriological examinations and that they should reside in the county of Stirling being disapproved.

Coöperation of Trained Nurses, Glasgow.

The nineteenth annual report of the Glasgow and West of Scotland Coöperation of Trained Nurses has just been issued. It forms very interesting reading, and proves the immense benefit that such an institution confers upon medical men, upon the general public, and upon the nurses themselves. The number of nurses on the roll is 185, and during the year 2096 cases were attended by them. The amount earned by the nurses during the year was £12,605, and since the establishment of the coöperation in 1894 the amount earned is £145,060 from attendance on 24,271 cases. The principle on which the institution is worked is that at the termination of a case the nurse collects the fee and pays to the lady superintendent a percentage thereof, which is placed to the credit of a common fund out of which the yearly working expenses of the coöperation are defrayed. A sick fund established in connexion with the association has a capital of £4301. All nurses (with the exception of a few who are already members of the Royal National Fund) contribute £1 per annum. These contributions, along with the income from investments and subscriptions from friends, have enabled the necessary payments to be made and a balance carried forward. The standard of qualifications for nurses has been gradually raised, while regular and continuous employment at remunerative rates, with the benefit of the sick fund, is practically guaranteed to them.

Gift of £1000 to Dundee Infirmary.

The Royal Infirmary, Dundee, has received from the widow and family of Mr. J. J. Weinberg the sum of £1000 towards the out-door relief funds of the institution, and in memory of Mr. Weinberg, who was for many years identified with the management.

Presentation to Dr. W. Brown of Braemar.

On the evening of Feb. 14th Dr. William Brown, who is leaving Braemar to take up practice in Aberdeen, was met by a large number of friends, and presented with a Barlock typewriter and a silver tea service, while his sister, Miss Brown, received a gold bangle. These gifts mark the appreciation of the respect and esteem in which Dr. Brown is held, and of the good services he has rendered to Braemar during his eight years' residence there.

Feb. 19th.

DONATIONS AND BEQUESTS.—By the will of the late Surgeon-General Sir John A. Woolfryes the St. George's Hospital, the Royal Home and Hospital for Incurables, Putney, and the British Medical Benevolent Fund will each receive £500.—The Goldsmiths' Company have sent £1000 to St. Bartholomew's Hospital for the general funds of that institution.

IRELAND.

(FROM OUR OWN CORRESPONDENTS.)

The Royal Hospital for Incurables and Provision for Consumptives.

THE campaign against the extension of the Royal Hospital for Incurables by the addition of a pavilion for tuberculous patients is being carried on with vigour. At a public meeting held in Rathmines town-hall last week resolutions were carried protesting against the proposed action of the hospital authorities. It has been pointed out by a well-known Dublin surgeon that "all modern medical knowledge points to the fact that no case of consumption should be called incurable." A number of governors of the hospital have forwarded a memorial to the managing committee, praying the committee to reconsider its decision. The memorial might have carried more weight had it not followed closely on an unsuccessful attempt by the objecting governors to force their views on the managing committee at the recent election of five members of that committee. The question of the enlargement was made a test question, and the objectors failed to win a single place on the committee. If by any chance the committee is prevented from carrying out its scheme a very serious problem is raised. The Royal Hospital for Incurables is situated in an open suburb, but the workhouse hospitals, which contain many scores, if not hundreds, of tuberculous patients, are situated in densely crowded districts. A home for the dying, with consumptive patients, is in a crowded and poor district. The two fever hospitals, and the fever wings of the various city hospitals, are situated without exception in populous districts. If there is any danger of air-borne infection, the danger from these institutions must be infinitely greater than that from the Royal Hospital for Incurables. Nevertheless, many of the people officially connected with one or other of these institutions are among the loudest in their criticism of the Royal Hospital for Incurables.

Deaths of Children by Burning.

During the present winter very many deaths of children by burning have occurred. A few weeks ago the board of the Meath Hospital drew the attention of the public to the large number of fatal cases which had been attended in the hospital. It would appear as if the health authorities did not take any steps to enforce the provisions of the Children Act. At a recent meeting of the Dublin Sanitary Association a resolution was passed in which the council call the attention of the coroner, the sanitary authorities, and the public in general to the fifteenth section of the Children Act, 1908 (8 Edw. VII., ch. 67), which imposes substantial penalties on the guardians of children of tender years for exposing such children to risk of burning.

High Death-rate in Belfast.

Belfast is at present in the grip of a severe epidemic of influenza and of whooping-cough, with the result that the death-rate for the week ending Feb. 10th was from all causes 41·7, and from the principal zymotic diseases 2·7. This appalling mortality places Belfast at the height of all the towns of the United Kingdom, and the rate is nearly double that of the average of the English towns. The weather is mild, but pneumonia and chest ailments are very prevalent, the death-rate from these complaints alone being 21·7 per 1000. During the week ending Feb. 10th 15 deaths were due to whooping-cough, 73 to pneumonia, and 67 to diseases of the respiratory organs. During the week ending Feb. 15th 146 children under five years of age died, which was equal to a rate of 19·4 per 1000 of the whole population. Of these deaths, 108 were attributed to chest affections, whereas the average number of deaths of children under five years of age was 38, or 5·1 per 1000. Of the present epidemic of influenza, the marked features are throat, ear, and chest complications, and especially high temperatures among children.

Ulster Medical Society.

At the sixth meeting of the Ulster Medical Society for this session, held in the Medical Institute, Belfast, on Feb. 15th, the President, Dr. H. L. McKisack, being in the chair, Sir John W. Byers showed an old midwifery book, published in 1663, containing "The Compleat Midwife," by the celebrated Madam Louise Bourgioes, who attended Mary de Medici, wife of Henry IV.; "A Full Supply" of most useful and admirable secrets, by T. Chamberlain, M.P.; and "Rare Secrets in Midwifery," by Sir Theodore Mayern, who was physician to Charles I. He gave an account of each of these writers. Mr. P. T. Crymble showed a most interesting series of Roentgen ray photographs of the stomach after a meal with bismuth had been taken, to illustrate the action and position of that organ during digestion, and he also exhibited a number of stomachs prepared by formalin injection. In the discussion that followed Dr. W. Calwell, Professor J. Symington, Dr. A. Fullerton, Professor T. H. Milroy, Dr. S. T. Irwin, and Sir John Byers took part.

The Vice-Regal Milk Commission.

This Commission spent five days of last week in Belfast in interrogating a large number of witnesses, principally official. Their inquiries conveyed the impression that it was a pity the *personnel* of the Commission had not been strengthened by the presence of a pathologist, as well as by someone who had a thorough practical knowledge of the modern production, method of sale, and distribution of milk. Dr. W. St. C. Symmers, professor of pathology in the Queen's University of Belfast, in the course of his examination said he was not in favour of milk being subject to the process of pasteurisation. He thought the food properties of the milk were by this process undoubtedly impaired—why, he did not know. He had spoken to men who had large experience in the treatment of children, but not one held that pasteurised milk was as good as raw milk. He was still less in favour of sterilisation. To the great amusement of those present a lady member of the Commission then proceeded to point out to the professor, as though he were a nurse or a first-year medical student, the special advantages of pasteurisation, with the idea of showing him the error of his ways and the scantiness of his knowledge, the lady herself being apparently unaware that the Belfast corporation several years ago declined the gift of a pasteurising plant from Mr. Strauss. Another member of the Commission inquiring on the subject of immunisation, asked if the fact of people being supplied with milk containing an undiscovered tuberculous fraction did not tend to set up immunity from tuberculosis; to which Professor Symmers replied that that was certainly an extraordinary theory. They could not make all-round experiments that might be exceedingly dangerous. Were they to inoculate a child with anthrax it would in all probability mean the death of the child. He certainly would not father a view that would justify the selling of tuberculous milk to the public. It will be interesting to read—after a time—the conclusions and recommendations of a milk commission of which some of the members seem to regard "pasteurisation" as the solution of the milk problem, while others consider the taking of milk containing a few living tubercle bacilli is likely to set up immunity from tuberculosis.

The Insurance Act.

At a meeting of the Belfast Trades Council on Feb. 17th the following resolution was carried:—

That the secretary of the Belfast and District Trades and Labour Council be instructed to write the leaders of the different political parties and Ulster M.P.'s to urge them to bring pressure on the Government to pass a one-clause Act restoring the medical benefits to Ireland, as the absence of such benefits will severely handicap approved societies in Ireland, it being impossible for them to provide any safeguard against malingering and other abuses owing to there being no control over the doctor. We are also of opinion that the medical benefits are the most valuable benefits in the Insurance Act, and owing to its higher death-rate these are more needed in Ireland than any other part of the kingdom.

Feb. 20th.

PARIS.

(FROM OUR OWN CORRESPONDENT.)

The Death of Lord Lister.

THE great loss that British science has sustained in the person of Lord Lister has been felt in all countries. In France the Academy of Medicine suspended its session in sign of mourning, and the Academy of Sciences directed its President, M. Lippmann, to represent it at the funeral ceremony. Arrangements were also made for him to be accompanied by M. Chauveau (professor at the Museum), M. Dastre (professor at the Sorbonne), and M. Roux (director of the Institut Pasteur.)

Transmissible Diseases in Paris during 1911.

While a great number of cases of transmissible disease were reported in Paris during 1911, the figures are not at all surprising if its population is taken into account. The following is the official total as issued by the Prefecture of Police: Typhoid fever, 2175; variola and varioloid, 93; scarlet fever, 3565; measles, 11,987; diphtheria and croup, 3043; cholera and choleriform diseases, 32; ophthalmia neonatorum, 179; cerebro-spinal meningitis, 94. In the suburbs the figures are as follows: Typhoid fever, 1660; variola and varioloid, 23; scarlet fever, 1523; measles, 2349; diphtheria and croup, 1475; cholera and choleriform diseases, 8; ophthalmia neonatorum, 63; cerebro-spinal meningitis, 49.

The Isolation of Infectious Diseases in Schools.

The *Journal Officiel* has published a notice laying down the duration of isolation to be practised for pupils at public schools of all kinds who may be attacked with infectious disease, and the conditions that may determine this duration both for the patients and for their brothers and sisters. Pupils with diphtheria may return to school 30 days after a clinical cure, as certified to by a medical man. This delay may be lessened if, after two cultures made at eight hours' interval, the bacteriological examination is negative. In small-pox, 40 days after the beginning of the disease, readmission can be allowed on presentation of a medical certificate stating that there are no crusts or scales and that the pupil has taken a bath. In scarlet fever, the same measures as in small-pox. In measles, after 16 days. In mumps, 21 days. In whooping-cough, 30 days after absolute disappearance of spasmodic accesses, certified to by a medical man. In rubeola, 16 days. In typhoid and paratyphoid fevers, 28 days after cure, as certified by a medical man. In dysentery, 28 days. In cerebro-spinal meningitis, 40 days after a clinical cure medically certified. In poliomyelitis, 30 days after the beginning of the disease. In tinea and trachoma, when cured. If the patient has not been isolated his brothers and sisters will be allowed to return at the same time as himself provided they have escaped attack. If the patient has been isolated, the readmission of the brothers and sisters will take place, with certain exceptions, after a delay corresponding to the incubation period of the disease plus two days.

Evils of High Heels.

At the Société de Médecine de Paris, on Jan. 27th, M. Dagron showed that high heels can not only give rise to pain and contracture, but can set up a true inflammation of the tendons of the postero-inferior part of the calf. This affection may simulate a deep varicosis or even a cold abscess calling for special treatment, while all that is really required is rest and re-education in walking without high heels.

"Study Travels."

The "study-travel" of the Association Internationale de Perfectionnement Scientifique, an organisation which has the support of the French Government, will take place from August 10th to Sept. 6th in the Balkan countries, Turkey, and Greece. Aix-les-Bains is the place of assembly. The itinerary will take in Venice, Trieste, Agram, Sofia, Constantinople, Mitylene, Smyrna, Athens, Eleusis, Olympia, and Corfu, the final meeting to be held at Evian.

The Faculty of Medicine of Paris.

By a decree rendered Jan. 31st, on the recommendation of the Minister of Public Instruction and the Superior Council of Public Instruction, it is declared that the organisation of the practical school of the Faculty of Medicine of the University of Paris and the regulations relating to the nomination and to the attributions of its *personnel* are determined by ministerial decrees made in the permanent section of the Superior Council of Public Instruction after consultation with the Council of the Faculty, and that all contrary dispositions of preceding regulations are, and remain, repealed. On the other hand, the Minister of Public Instruction has addressed to the Vice-Rector of the Academy of Paris a circular relative to the reopening of the Faculty of Medicine. This will be reopened for students of medicine of the first and second years on March 1st next. According to the proposals addressed by the Vice-Rector, together with the Dean of the Faculty of Medicine, the Minister has decided that second-year students shall be called on to take up practical work at dissection from March 1st, and to continue it during March and April. During this period anatomical demonstrations will be made three times a week by an *agrégé* of the Faculty. The time of the first examination will be, as an exceptional measure, postponed for them from March to May, the date to be fixed by the Dean. For first-year's students practical work at anatomy will begin in 1912–13, not on Nov. 3rd, but on Oct. 1st, and if necessary it will be continued beyond Feb. 28th following. The Minister hopes that circumstances will permit these students to take the first examination at the ordinary date in 1913. Students of this class will be allowed to enter for the posts of residency at the hospitals at the usual dates conditional upon being properly "signed up."

The Medical Men's Art Salon.

The third medical salon will be open from March 12th to 24th next in Paris. As on former occasions, all professors, practitioners, internes, and students are permitted to exhibit paintings, sculpture, water-colours, engravings, pastels, designs, and decorative art. This year a section will be devoted to medals and *objets d'art* bearing some relation to medicine.

Feb. 20th.

BERLIN.

(FROM OUR OWN CORRESPONDENT.)

Dissatisfaction among Medical Students in the University of Breslau.

ANATOMICAL study in the University of Breslau has of late been interfered with by the existence of very strained relations between the students and the professor of anatomy. The students some time ago complained to the Minister of Public Instruction concerning certain proceedings in the State examinations and their personal treatment by the professor. The Minister succeeded in pacifying the students for a time, but they have again become highly incensed on account of a line of action which the professor has now taken. He had the doors of his lecture room closed at the beginning of his lectures, so that late comers could not enter, and he refused to give certificates to those who had complained, so that they could not apply for admission to the State examination. These restrictions led the students to adopt a course not unusual in Russia, but hitherto unknown in Germany, the result being that they boycotted the professor so that when he intended to deliver a lecture on topographical anatomy he found the amphitheatre empty. The Dean of the Medical Faculty tried to conciliate both parties, and after the professor had explained his motives at a meeting of the students the boycott was stopped on condition that the professor resigned his position as a member of the examination board. He has now reached an advanced age and will probably soon resign his University appointment altogether, because his behaviour has created some prejudice against the University of Breslau, and the number of medical students has considerably decreased there.

The Relation of the Wassermann Reaction to Lead Poisoning.

Some recent observers using the Wassermann reaction have obtained positive results in certain cases of lead poisoning, a circumstance which if true would have certainly an important bearing on the value of this reaction from a clinical and theoretical point of view. In a recent number of the *Deutsche Medizinische Wochenschrift* Dr. Hilgermann, medical officer of the city of Coblenz in Rhenish Prussia and chief of the public laboratory there, published a series of observations made by him on workmen of the extensive lead and silver smelting works at Braubach, in the neighbourhood of Coblenz. He examined 34 cases of acute, subacute, and chronic lead poisoning, with typical symptoms, including anæmia, pain in the joints, polyneuritis, paresis of the radial nerves, and Bright's disease. A typical line of blue was always present in the gums. The result was that the Wassermann reaction was negative in every case, and Dr. Hilgermann concluded that this reaction must be regarded as characteristic of the presence of syphilis. It was probable that in the cases of lead poisoning examined by other medical men who had found a positive reaction the patients had been syphilitic without having been aware of their disease, a fact not very uncommon among the working population. Moreover, the modification of the reaction

devised by Dr. Stern, and frequently used by various medical men, might be regarded as not absolutely reliable; at any rate, Dr. Hilgermann, working strictly in accordance with Professor Wassermann's directions, has come to contrary results.

Medical Certificates for Motorists.

The Secretary of State for the Home Department has recently issued new regulations concerning the medical examination of candidates for a certificate as motorists. A sound body and normal powers of hearing and seeing are indispensable; the right arm and leg must be freely moveable; in the case of contractions or loss of single fingers it must be ascertained whether the motorist is able to manage the steering wheel with one hand. A minimum visual power of two-thirds in one eye and of one-third in the other is required. Night-blindness, diminution of the field of vision, paresis of the muscles of the eye, and well-marked strabismus render the applicant unfit for the certificate. Whispering voice must be heard at a distance of at least 3 metres. In the case of persons suffering from tabes, diabetes, or diseases of the chest, the abdominal organs, the great vessels, or the kidneys, the decision will depend on the circumstances of each individual case. When general paralysis is suspected the examination must be repeated after a certain time. Well-marked neurasthenia, giddiness, insanity, and epilepsy, of course, make a person absolutely unfit for motor driving.

Statistical Investigation on Venereal Diseases.

A statistical investigation concerning venereal diseases was lately made in the Duchy of Brunswick, one of the smaller states of the German Empire, with a population of about half a million. A similar investigation had been carried out in the kingdom of Prussia about ten years ago, but whilst in Prussia it occupied only one day, April 30th, it was extended in Brunswick over half a year. Obviously the latter method, although not practicable for a large country and for many thousands of medical men, but rather easy in a small country, gives more reliable results; and, in fact, the number of patients recorded was greater in Brunswick than in Prussia. The investigation included syphilis, gonorrhœa, soft ulcers, and condyloma. The results were contained in 842 cards returned to the Statistical Office of Brunswick from the medical men and the hospitals of the country. According to the *Deutsche Medizinische Wochenschrift*, the statistical returns show (1) that venereal diseases are found in an alarming number among every class of the population; and (2) that they are relatively more numerous in the towns than in the country, and relatively highest in the only large town of the duchy, the city of Brunswick. In the country districts syphilis is just as frequent as gonorrhœa. Gonorrhœa predominates in the male sex and syphilis in the female sex. The number of married patients is considerable. Prostitution has an essential influence on the spread of venereal diseases. Of the male patients, 35·4 per cent. were workmen, and 22·3 per cent. were tradespeople, the remainder including State officials, soldiers, members of the higher professions, &c. In the latter class syphilis is especially prevalent, while in the other two classes gonorrhœa predominates. Of each 10,000 of the population, 39·1 in the city of Brunswick, 10·8 in the other towns, and 3·6 in the country were venereal sufferers. Obviously venereal diseases are more easily spread the more dense the population. The greatest number of syphilitic patients was recorded for women in the age between 20 and 25 years, and in men in the age between 25 and 30 years.

Club Practice in Germany.

The Supreme Court of Appeal of the German Empire has now pronounced its decision in a conflict which broke out nearly seven years ago between eight sick club doctors and the club authorities. In September, 1905, the doctors of the town sick club of Remscheid resigned their duties in a body, and the reasons given for this step afford an apt illustration of the unfortunate position in which many club doctors in Germany are placed owing to the authority vested in the committees managing these bodies. The doctors based their step on the fact that the actions of the committee placed them in a position derogatory to their professional dignity, and therefore made it incompatible for them to continue their duties. The committee arbitrarily imposed fines, or, indeed, made deductions from their remuneration for alleged infringements of certain rules drawn up by the committee. Further, all prescriptions were submitted to a rigorous revision with a view of controlling the cost of treatment, and the doctors were compelled to prescribe as cheaply as possible, the rules drawn up for prescribing being such that in many cases the enforced cheap method of treatment ran counter to the interests of the patients. On the other hand, when asked to give certificates entitling the members of the club to draw pensions provided by the Imperial funds they were expected to make statements in favour of the applicant's claims. The sick club authorities asserted that here the action of the doctors had caused an extra expenditure of £5250 to the club, and claimed the payment of this amount from the doctors. In the first instance the doctors won, the court expressing the opinion, *inter alia*, that the fact that they had given up an assured position under the club for an uncertain future was proof of the existence of conditions which rendered a continuance of their duties, in the circumstances, practically impossible. The club committee appealed against this judgment, and in the higher court won the case, the decision being principally based on the view that the doctors should have awaited the decision of the arbitration board provided by the rules of the club for dealing with disputes between the medical attendants and the committee. The matter was then brought before the Reichsgericht in Leipsic, which has now referred the case for retrial in the lower court, this decision being based on the view that the evidence abundantly proved the existence of unsatisfactory conditions in the management of the club.

Feb. 17th.

BUDAPEST.

(FROM OUR OWN CORRESPONDENT.)

New Views as to the Pathology and Treatment of Tuberculosis.

IN the year 1909, on the occasion of the International Medical Congress held at Budapest, Dr. Joseph Hollós, pathologist to the County Hospital in Szeged, wrote a book entitled "The Tuberculous Intoxications." He read portions of it at the meeting and delivered an address on the subject, but neither his book nor his address made any great impression. His views were so heterodox that most of his hearers turned deaf ears to his arguments. At the same time he published in a German periodical an article which attracted the attention of Dr. Poncet, a well-known professor in the University of Lyons. Dr. Poncet entered into communication with Dr. Hollós and persuaded him to have a French translation of his book published in Paris. Dr. Poncet himself wrote a preface to this work, and has eulogised it in several addresses delivered by him before the Paris Academy of Medicine. Other speakers have discussed it at meetings of the Paris Medical Society and in other scientific assemblies. The interest taken by leading French medical men in the work of Dr. Hollós was further shown by the fact that a year ago he received an official instruction from the Paris Academy of Medicine to compete with his book for the valuable Audiffred prize.

On account of the favourable reception which was given to Dr. Hollós by the French medical profession the Hungarian Minister of Public Education sent him at the expense of the State to study in France and Germany for half a year, and during this time he wrote another book entitled "Therapie der latenten und larvierten Tuberculose" ("The Treatment of Latent and Masked Tuberculosis"). This work has been published by T. F. Bergmann in Wiesbaden, with a preface written by Professor Carl Spengler, of Davos in Switzerland. The principal points of it are as follows. The latent tuberculous foci of the organism create in it a certain degree of immunity, in consequence of which the organism develops a high quality of sensitivity against its own toxins. As a result of this sensitivity to the toxins the organism reacts with various symptoms, which manifest themselves by certain nervous phenomena, by disorders of metabolism, by anæmia, and in particular by chronic headache, frequent fainting, loss of appetite, cardialgia, increased or decreased secretion of the gastric fluid, habitual constipation, diarrhœa, abnormalities of sleeping and dreaming, and sensations of great fatigue, particularly in the morning. The patients also suffer from decreased mental and bodily activity, from various

nervous and cardiac troubles, chiefly palpitation and tachycardia, from night sweats, from many different disorders of menstruation, and from rheumatic pains in the joints. The greater the degree of immunity the more pronounced are these symptoms, one or the other of which (and sometimes all of them) may last for years. Such cases are for the most part erroneously diagnosed as anæmia, or neurasthenia, or hysteria, or various neuroses.

These examples of the latent stage of tuberculosis respond very well to antituberculous treatment, and they mostly end in complete recovery. If the immunity, and together with it the sensitivity to the toxins, diminishes from any cause whatever, then also these symptoms cease spontaneously, but the disease progresses into manifest pulmonary tuberculosis, and in this way the above-mentioned symptoms very often form the first stage of that disease. If the pulmonary tuberculosis presents itself as such in the first instance and is neither preceded nor accompanied by symptoms indicative of toxic action, then from this it may be concluded that the immunity was insufficient and that the prognosis is bad. Dr. Hollós also believes that goitre is in the majority of cases of tuberculous origin, the toxins of the latent tuberculosis producing the hypertrophy and abnormal function of the thyroid gland.

In numerous cases the administration of immune bodies resulted in entire and final recovery. Dr. Hollós has used this specific method of treatment in more than a thousand cases and has made careful notes of all of them. The patients under his care were without exception treated with Spengler's serums—namely, the smaller half of them with tuberculin (on the ground of the dualistic therapy) and the larger half with the "Tuberkulose Immun-Körper."[1] It is noteworthy that Dr. Hollós succeeded in either intentionally provoking all the above enumerated symptoms or in increasing their severity when they already existed simply by the use of artificial toxins, and at the same time in stopping them when he so desired. Of the patients treated with the specific method some have wholly recovered, but the greater part relapsed after a period varying from three to six months and even longer. It has, however, to be remarked that the relapse was not complete in all the cases, because there were some instances wherein the patients originally suffered from three or four symptoms, and when they had a relapse after six months they now suffered from only one or two symptoms. The advent of the relapse is an indication that specific treatment must be resumed. According to Dr. Hollós, the Immun-Körper treatment produces results far surpassing those obtained with tuberculin and climatic treatment. The key to success is the proper individualisation of the cases, and for this purpose it is necessary to pay the most careful attention to the toxic symptoms.

I have no knowledge how far in England either the theories or the practice enunciated above have received trial or obtained support.

Feb. 13th.

NOTES FROM INDIA.

(FROM OUR OWN CORRESPONDENTS.)

A Women's Medical Service for India.

As the *Times* has recently published a series of letters, mainly from women doctors, pointing out the urgent need of adequate provision for the medical necessities of Indian women, and in an article recently published urges the establishment of a female side of the Indian Medical Service, it may be interesting to give the readers of THE LANCET some idea of how this proposal is received in India. The *Civil and Military Gazette* devotes a leading article to the subject which may be taken to represent lay opinion on the matter. It is pointed out that it is hardly necessary to labour the urgency of the need, or the utter inadequacy of existing provisions for medical aid to women in this country. There are about 150,000,000 women in India, and at least two-thirds of these have the most profound objection to be treated by male doctors. To meet the needs of these millions there are about 400 fully qualified medical women in India, about half of whom are missionaries, and the remainder mostly connected with philanthropic or charitable institutions.

The problem of lessening the burden of sickness and suffering amongst Indian women has never yet been seriously faced, and it cannot be solved either by the private enterprise of medical women or by any unofficial and philanthropic agencies such as the Dufferin Fund. The Dufferin Fund and the mission hospitals alike do excellent work up to the limit of their capacity, but they cannot supply more than the smallest fraction of the need. Even the Dufferin Fund, which has received assistance and moral support from Government, lives up to the limit of its resources, and it was acknowledged in the last annual report that the pay and prospects offered to women doctors are alike inadequate, but cannot in present circumstances be increased. Moreover, the Dufferin Fund employs, not the thousands of women doctors who are needed, but 47 women doctors of the grade, 92 assistant surgeons, and 670 hospital assistants. Under the existing rules of the Fund the pay is small and stationary, there is no provision for pension, the tenure of appointments is precarious, and even furlough is not in some cases guaranteed. Such precarious conditions are incompatible with good work, and the hardships are not minimised by the fact that working side by side with the women doctors are Englishmen with the same professional qualifications who enjoy the protection of a recognised Government service, with assured work, adequate and progressive pay, and furlough and pension guaranteed. If the Dufferin Fund with all the prestige attaching to it cannot provide its women doctors with a career that satisfies, it may be taken for granted that the task is beyond the resources of unofficial agency.

In any case, there is no possibility that any such agency could create an organisation so widespread as to meet the need of India. The creation of an adequate State service would be difficult, and it would be costly, though it could be inaugurated on a modest scale and developed as funds became available. Twenty-five years ago, or even less, a proposal to establish such a service might have been received with sullen objections if not with open and vigorous opposition. But the patient work of the Dufferin and mission hospitals has to a very large extent broken down Oriental prejudices and developed widespread appreciation of the benefits of Western medical science. In practically all the Dufferin Fund reports we read of the demand for increased accommodation, and especially for more *purdah* wards, for the women of India have learned to appreciate the value of skilled nursing and medical treatment by members of their own sex. It is believed that the initiation by Government of a medical service for women would be welcomed by all classes in this country, and the possibility of creating such a service is certainly worth careful and impartial consideration.

In this relation it may be pointed out that a council meeting of the Association of Medical Women in India was held in Ludhiana last month. A letter was sent to His Excellency the Viceroy urging the necessity for a properly organised Government service of medical women in India. A memorial was forwarded to Her Excellency Lady Hardinge petitioning for the formation of college hostels for women students in all the university cities where mixed education is carried on in India. It was pointed out that such hostels have been at work most successfully in all the large educational centres in England for very many years. Each hostel should be under the guidance and control of a lady warden, who should be experienced in educational methods, should be attached to the professional staff of the teaching institution, and when possible should herself have a university qualification. The council of the association, while admitting that there are numbers of women whose social and religious customs prevent them from making use of these centres of mixed education, is of opinion that the formation of such hostels, which would be designed for the reception of students of arts, law, science, and medicine, would very greatly help to attract women of the higher social ranks both amongst Indians and the domiciled community. A note was sent to the Director-General, Indian Medical Service, begging for the appointment of women inspectors who should inspect the work and conditions of life of all medical women, especially of the lower grades in remote districts. The council thinks

[1] See THE LANCET, Sept. 16th, 1911, p. 838.

that the appointment of such inspectors, the need for whom has so long been recognised in the educational department, would do much to improve the character of the medical work, and to alleviate the scandals which arise from time to time among the lower ranks of the female medical profession. The council welcomes the inquiries that the honorary secretary of the Countess of Dufferin's Fund is making bearing on the improvement of the class of medical women working under the fund, and considers that the standard of the preliminary examination should be raised. It strongly deprecates requiring a shorter period of training or a lower standard of examination from women than from men, and considers that no scholarships for medical training should be granted except on the results of competitive examinations. The character of successful candidates and their general fitness for the profession should, however, be carefully scrutinised before scholarships are actually awarded.

Lucknow Medical College.

The new medical college at Lucknow, the foundation stone of which was laid at the end of 1905 by His Majesty King George as Prince of Wales, and the construction of which is now complete, was opened with due ceremony by Sir John Hewett, Lieutenant-Governor of the United Provinces, on Jan. 25th. A large gathering of prominent gentlemen of the provinces and many ladies assembled on the occasion. The new college and hospital at Lucknow have been erected as a memorial of the visit of the King-Emperor and the Queen-Empress to India in 1905–06. A memorial was started for the purpose, and the total reached close on £80,000. The full cost of the project, of which only the college is so far finished, is estimated roughly at £200,000, the balance having been provided with the assistance of the Government of India and the local government.

The Prevention of Malaria.

The committee of the Bombay corporation appointed to consider Dr. C. A. Bentley's report on malaria in Bombay has presented a report. As a result of this the corporation has sanctioned the expenditure of an annual sum of nearly £5000 for a special staff.

Jan. 30th.

UNITED STATES OF AMERICA.

(FROM OUR OWN CORRESPONDENTS.)

Modifying the Milk Regulations.

THE severity of the regulations of the Department of Health regarding the quality of milk to be sold in New York has undergone some modification, as it was found impossible to enforce them without at the same time permitting an increase in the price of milk, an event that would have caused great hardship. The new regulations, adopted on Jan. 4th, are as follows:—

Section 56 *a*.—All milk held, kept, offered for sale, or sold and delivered in the city of New York shall be so held, kept, offered for sale, or sold and delivered under either or any of the following grades or designations and under no other, and in accordance with such rules and regulations as may be adopted by the Department of Health—namely:—

Grade A, for Infants and Children.—1. Certified or guaranteed milk. 2. Inspected milk (raw). 3. Selected milk (pasteurised).

Grade B, for Adults.—1. Selected milk (raw). 2. Pasteurised milk.

Grade C, for Cooking and Manufacturing Purposes only.—Raw milk conforming to the requirements for Grades A and B, not condensed skimmed milk; condensed or concentrated milk.

The provisions of this section shall not apply to buttermilk, or to milk products commonly known as kumyss, matzoon, zoolak, dried milk, or milk powder, or to other similar preparations, or to cream or modified milk.

Special permits are required for the sale of any grade of milk, the only exception being condensed milk sold in hermetically sealed tins.

Lowered Death-rate.

The Department of Health of the city of New York has made public its calculations regarding the death-rate for 1911, which is 15·13 per 1000, surpassing the excellent figure attained in 1910, when it was 15·98, the lowest in the history of the city up to that time. There were 134,542 births in the city during 1911, and 48,765 marriages; the total deaths were 75,243, over 13,000 less than the average for the whole decennium.

Gift to the New York Academy of Medicine.

Mrs. E. H. Harriman, widow of the late railway millionaire, has made arrangements to permit the Academy of Medicine, the representative professional organisation of the city, to undertake a work which in health matters will, as it were, parallel the activities of the Bureau of Municipal Research in financial matters. She has employed a trained statistician to carry out the practical details of the work of a medical committee. Among the duties of this committee are to collect facts in regard to public health, sanitation, and hygiene; to establish coöperation among all the health organisations of the city; to keep the profession advised of current health conditions; to render authoritative opinions on health matters to the public schools, health departments, and the public generally; and to make close and constant scrutiny of the hospitals and dispensaries of the city.

A Successor to Dr. Walter Wyman.

The vacancy caused by the death of Dr. Walter Wyman, Surgeon-General of the Public Health and Marine Hospital Service, has been filled by Dr. Rupert Blue, of South Carolina, who has been connected with the service for many years and is distinguished on account of his success in abolishing plague from San Francisco. In making the appointment the President has announced that it is for four years only, instead of for life as heretofore.

Increased Manufacture of Liquor.

The year 1911 has been a record year for the manufacture of alcoholic beverages, surpassing the hitherto unapproached figures for 1907. The year's production of distilled spirits amounted to 175,402,395 gallons, and that of beer and ale to 63,216,851 gallons. The amount of liquor now held to ripen in bonded warehouses is 249,279,346 gallons.

Typhoid Prophylaxis.

An example which will probably be quickly followed by all other militia regiments in the country has been set by the Seventy-first Regiment, National Guard of the State of New York, the officers and men of which were inoculated against typhoid fever last week with serum obtained from the medical department of the regular army. All officers and enlisted men of the army under the age of 45 years are now inoculated, and all recruits enlisting henceforth will be obliged to submit to the prophylactic vaccination.

Christian Science on the Isthmus.

The President has issued an order permitting Christian Scientists to practise their form of healing in the Canal Zone.

Mortality from White-lead.

A bulletin issued by the State Bureau of Labour of New York states that there were 60 deaths from poisoning with white-lead during the past year. Of the 60, 37 were painters, 8 were labourers, 4 were printers, and 2 were merchants; there was 1 each among machinists, moulders, smelters, tinsmiths, salesmen, brush-drawers, glaziers, porters, and coopers.

Blow to a National Habit.

An order has been issued forbidding the use of chewing gum in the navy. Gum was enormously popular among the "jackies," and was sold in immense quantities from the ships' stores. Captain W. F. Fulham, of the U.S.S. *Mississippi*, drew the Navy Department's attention to the interference with discipline caused by this practice, with the consequence that the gum was ordered to be no more sold or used on board ship. The popularity of gum-chewing in America has been attributed to national nervousness and other causes, the most probable of which is the great dryness of the atmosphere.

Acute Poliomyelitis.

The number of deaths from acute poliomyelitis in the United States Census Bureau's death registration area in 1910 was 1459, as compared with 569 in the previous year, the first year in which the disease was differentiated from the other diseases of the spinal cord. The death-rates per 100,000 of population for 1910 and 1909 were 2·7 and 1·1 respectively. In 1910 the largest number of deaths (310) was registered for the month of September, while in 1909 the

month of maximum mortality from acute poliomyelitis was October. The deaths of males exceeded those of females in both years, but in a somewhat larger proportion during the year 1909.

Increase in Insanity.

There are now 37,303 more cases of insanity in the United States than there were six years ago. While the total population has increased 11 per cent. in that time, the increase in insanity amounts to 25 per cent. Massachusetts, of which the chief city is Boston, leads with 344·6 insane per 100,000 population, with New York State a close second with 343·1 per 100,000.

Epidemic of Cerebro-spinal Meningitis in the South-West.

Cerebro-spinal meningitis is present in epidemic form in many districts of the South-Western States of America. The disease has been prevalent in parts of Texas for some time, and is reported to be now spreading in Oklahoma. In Springfield, Mo., there have been several cases. A detention camp has been established in Shreveport, La., for persons coming from the infected districts of Texas, while officers of the Public Health and Marine Hospital Service are coöperating in Texas with the State Department of Health in fighting the disease.

Increase of Street Accidents in New York.

According to a report issued recently by the National Highways Protective Society deaths due to vehicular traffic during January, 1912, in the streets of New York City show an increase over the same month last year. In January, 1911, 22 persons were killed in street accidents, whereas in January last 29 met their death in a similar manner. Motor-cars caused the death of 11 persons, electric street-cars caused the death of 10, while wagons killed 8. 219 people were injured during the same month.

National Control of Quarantine of the Port of New York.

At a recent meeting of the New York Academy of Medicine several speakers advocated the establishment of national quarantine for the port of New York. At the present time New York, Boston, Providence, and Baltimore are the only quarantine stations in the country that are not controlled by the Federal Government. The consensus of opinion of the meeting seemed to be that the inclusion of these ports under national control would be in the interests of public health. Prominent among the speakers who urged the adoption of the project was Dr. Leland E. Coffer, assistant surgeon-general of the United States Public Health and Marine Hospital Service.

Instruction of the Laity.

A series of 45 lectures has been arranged to be given at the New York Academy of Medicine by well-known medical men in the city to audiences of laymen. These lectures, which are being largely attended, are likely to prove of great educational value. They take up nearly all the modern problems of the profession and the newer methods of treatment by vaccines and so on, the questions of alcohol and narcotic drugs, the care of the newborn, the peril of venereal disease, and other subjects.

New Hospital Buildings.

The new buildings of the New York Post-Graduate School and Hospital greatly increase the facilities of the institution. The additions include new operating rooms and wards for both paying and non-paying patients; there is also an immense increase in the surgical armamentarium. There are 480 rooms in the new building, which has cost over £300,000. The Mount Sinai Hospital received over £89,000 during the past year, a considerable part of which will be spent on the completion of the new pathological laboratory now in process of erection. A hospital for sick animals will soon be realised, over £16,000 having been raised by the New York Women's League for Animals in the last two months, £5000 of this amount coming from one enthusiast.

Official Exoneration of Dr. Wiley.

The house committee on expenditures in the Agricultural Department in its recent report to Congress completely exonerated Dr. Harvey W. Wiley as far as the accusations brought against him for malfeasance in office were concerned.

Proposed Action in Regard to Fee Splitting.

In a report to the Board of Regents of the State of New York the State Commissioner of Education has recommended that drastic action be taken, even to the revocation of licences of those found guilty, to prevent the splitting of fees between the general practitioner and the surgeon or consulting physician. The Commissioner cites the report of the Erie County Medical Society on the subject of fee-splitting, which that society reported to exist among its members to a deplorable extent, and suggests to the legislature that it consider the advisability of amending the law to prohibit a consulting physician or surgeon from paying fees to another practitioner for bringing him "business" without making the fact of such payment known to the patient.

Feb. 8th.

Obituary.

SIR WILLIAM HENRY ALLCHIN, M.D. LOND., F.R.C.P. LOND., F.R.S. EDIN.,

PHYSICIAN EXTRAORDINARY TO THE KING; CONSULTING PHYSICIAN TO WESTMINSTER HOSPITAL.

By the death of Sir William Allchin, which took place on Feb. 8th after a long illness, the medical profession has lost a sagacious and indefatigable leader who by his personal labour and his influence added much to the general progress of medicine. In the administration of the Royal College of Physicians of London he had been a source of strength for many years, while as an authority on the intricate subject of the constitution of the University of London he had no rival.

Born in Paris on Oct. 16th, 1846, Sir William Allchin was the eldest son of the late Dr. Allchin, of Bayswater, and was descended from old Kentish stock. After being educated privately he entered as a medical student at University College, London, where his progress was marked by the same thoroughness which characterised his later life. In 1869 he qualified by taking the Membership of the Royal College of Surgeons of England and the Licentiateship of the Society of Apothecaries of London, and two years later he graduated as Bachelor of Medicine at the University of London, gaining the Scholarship in Medicine and the gold medal. In 1878 he became a Fellow of the Royal College of Physicians of London. His early medical career was associated with University College and its attached hospital, and he was at one time lecturer on comparative anatomy and animal physiology at University College, but it was at Westminster Hospital that he obtained the experience upon which the work of his life was based. Here as assistant physician and afterwards physician, joint lecturer on the principles and practice of medicine, dean of the medical school, and emeritus lecturer on clinical medicine, he became known among his contemporaries and his pupils alike as a singularly able teacher with a gift of organisation and a passion for work. These qualities led to his election to the Senate of the University of London, and to his appointments upon the Consultative Board of the Medical Service of the Royal Navy, as well as of the Army and Indian Medical Services. He was also appointed examiner in medical subjects in the Universities of London, Durham, and Glasgow, and at the London Conjoint Board at different times—a record of popularity among examining boards which would be very hard to beat.

His literary and oratorical powers kept pace with his practical experience, and he delivered many public addresses of genuine merit. The official lectures which he gave from time to time in connexion with the Royal College of Physicians of London and different learned societies, connected or not with the medical profession, were always marked by thoroughness, conciseness of statement, clearness, and judgment, four things which made his lectures and addresses valuable supplement to our knowledge of medicine or sociology. In the Bradshaw Lecture on Duodenal Indigestion, which he delivered in 1891 before the Royal College of Physicians of London, he mapped out the outlines and broad features and laid down a course for further study of an obscure and important subject in accordance with the then physiological knowledge and the prevailing conceptions of pathology. In 1896 he delivered the annual oration before the Medical Society of London, of which he was one-time president and for 18 years an admirable librarian. This address, entitled "The Breaking Strain," dealt with the subject of death and its cause. "A review of all

the circumstances would seem to show," he said, "that failing vitality follows the cessation of reproductive capability rather than that this latter fails because of approaching death, and, if we may speculate with others, it appears to be among the possibilities that the lacking stimulus is to be found in connexion with the sexual elements themselves—some ferment, may be, such as we assume to exist in these lately recognised internal secretions, the potency and influence of which in respect to nutritive processes we are but just gaining a glimpse of." Suggestive ideas and bold conceptions of this sort were common in his conversation and public utterances.

In 1897 he delivered the address at the Hunterian Society on Some Relationships of Indigestion, setting forth some considerations which he thought were essential preliminaries to the formation of a diagnosis and a rational treatment of indigestion. The Study of Structure in Relation to Function was the subject of the Harveian Oration which he delivered in 1903, and the following remarks with which he concluded the oration are important as showing again the wide range of his conceptions.

> While I have endeavoured to illustrate with such completeness as my brief time permits the relationships of physiology to anatomy, whether normal or morbid, the general tenour of my remarks will have indicated that when the limits of visibility, even with our most perfect instruments, have been reached the separate investigation of structure and of function no longer becomes possible. The molecular constitution, chemical or electrical, of living matter becomes conceivable only in terms of action, and function and structure are but aspects of each other. No deeper secrets of nature exist to be searched out by observation and experiment than these, and none will more benefit mankind in their discovery.

In the Lumleian lectures which he delivered in 1905 on Nutrition and Malnutrition there is an elaboration of his earlier thoughts on the subject of the cessation of vitality. In these lectures he summarised some of the problems in the biochemistry of nutrition, and succinctly declared that as it appeared to be possible by the application of certain electrolytes to avert from a living ovum what may be termed its natural death, the degeneration and death of the tissue cells of higher organisms might be averted; at any rate, a search in this direction should no longer be looked upon as a hopeless quest."

"A Manual of Medicine," in five volumes, edited by Allchin, appeared, the first volume in 1900 and the last in 1904. He himself contributed articles to these volumes, which were all stamped by a high level of excellence. Among his other contributions to the literature of medicine, in addition to the last-named manual, were articles on Disorders of Digestion and Diseases of the Intestines in "Quain's Dictionary of Medicine," on Diseases of the Stomach in "The Encyclopædia Medica," and Diseases of the Peritoneum in "Allbutt's System of Medicine." Besides these he contributed many articles to THE LANCET, the West London Hospital Reports, and "Keating's Cyclopædia of Diseases of Children." In 1908 he published "Methodus Medendi."

Sir William Allchin married Margaret, eldest daughter of Alexander Holland, of New York, in 1880, and was created a Knight in 1907. In March, 1909, his friends and old pupils presented him in the board room of Westminster Hospital with his portrait as a mark of their high regard.

Dr. de Havilland Hall, for many years Sir William Allchin's colleague on the staff of the Westminster Hospital, bears intimate testimony to qualities which we have only indicated above in a summary of Sir William Allchin's work. He writes:—

"Allchin was a born organiser, and had such powers of administration that he would have made an excellent Secretary of State. At the Coronation of King George V., all the medical arrangements in Westminster Abbey were under his supervision, while he also undertook the distribution of seats in the vast stand erected by the Westminster Hospital. Both these tasks were carried out with his usual tact and thoroughness, and to the entire satisfaction of all concerned. The outstanding feature in his character illustrated in such undertakings as these, was his unswerving adherence to what he considered his line of duty. This was particularly shown on the occasion of his resigning the post of assistant registrar of the Royal College of Physicians of London, at the time when the majority of the Fellows decided upon a plan of action in regard to the University of London which he considered unwise. He took this step so that, being relieved of responsibility, he might regain the freedom to pursue such course as might seem desirable to him in the circumstances, and in doing so he earned the commendation of many Fellows.

"He was an admirable teacher, and his teaching was much appreciated by the students of the Westminster Hospital He impressed upon them by precept and example the necessity for a thorough investigation of every patient coming into the wards. Though he never laid himself out to coach men for examination purposes, his large experience as an examiner naturally influenced his teaching. He was fair as well as loyal, and one of the first before whom all difficulties, whether of scientific or administrative sort, were laid by his colleagues.

"Allchin did not make friends easily, as he had a certain degree of reserve in his manner, and he was very reticent in expressing his deeper feelings, but those who had the privilege of his friendship could rely upon him, and even acquaintances realised that he was a man to be respected and trusted, But reserved as he certainly was, he was the most admirable and generous of hosts. There was nothing he enjoyed more in recent years than walking about the lanes of his ancestral county of Kent and inspecting all the interesting churches or buildings that he encountered. It was a source of great pleasure to him when he was able, some years ago, to acquire a delightful old black and white house at Plaxtol. This he restored with taste and judgment, and he seemed to have no greater pleasure than welcoming his friends there. He was a charming host, full of conversation, and he had the power of adapting himself to the capacity of his listener. Not only in the country did he exercise his hospitality. In London he gave dinners on a large scale at his clubs—the Athenæum and Conservative—where he entertained the leading men in medicine, science, and the arts. He was much impressed with the useful effect of men of different views meeting at dinner and airing their ideas, and one of the best things he ever didfor the Westminster Hospital Medical School was instituting the school and staff dinner. The members of the staff of the school and hospital dine together three times a year, and this opportunity of friendly intercourse has had a powerful influence in securing the harmonious coöperation of the staff in the work of the school and hospital. Allchin was the first secretary to the club, which has now been carried on for 40 years.

"The affectionate regard in which he was held was testified by the large number of friends who assembled at East Malling on Thursday, Feb. 15th, to see him laid to rest by the side of his grandfather, also William Henry Allchin."

An old friend and pupil writes:—"To all old Westminster men the death of Sir William Allchin will come as a grievous shock, for no man ever worked harder for his hospital than did the late Sir William. Courteous and dignified, he was indeed the type of what a consultant physician should be. No one ever heard him utter a derogatory word of a brother practitioner, and I am equally sure that no brother practitioner ever spoke slightingly of him. It is, however, of his unique powers as a clinician that I would speak. His early morning cliniques on a Friday were truly *sui generis*. Sir William would not take his class perfunctorily round his beds, but would select one or two cases to demonstrate for the two or three hours that he was in the hospital. These cases would be gone into most minutely, so that no one could leave the clinic without having learnt something of importance for his own practice. By question and answer, and by illustration from the rich store of his own personal experience, the students would have instilled into them all the essential features of the case. He was the possessor of the gift of a quaint genial raillery which never wounded the feelings of anyone at whom it was directed. Westminster men must of a surety have been well grounded in the science and art of medicine by their old teacher, for Allchin was completely familiar with up-to-date pathology of disease in all its aspects, at the same time that he was a master of the practice of his profession. May the earth lie lightly upon him, now that his labours are finished."

GERHARD HENRIK AMAÜR HANSEN.

THE death is announced of Dr. Gerhard Henrik Amaür Hansen, whose name is associated with the discovery of the bacillus of leprosy. Dr. Hansen was born on July 29th, 1841, and he early made his name as an authority on leprosy in its clinical aspects. In 1873 several years of laborious investigations were rewarded by his discovery of the bacillus of leprosy,

the recognition of which formed the basis of rational treatment of this disease for the first time. But though Hansen's bacteriological work brought him international fame and honours, his clinical and legislative work were even more appreciated in Norway, where his vigorous and untiring efforts to stamp out the disease were rewarded with striking success. Leprosy, which had been a national scourge on the west coast, became in the course of a few decades a rare and unfamiliar complaint. At the close of the nineteenth century the hospital accommodation for leprosy so far exceeded the needs of the nation that one of the large hospitals near Molde was converted into a sanatorium for consumptives, and within the last four years a further reduction of hospital accommodation for lepers has been contemplated. In 1909 Hansen's system for the control of leprosy was unanimously admitted to be the most satisfactory in practice by the members of the Second International Leprosy Congress in Bergen, and he was elected as Virchow's successor to the vice-presidentship of the International Leprosy Committee. Although his work on leprosy occupied much of his time, his interests were numerous, and he was particularly devoted to the study of evolution and Darwin's theories, of many of which he was a keen supporter. His publications on leprosy alone are very numerous and in many languages. His advanced years were no hindrance to a life active till the last, and he was travelling on the west coast of Norway at the time of his death. He had retired on the evening of Feb. 11th, and on the following morning he was found dead in his bed. His many friends, both at home and abroad, will learn with sorrow of his death, which robs Norway of her most distinguished scientist of the present day.

RICHARD LINGARD STOKES, M.R.C.S. ENG., L.R.C.P. LOND.

THE death is announced at Ditchling, nestling at the foot of the Southdowns in Sussex, of Mr. Richard Lingard Stokes, and the mere fact that he had practised there for over 30 years is evidence enough to show that he will be greatly missed. Son of Mr. Lingard Stokes, of the Indian Civil Service, he was born in Worcestershire 58 years ago, and was educated at Cheltenham and Oakham Schools. Passing on to the University College, London, he became M.R.C.S. in 1877 and L.R.C.P. in 1878. He was married at Maidenhead a year later and settled at Ditchling. He held a number of public appointments, and took quite an active interest in the affairs of the village and the immediate district. In his younger days he was a keen cricketer. He, too, was very fond of music, and in this connexion was always to the fore with his wife in local musical gatherings. His health had given cause for anxiety for some time.

DEATHS OF EMINENT FOREIGN MEDICAL MEN.—The deaths of the following eminent foreign medical men are announced: Dr. Julius Pagel, extraordinary professor of the history of medicine in the University of Berlin, aged 60. In early professional life he held Poor-law and school appointments in Berlin. During this time he applied himself to the study of the historical aspect of medicine, and was fortunate enough to bring to light many mediæval manuscripts which had been until then unknown. After becoming a recognised lecturer on the history of medicine in the University he published numerous works and papers on the history and the ethics of medicine, and contributed to Neuburger's "Text-book of Medical History." He was also librarian of the Berlin Medical Society, and one of the editors of the international review of the history and geography of medicine, *Janus*. He was granted the title of professor in 1898, and in 1902 was appointed extraordinary professor.—Dr. Hermann Jastrowitz, an eminent Berlin alienist, at the age of 72. He was for many years assistant in the mental clinic of the Charité under Westphal. In collaboration with Leyden he published a well-known work on the anatomy of the brain. As a medical orator he was in great request at professional gatherings, and was secretary to the Society of Medicine and Pædiatry.—Dr. L. Benech, formerly inspecting medical officer of the French Military Medical Service.—Dr. E. Caventou, formerly President of the Paris Academy of Medicine.—Dr. von P. Ivanovski, formerly professor of pathological anatomy in the St. Petersburg Military Medical Academy.

THE NATIONAL INSURANCE ACT.

COMMITTEE ON TUBERCULOSIS.

THE Chancellor of the Exchequer is appointing a Committee to report at an early date upon the consideration of general policy in respect of the problem of tuberculosis in the United Kingdom, in its preventive, curative, and other aspects, which should guide the Government and local bodies in making or aiding provision for the treatment of tuberculosis in sanatoriums or other institutions or otherwise.

The Committee will consist of:—

Mr. Waldorf Astor, M.P. (Chairman).

Dr. Christopher Addison, M.P.

Dr. N. D. Bardswell, Medical Superintendent of the King Edward VII. Sanatorium, Midhurst.

Mr. David Davies, M.P., President of the King Edward VII. Welsh National Memorial Association.

Dr. A. Mearns Fraser, M.D., Medical Officer of Health, Portsmouth.

Dr. A. Latham, Physician at Mount Vernon Hospital for Consumption.

Dr. W. Leslie Mackenzie, Medical Member of the Local Government Board for Scotland.

Dr. J. C. McVail, Medical Member of the National Health Insurance Commission (Scotland).

Dr. W. J. Maguire, Medical Member of the National Health Insurance Commission (Ireland).

Sir George Newman, Chief Medical Officer of the Board of Education.

Dr. Arthur Newsholme, C.B., Medical Officer of the Local Government Board.

Dr. James Niven, Medical Officer of Health of Manchester.

Dr. Marcus Paterson, Medical Superintendent of the Bromptom Hospital Sanatorium, Frimley.

Dr. R. W. Philip, Physician of the Royal Victoria Consumption Hospital, Edinburgh.

Dr. H. Meredith Richards, Medical Member of the National Health Insurance Commission (Wales).

Mr. T. J. Stafford, C.B., Medical Member of the Local Government Board for Ireland.

Miss Jane Walker, M.D., Medical Superintendent of the East Anglian Sanatorium, Nayland, Colchester.

Mr. J. Smith Whitaker, Medical Member of the National Health Insurance Commission (England).

The Secretary to the Committee will be Mr. F. J. Willis, one of the assistant secretaries of the Local Government Board.

INCORPORATED SOCIETY OF HOSPITAL OFFICERS AND THE NATIONAL INSURANCE ACT.

A largely attended meeting of this society was held on Feb. 16th in the great hall of St. Bartholomew's Hospital, under the chairmanship of Mr. KERSHAW, to hear an address from Mr. Worthington Evans, M.P., on National Insurance and the Voluntary Hospitals, and to discuss the new Act.

The CHAIRMAN pointed out that one of the functions of the association was to discuss questions of interest to hospital workers with the view of coördinating those interests and securing unanimity of thought and action on questions of hospital policy.

Mr. WORTHINGTON EVANS then delivered an address on the new Act, with special reference to its effect upon hospital workers. The sections specially concerned were 12 and 21. In the first of these sections he defined the sources of income, the first of which depended upon an agreement having been made between the hospital and the society of the insured person, and also depended upon that person having no one dependent upon him. The second was a voluntary payment which might be made in the case of a doubly insured woman, of which latter there would not be many relatively. Under Section 21 there was a possible source of income—namely, that the Friendly Societies and the County Committees might (there was no compulsion) subscribe to the hospitals. The amount which those bodies might subscribe under Section 21 was two-ninths. He pointed out that the Act did not include any hospital benefit; there was a sickness benefit, a disablement benefit, a maternity benefit, a sanatorium benefit, the latter being limited to treatment in sanatoriums for tuberculosis and similar diseases, and such others as might hereafter be

specified. One very important fact stood out—namely, that for every male or female employee of a hospital, the hospital as such would have to make a weekly contribution. In a hospital with 250 beds there would be probably 32 males employed, and 128 females, or a total of 160, and the annual tax payable by the hospital for them would be £104. It seemed odd that these people, surrounded by all the appurtenances for good health, should be expected to be included when they had hitherto received any necessary medical treatment for nothing. He expressed the opinion that the attendance in the out-patient departments of hospitals would be less than hitherto. Some of those who had been in the habit of attending hospital would now be treated privately, and to the class of deposit contributors it would probably make no difference, as these would frequently be out of benefit. But he believed there would be a more numerous demand from in-patients than before. His reasons for saying that were two: It would be discovered that a large number of cases required and deserved treatment in a hospital for conditions which would not have been known of before, and which might have gone on to death without proper skilled attention. Secondly, if a doctor was compelled by contract to take in greater quantities of patients, that doctor would discover which patient was a troublesome person, and he would feel the temptation which the German doctors had fallen into of transferring such patients to a hospital. He did not believe there would be any great reduction in subscriptions to hospitals, but thought that the Act would quicken the public conscience as to the necessities of the less fortunate members of the community. In conclusion, he dealt in detail with the question of finance, and gave the proportions of contributions from working people in two provincial hospitals, the Royal Victoria Hospital at Newcastle-on-Tyne, and the Essex County Hospital at Colchester. In the first of these the income from all sources was £33,000, and the workmen's contributions amounted to £17,000. At the Colchester Hospital out of a total of £954 the workmen contributed £345. He also dealt with the Clapham Maternity Hospital as an example of a charity, one which was recognised as such in so far that the Income-tax Commissioners returned the tax to the institution. He advised that kind of hospital to make arrangements quickly with an approved society which would administer the benefits. With regard to men employed in hospitals, most men were in a society of some sort, so that before hospitals attempted to form a separate society for men they should ascertain whether there was any real demand for such on the part of their male staff. But with regard to the women, there was a special reason for the nurses having a society of their own, especially one with 5000 members or over, for then should there be any surplusage they would be entitled to one-third of it.

After various members had asked questions, Dr. F. J. POYNTON, speaking as a medical man on the staff of a hospital, remarked that a number of medical men on those staffs had signed a pledge not to work under the Act. If the medical profession refused to go on panels he wished to know what the position of medical men connected with large voluntary hospitals would be. As a voluntary worker in a voluntary institution he took it that one would not be technically working under the Act. He asked if some contributions were made to the hospital from insured people, as voluntary workers in that hospital would such doctors be considered as working under the Act? Of course patients were there and must be attended to, but a reply to his question would be very helpful. To this Mr. EVANS replied that the fact of being a voluntary worker almost defined the position. A contribution to a hospital by a Friendly Society was a mere grant; it conferred no rights whatever, and in the absence of any right there was no contract. Consequently a medical man would not put himself in opposition to his pledge by working for a hospital which had obtained such a contribution.

Mr. W. MCADAM ECCLES drew a comparison between the economically-worked State hospital in Germany and the voluntary hospitals of England. In a German State hospital of the same size as St. Bartholomew's, with 600 beds, there were 50 nurses, whereas St. Bartholomew's had 344.

Sir JOHN YOUNG dwelt upon the blessing of English voluntary hospitals and the degree of efficiency and skill attained, and expressed, in vigorous terms, his opinion of the Act and the undue haste with which he contended it had been passed into law.

BRITISH MEDICAL ASSOCIATION: SPECIAL REPRESENTATIVE MEETING.

The fourth meeting of the Representative Body since the introduction of the National Insurance scheme was held in the Court of Common Council Chamber of the Guildhall, London, on Tuesday and Wednesday, Feb. 20th and 21st. For permission to publish the following report from a member of our staff who was present we are indebted to the executive of the Association, who extended the same courtesy to THE LANCET at the previous Representative meetings.

The proceedings opened at 10 A.M. on Tuesday. An extremely heavy and complicated programme was before the Representative Body. Over 370 separate motions, amendments, and riders, mainly arising out of the report of the Council, were upon the agenda paper.

Immediately after the formal business had been concluded, the Chairman of the Representative Body rose to ask for an expression of feeling from the meeting as to his personal position. In order to settle this point at once he desired that a rider standing in the name of the Bradford Division, and numbered 359 on the agenda, should be taken before any other business. Otherwise, with that vote of censure hanging over him, he felt himself unequal to the conduct of the meeting. The rider was: "That Dr. Maclean be asked to resign the chair and a more vigorous advocate of our rights be elected." After considerable discussion it was decided to take this matter first, in accordance with Dr. Maclean's wish. Dr. J. A. Macdonald then took the chair for the time being. Each speaker who supported the vote of censure expressed his personal regret at being compelled to do so, and confined his criticisms to public grounds. No personal allegations whatsoever against Dr. Maclean were entertained. After a close discussion a card vote was demanded and agreed to.

Dr. MACLEAN, speaking in his own defence before the motion was put to the vote, said it had rarely been vouchsafed to any man to have such an opportunity as he had had that day of seeing himself as others saw him. Those members who thought well of him had stated his qualities in a positive sense too highly. On the other hand, he thought those who had taken the contrary view had put his shortcomings rather too strongly. In fact, he had never before realised so strongly the possibilities of one individual possessing the qualities of both Dr. Jekyll and Mr. Hyde. He had no sort of complaint to make as to the tone and content of the debate; it had been worthy of the highest traditions of the Representative meetings, but it also showed that he was right in asking that the matter should be dealt with at the opening of the proceedings. The main points in the indictment against him were first, *suppressio veri* in regard to the speech he made in reference to certain rumours; and second, an alleged misdirection of the Representative meeting. On the first point it was suggested that he wilfully misled the Representative meeting in that he gave the meeting to understand that no question had arisen regarding the possible receipt of an offer to any member of the Association to act as one of the Commissioners. The rumours which were in his mind when he spoke were to the effect that for prospective personal gain of various kinds the officials of the Association had immorally used their official position to give away points in the policy of the Association. No words of his were too strong to repudiate such a charge. Furthermore, he said that every man with whom he had the honour of being associated in the work was absolutely to be trusted in that and every other sense, and he saw no reason whatever to depart from the association of that sentence with what had gone before. As to the suppression of details of the interview with the Chancellor, Mr. Lloyd George inquired as to the Medical Secretary's abilities, and he (Dr. Maclean) gave his opinion. He made a communication to the Medical Secretary after that interview, and, rightly or wrongly, he regarded the conversation with Mr. Lloyd George, with its negative result, as confidential. The question had been put: If that were so, why did he feel called upon to refer to the fact at the Representative meeting? The reason was that the considerations governing the position were that an offer had then been definitely made by the Prime Minister to the Medical Secretary. The question being in a positive phase, when the Medical Secretary placed himself in the hands of the Council he (Dr. Maclean) thought it best to inform the Council of the whole of the

circumstances. As to the alleged misdirection of the Representative meeting, he admitted that, looked at in cold print, his answer to the question as to the duty of Representatives in the circumstances that had arisen was unwise and inaccurate. He confessed he had not the words of By-law 39 (3) in his mind at the time. The Representatives were faced with new facts and they asked what was to be their relation to them. In speaking as he did, he had in mind the margin of discretion left to Representatives in their actions. He left himself entirely in the hands of the meeting in these matters, but to import into either of the two indictments a deliberate attempt on his part to mislead the Representatives or to deceive anybody was very unjust. He knew his shortcomings, but he could say, with an absolutely free conscience, that to the best of his ability he had served the profession faithfully and well. Dr. Maclean added that whatever might be the result of the vote it was absolutely unfounded to suppose that he would be turned from a friend into an enemy; whatever action the meeting took he would deflect never by one iota from the dominant principle that had been in his mind, that he would stand by the cause of the profession and would devote himself in every possible way within the limit of his time and ability to serving the cause of the men whose interests he had at heart.

After an adjournment for the counting of votes the result was announced as follows: For the rider, 63 constituencies, representing 6327 members; against, 78 constituencies, representing 7597 members. The vote of censure was therefore lost. Eight Representatives present did not vote. At 12.30 P.M. Dr. Maclean resumed the chair amidst applause, and asked all present to forget what had just happened and to stand shoulder to shoulder in the face of the present critical situation. Votes of condolence and regret with the families of Lord Lister and Sir Henry Butlin were carried in silence, all standing up. A special Agenda Committee was then appointed to evolve order out of the immense mass of business before the meeting, and a two hours' adjournment was made for this purpose and for luncheon.

On the resumption, business connected with standing orders was disposed of, and the Council's and other reports were formally received. The Representative Body then went into committee under the able chairmanship of Mr. T. Jenner Verrall. The order of business recommended by the Agenda Committee was agreed to. In view of the vast number of items each could not be discussed seriatim. It was decided that the first subject to be settled should be that of Recommendation VI. in the Council's report—viz., the future State Sickness Insurance Committee, its functions, powers, and constitution.

After keen and prolonged discussion the recommendation of the Council was passed in the following amended form:—

That a State Sickness Insurance Committee be appointed to consider and report to the Council on all matters connected with the National Insurance Act or a Public Medical Service. That the State Sickness Insurance Committee consist of (*a*) 24 members (the majority of whom shall be general practitioners), elected by the Representative Body, (*b*) the *ex-officio* members, (*c*) two women medical practitioners to be co-opted by the Committee, one of whom shall be nominated by the Northern Association of Medical Women, the other by the Association of Registered Medical Women; and that the Committee be empowered to add to its numbers for special purposes not more than four additional members.

An amendment, designed to place all executive power in connexion with the Act in the hands of the new Committee, was proposed by Dr. T. A. HELME, but was eventually negatived. The method of choosing the 24 members to be elected by the Representative Body was considered until after the dinner interval. The meeting then considered Recommendation I. of the Council's report.

Recommendation I. of the Council's report was next taken. An amendment, "That the Council be instructed to at once cease negotiations with the Government and the Commissioners," was debated and negatived by a very large majority. A further amendment, "That the Council be instructed to inform the Government and the Insurance Commissioners that until the minimum demands of the profession are placed beyond doubt in an amending Act of Parliament, further negotiations will be useless," also raised a plain issue, and both sides were vigorously represented. The vote was taken by roll-call, and the result was that the amendment was lost by 81 votes to 58. This closed the first day's proceedings, and the meeting adjourned at 11.15 P.M.

On Wednesday morning, after the minutes of the previous day had been passed, consideration of amendments arising out of Recommendation I. was resumed, and nominations for the election of members of the new State Sickness Insurance Committee were received. An important amendment standing in the name of the Winchester and other Divisions was closely debated. It was indicated that if the original amendment were modified a basis of unanimity might be reached. To this end the proposer agreed to the following revised form of his motion:—

That this Representative meeting direct the Council to inform in plain and unmistakable language the Commissioners appointed under the Insurance Act, 1911, that unless the minimum demands of the Association be embodied in the Regulations to be issued by the Commissioners in such a manner as shall be effectual and permanent, with a view to having the same embodied in an amending Act, it is the intention of the British Medical Association to call upon its members and upon all other medical practitioners to decline to form panels or undertake any other medical duties which may be assigned to them under the Act, in conformity with the undertaking which has already been signed by over 26,000 medical practitioners.

The vote was again taken by roll-call and the amendment was declared carried, amidst great applause, by 159 votes to 3, and as a substantive motion it was carried unanimously. Thus Recommendation I. of the Council's report was replaced by the revised amendment.

There was a very strong feeling that an insistence upon the retention of all disciplinary powers in the hands of the profession itself should become one of the foremost demands of the profession. After various forms of words had been considered, it was resolved that the power of removing a practitioner's name from the panel and the power of dealing with all complaints against medical men on the panel should be vested in the Local Medical Committee, with right of appeal to a Central Medical Board, to be appointed for the purpose. This motion was adopted unanimously as a rider to the previous resolution.

The question of dispensing was then discussed and a rider to the following effect was carried:—

That dispensing as hitherto should be done or arranged for by the medical practitioner for his own patients, should he so desire, and paid for at the scale of tariff rate agreed upon for pharmacists by the Pharmaceutical Society.

The question of scale and method of payment for medical benefits then arose. The Chairman of Council warned the meeting that in submitting terms of remuneration to the Commissioners the profession should not merely state the sums which it thought just, but should give its reasons for insisting upon them.

Dr. J. PEARCE, chairman of Remuneration Sub-committee, then spoke by invitation, and the discussion was maintained for some time. It was felt widely that this matter should be decided by the constituencies themselves.

It was resolved:—

That the policy of the Association be to claim 8*s*. 6*d*. as a minimum capitation fee, not including extras and medicine, for members of approved societies and to claim the recognition of payment per attendance, in which case the fees must be on such a basis as shall be deemed an equivalent by the State Sickness Insurance Committee, with recognition of a £2 maximum income-limit.

The fifth recommendation, intended to leave the Council to deal with questions of underselling, was next taken and finally passed in an amended form. Then followed a debate upon the desirability of or of not taking part in Advisory Committees to assist the Commissioners in framing regulations. Here was revealed a sharp division of opinion. The discussion centred around a proposed rider:—

That the Council be instructed to take all possible steps to ensure that no members of the profession shall hold office or take any part in any advisory, administrative, or medical work under the Act until such time as the minimum demands of the profession are unreservedly conceded in such a manner that they cannot be altered or withdrawn save by Act of Parliament.

This was voted upon by roll call and was lost by 70 to 44.

The rejection led to the passing of a rider to ensure suitable representation upon the Advisory Committees; and another to secure their resignation if the profession's demands were not conceded, was also passed.

Recommendations IV., II., and III. were then carried practically as they stood before the adjournment.

It was found impossible to complete the business by Wednesday night, and an adjournment was made at 11 o'clock until Thursday morning.

The meeting was still in progress at the time of our going to press.

Medical News.

METROPOLITAN POLICE SURGEONS' ASSOCIATION.—The annual meeting of this association was held at Frascati's Restaurant on Feb. 16th. During the year 1911 two very instructive gatherings were organised, the first being held at the British Medical Association offices on May 4th, when Dr. Frederick J. Smith, lecturer on forensic medicine at the London Hospital Medical School, gave a demonstration on Poisons, their Detection and Post-mortem Appearances. The second, by the kind permission of the Metropolitan Asylums Board, was held in their board room on Nov. 8th, when a demonstration on Blood Staining and Examinations, Sera Reactions, and other Tests of Medico-Legal Importance was given by Dr. J. Milner-Adams. Mr. V. A. Jaynes was elected president for the coming year, Mr. Peter Cooper vice-president, and Mr. H. Bott treasurer. The honorary secretaries (Dr. C. Owen Fowler and Dr. G. Nicol Henry) were unanimously re-elected, and the four vacancies on the council were filled by the election of Mr. T. L. Archer, Dr. H. J. Ilott, Dr. W. Bower, and Mr. C. J. Stocker. During the year death removed Dr. C. Pinel Gallie, the honorary treasurer, in whom a genial friend and a valued officer of the association was lost. The meeting was followed by the annual dinner, which was under the chairmanship of the President, Dr. A. Dumville Roe, who was supported by Sir Frederick Wodehouse, K.C.V.O., C.B., the Assistant Commissioner of the Metropolitan Police; Mr. Clinton T. Dent, the chief surgeon; Mr. H. R. Oswald, the coroner for South-East London; Mr. Hedderwick, and Dr. F. J. Smith. After the usual toasts had been honoured Mr. Oswald proposed "The Metropolitan Police Surgeons' Association." He remarked on the great help that he as a coroner received in his court from divisional surgeons, and complimented the association on the work it was doing, especially in holding meetings for the consideration of professional matters, such as the detection of poisons and the sera reactions of blood, which would be of great help to them when giving evidence. He commented on the preventive treatment of tubercular disease, and on the great advantage that beds were now available at the Frimley Sanatorium for the reception of early cases of phthisis that might occur in members of the force. Mr. Jaynes responded. Dr. Owen Fowler gave the toast of "The Commissioners and the Receiver," which was replied to by Sir Frederick Wodehouse, who made mention of the newly to be enrolled civilian force of special constables. Mr. Bott proposed "The Chief Surgeon, Mr. Dent," and pointed out what a friend not only divisional surgeons but also police officers had in him. He facetiously remarked on the need of adequate remuneration for the profession, so that they might in future be able to pay modern taxes and have sufficient to attend the annual dinner. Mr. Dent made an entertaining reply. The dinner concluded with the toasts of the health of the guests, to which Mr. Hedderwick suitably replied, and that of "The President," proposed by Dr. F. G. Crookshank. An enjoyable concert programme was provided by Miss Edith Kirkwood, Mr. Charles C. Rose, and Miss Beatrice Eveline, the 'cello solos of the latter receiving a well-merited encore.

LITERARY INTELLIGENCE.—Messrs. W. B. Saunders Company have arranged to publish in serial form the Surgical Clinics of Dr. John B. Murphy at the Mercy Hospital, Chicago. The Clinics will be published bi-monthly. The subscription price will be 35*s.* net per year of six issues, each number containing about 130 octavo pages, illustrated. The first number appears this month.—Messrs. Constable and Co. will commence the publication in April next of a new review, to be entitled "Bedrock," "a quarterly review of scientific thought." The review will appear as an organ devoted to the full discussion of such subjects as the effect on the race of native and foreign disease, of intemperance, of city life and luxury; the fitness of women for government; the real nature of the psychological and physiological difference between sexes, races, and classes; the present relation of science to religion; theories of evolution and heredity; the trend of scientific and mechanical research, invention, and development; in fact, with all the greater problems of modern science in a manner fundamentally scientific, and, the editors hope, also generally interesting to an educated public. It will further make a feature of notes on current research work and reviews of selected scientific books. The editorial committee consists of Sir Bryan Donkin, Professor E. B. Poulton, Hope professor of zoology in the University of Oxford, Professor H. H. Turner, Savilian professor of astronomy in the University of Oxford, and Dr. G. Archdall Reid. The acting editor will be Mr. H. B. Grylls.—Mr. Heinemann will publish shortly "Microbes and Toxins in Nature," by Dr. Burnet, of the Pasteur Institute, with a preface by Professor E. Metchnikoff, author of "The Nature of Man"; "Animal Life in Africa," by Major J. Stevenson Hamilton, F.R.G.S., C.M.Z.S., descriptive of the fauna of the Ethiopian region; a book by Earl Russell on "Divorce"; and an English edition of the novels of Dostoevsky, translated by Mrs. Garnett.—The Cambridge University Press announce the issue of the new "Encyclopædia Britannica" in fortnightly parts at 3*s.* 6*d.* each. Each part will consist of about 200 quarto pages, and will be bound in stout boards.

INQUEST ON A MEDICAL MAN.—On Feb. 16th an inquest was held at Wandsworth town-hall by Mr. John Troutbeck with reference to the death of Dr. Horace Jeaffreson, aged 75, who died under tragic circumstances at his house at Wandsworth on Feb. 14th. Mr. H. C. Jeaffreson, a nephew, said that the deceased retired from practice some years ago. He had not been in good health lately, though when witness last saw him about a fortnight before his death he seemed better than usual. He was not so sane as he was 20 years ago, but he was able to talk rationally on ordinary subjects. Mrs. Charlotte Simpson, housekeeper to the deceased, whom she had known 35 years, said he suffered from delusions and nightmare, and fancied he saw faces and that he was poor. The night attendant said that on her return after a temporary absence early on the morning of the 14th she noticed a change in the face of the deceased. Turning back the bedclothes to feel if the heart was beating she saw a penknife sticking in a wound in his right groin. Dr. F. H. Carter said that he went into partnership with Dr. Jeaffreson 27 years ago. Dr. Jeaffreson retired in 1903. Lately he had been mentally depressed, though on some points his mind was alert. He suffered from hydrocele on both sides, and had been in the habit of tapping it himself on the right side when necessary. Witness used to operate on the left side. Some time ago witness and another medical man prescribed small doses of morphia. Deceased used to inject the drug himself. He was most careful and never exceeded four minims. Dr. Jeaffreson had also co-operated courageously with his advisers in reducing the dose, though morphia added enormously to his comfort. For some weeks before his death he had not used the drug. He had no suicidal tendency; on the contrary, he had a great horror of suicide. If he had intended to end his life by piercing the femoral artery he went very wide of the mark for one who knew his anatomy well. The artery was cut, but not deliberately witness thought. Dr. R. S. Trevor, who conducted the necropsy, explained that the wound was of very slight depth. It was an inch and a half in length, and its centre was an inch away from the femoral artery, which the point of the knife had reached under the skin. Death was due to heart failure. The jury returned a verdict of death from misadventure, and expressed the opinion that Dr. Jeaffreson had no intention of cutting the artery.

SEVENTEENTH INTERNATIONAL CONGRESS OF MEDICINE.—A meeting of the organisation committee of the Congress was held on Monday, Feb. 19th, at 5 P.M., in the library of the Royal College of Physicians of London. Sir Thomas Barlow presided and 42 members of the committee were present. A provisional programme of subjects for discussion was agreed upon. This will be published in THE LANCET at an early date.

Parliamentary Intelligence.

NOTES ON CURRENT TOPICS.

Medical Men and the Insurance Act.

THE developments in the hostility of medical men towards the Insurance Act are closely watched by Members of Parliament. Many of them have read the proposed Bill framed by the British Medical Association Reform Committee, and it is evident that if the passage of the Act had been delayed for a year the difficulties of the Government in pressing it through would have been very greatly increased. The difficulties have now been transferred from the

legislative to the administrative sphere. That, however, does not mean that the attention of Parliament will be diverted from the struggle going on in the country. On the first day of the session Mr. BONAR LAW, the Leader of the Opposition in the House of Commons, criticised briefly but sharply the London Opera House speech of Mr. LLOYD GEORGE. The passage may be quoted: "Then there are the poor doctors—the poor innocent creatures who do not know their right hand from their left, who know nothing about their own business, and are misled by wily politicians into opposing the beneficent methods of the Chancellor of the Exchequer." Said Mr. BONAR LAW: "It is very interesting. How does the right honourable gentleman now deal with the doctors? The time for cajolery has gone. We all remember that at one stage of the proceedings how every second day inspired paragraphs appeared in the Radical papers to the effect that the eloquence of the Chancellor had squared the doctors. All that has gone now. Blandishment is of no more use, and they are to be brought to heel by threats—I am bound to say by somewhat brutal threats. There are two observations to be made on this question. The first is that the doctors will really be as simple as the right honourable gentleman imagines them to be, if they regard those threats as anything but the wild outburst of impotent rage. Secondly, if he can carry out these threats, which I do not think is possible, then the Insurance Act which will come into operation will be an entirely different measure from the one which went through the House of Commons."

Public Health and Local Administration.

Amongst the Blue-books presented to Parliament in the early days of the session was Part II. of the Annual Report of the Local Government Board for 1910–11. One of the sections relates to public health and local administration. Amongst the many interesting topics with which the section deals are the housing of the working-classes, town planning, infectious disease, hospitals, medical officers of health and their reports, and food- and water-supplies.

Tropical Diseases Research Fund.

The report of the Advisory Committee for the Tropical Diseases Research Fund for the year 1911 is now issued as a Parliamentary Blue-book. The Research Fund has now a revenue of £3345, of which £1000 is received from the Imperial Government. This sum did not quite meet the expenditure of the year, which amounted to £3795 6*s.* 8*d.* It was allocated as follows: London School of Tropical Medicine, £1533 6*s.* 8*d.*; Liverpool School of Tropical Medicine, £1262; University of London, £750; and University of Cambridge, £250. The excess of expenditure over income was met by drawing on the accumulated balance of the Fund. Attention is called by the committee to the urgent necessity of further sums being placed at its disposal in view of the many important questions calling for further research. During the year the committee was consulted on various matters by the Secretary of State for the Colonies, including the appointment of an assistant in the research laboratory at Yaba and the selection of an officer to inquire into the diseases of vomiting sickness and peripheral neuritis which are prevalent in Jamaica. Returns in regard to mosquito-borne disease in various colonies and protectorates have been before the committee, but these are not yet complete. The report states, in conclusion, that the committee notes with pleasure the high standard of work which is being done in various colonial laboratories, and which shows the increased interest in research work which is being taken by the officers in charge. The committee is of opinion tha the experiment of setting up these laboratories has fully justified itself, and that it deserves all possible encouragement.

Industrial Poisoning.

A copy has been presented to the House of Commons of the preliminary tables and cases of industrial poisoning, fatal and non-fatal accidents, and dangerous occurrences in factories, workshops, &c., during the year 1911.

Feeble-minded Persons (Control) Bill.

Amongst the Bills presented by private members in the House of Commons this session is one "to provide for the better care and protection of feeble-minded persons." Mr. STEWART introduced the Bill and it was read a first time. The Prime Minister has promised to deal by legislation with this question during the current session.

The Midwives Act.

As shown by the report of the Central Midwives Board for the year 1910–11 which has just been presented to Parliament, the names on the Midwives Roll on March 31st, 1911, amounted to 31,673, an increase for the year of 2464. Of the total 10,412 had passed the Board's examination and 9655 had been admitted to the Roll in virtue of prior certification under Section 2 of the Midwives Act. The total number of trained midwives was, therefore, 20,067, as against 11,606 untrained, the percentages being 63·4 and 36·6. The corresponding percentages for the previous year were 61 and 39. A large proportion, however, of the trained women do not practise as midwives, and if the number of practising midwives only be considered the untrained women would be found to be in a considerable majority. The number of penal cases dealt with by the Board showed a steady increase, but the report attributes this to the greater thoroughness in administration shown by some of the supervising authorities. The reports of the medical officers of health, it also appears, uniformly bore witness to progressive improvement in the methods of practice of untrained midwives due to the care and assiduity with which the inspectors had instructed and helped those under their charge. The words of the county medical officer of health of Salop are quoted as expressing the universal opinion of those engaged in the administration of the Midwives Act. "Another year of experience," that gentleman reported, "has confirmed me in the opinion that this Act is a measure of the greatest importance, and that the benefit of it will be felt with increasing force from year to year as the untrained midwives are replaced by trained ones." Various points in connexion with the administration and suggested improvement of the Act are discussed in the report.

HOUSE OF COMMONS.

FRIDAY, FEB. 16TH.

The Medical Treatment of School Children.

Mr. HAYES FISHER, in moving an amendment to the motion for an address in reply to the speech from the Throne, drew attention to local taxation. In the course of his speech he asked the Chancellor of the Exchequer to make an interim grant to cover a part of the expenditure on the reduction of the size of classes in metropolitan schools, and also the medical treatment of school children, which, although optional for local authorities, was made a subject of considerable pressure by the Board of Education.

Mr. LLOYD GEORGE, in the course of his reply, said that in regard to the burdens cast by the present Government on the London ratepayer, the feeding of children and medical inspection together did not come to more than £100,000.

Mr. HAYES FISHER: Will the right honourable gentleman deal with the infinitely larger items of medical treatment and Article XIV.?

Mr. LLOYD GEORGE: That is not a burden. It is purely voluntary. It is if the local authorities wish to undertake the responsibility, and personally I should like them to do so. But let me remind the right honourable gentleman that I promised two or three months ago that there should be a subvention to those councils in respect of medical treatment. The right honourable gentleman has overlooked that fact altogether.

Mr. HAYES FISHER: I did not know that the promise had ever been definitely made.

Mr. LLOYD GEORGE: It could not have been more definite. I will just tell those in the House who judge me fairly to wait until they see the education estimates. So far as the cost of medical treatment is concerned the Government has not merely promised definitely to make a subvention to it, but it is on the estimates.

MONDAY, FEB. 19TH.

The Sale of Milk.

Mr. BARNSTON asked the President of the Board of Agriculture whether he was now in a position to state the result of the inquiries which the Board had been making as to the manner in which the existing provisions of the law relating to the sale of milk were at present administered by local authorities.—Mr. RUNCIMAN replied: The inquiries are still proceeding. A considerable amount of information has been obtained, and I am in communication with the Local Government Board as to the steps to be taken to put matters on a better footing.

Food and the Parcel Post.

Mr. TOUCHE asked the Postmaster-General whether precautions were taken to secure that the soft bags now used for the conveyance of parcels, including articles of food, were kept in a clean and sanitary condition.—Mr. H. SAMUEL answered: The reply is in the affirmative. I am advised that bags can be more thoroughly cleaned than baskets.

The Prevalence of Anthrax.

Mr. CHARLES BATHURST asked the Home Secretary to state (1) how many cases of anthrax among human beings occurred in 1911, and how this number compared with those occurring in 1909 and 1910 respectively; and (2) in how many cases during the period of increased prevalence of anthrax among British farm animals in 1911 human anthrax was traceable to contact with such animals or their carcasses or skins, and whether such cases were in excess of those occurring in 1910.—Mr. MCKENNA said in reply: The Home Office is only notified of cases of anthrax occurring in factories and workshops. The number of such cases in 1909 was 56; in 1910, 51; and in 1911, 64. Of these, two in 1910 and one in 1911 were reported to be due to British hides. The Local Government Board, whom I have consulted as to the number of other cases of anthrax, inform me that there are no complete statistics, anthrax in human beings not being generally notifiable, but that the industrial cases referred to above apparently constitute the large majority.

The Care of the Feeble-minded.

Mr. EVELYN CECIL asked the Prime Minister whether it was the intention of His Majesty's Government to introduce a Bill during this session for the better care and control of the feeble-minded on the lines of the Report of the Royal Commission issued in 1908.—Mr. ASQUITH replied: The answer is in the affirmative.

Insurance Act Regulations.

Mr. G. LOCKER-LAMPSON asked the Secretary to the Treasury when the regulations under the National Insurance Act would be issued by the Commissioners.—Mr. MASTERMAN said in reply: I hope in the course of this week to lay on the table of the House regulations prescribing the character of the constitution of unregistered societies seeking approval in accordance with Section 23 (1) of the Act. Other regulations will be laid from time to time as speedily as possible.

TUESDAY, FEB. 20TH.

National Insurance Topics.

Mr. NEWMAN asked the Financial Secretary to the War Office whether, in the event of the National Insurance Act being brought into operation, he could state whether the present privileges with regard to free medical attendance on wives, children, and step-children, as well as on themselves, now enjoyed by army pensioners employed at ordnance factories when residing within one mile of the factory, would

be continued.—Mr. TENNANT replied: The question is under consideration.

The Marquis of TULLIBARDINE asked the Secretary to the Treasury what arrangements were made under the National Insurance Act for providing medical attendance for a contributor who fell ill away from his own locality, as in the case of a Scottish contributor residing temporarily in England.—Mr. MASTERMAN said in reply: It is clearly impossible to state at present what precise form the arrangements will take for dealing with the contingencies referred to in the question. The matter will be for the consideration of the different local Insurance Committees, subject to the regulations and to the approval of the Insurance Commissioners.

Sickness at Osborne College.

Mr. HUNT asked the Civil Lord of the Admiralty whether there were at present at Osborne College two cases of typhoid fever, two of bronchitis, one of pneumonia, and one of diphtheria; whether there were in the College altogether 70 people on the sick list; and, if so, what steps were being taken to prevent the various diseases from spreading.—Mr. LAMBERT answered: There is one case of typhoid fever at Osborne, one of bronchitis, two of pneumonia, and none of diphtheria. On the 18th inst. 72 cadets were on the sick list, almost all suffering from minor ailments. The case of typhoid fever is isolated and the usual precautions are being taken.

WEDNESDAY, FEB. 21ST.

Scottish and Irish Surgeons in England.

Mr. GINNELL asked the President of the Local Government Board whether he was aware of the exclusion of Irish and Scottish surgeons from some surgical appointments in England on the ground of an alleged inferiority of their degrees; if there was real professional inferiority, whether he would say in what it consisted; and, if the allegation was unfounded, whether the Board would withhold its sanction of surgical appointments made subject to the exclusion complained of within the jurisdiction of the Board.—Mr. BURNS said in reply: I am not sure to what appoinments the honourable member refers. Perhaps he will be good enough to communicate with me on the subject. In my department we take no notice of the nationality or religion of the applicants. On their merits only are they appointed.

BOOKS, ETC., RECEIVED.

ALLEN, GEORGE, AND CO., LIMITED, Ruskin House, 44 and 45, Rathbone-place, London, W.

Hegel's Charlatanism Exposed. By M. Kelly, M.A., M.D. (late Major, R.A.M.C.). Price 2*s.* 6*d.*

BAILLIÈRE, TINDALL, AND COX, London.

Direct Laryngoscopy, Bronchoscopy, and Œsophagoscopy. By Dr. W. Brünings. Translated and edited by W. G. Howarth, M.A., M.B., B C. Camb., F.R.C.S. Eng., Surgeon in Charge of the Throat Department at St. Thomas's Hospital and the Queen's Hospital for Children. Price 15*s.* net.

CHURCHILL, J. AND A., London.

A Simple Method of Water Analysis, especially Designed for the Use of Medical Officers of Health. By John C. Thresh, M.D. Vic., D.Sc. Lond., D.P.H. Camb. Seventh edition. Price 2*s.* 6*d.* net.

FORDHAM UNIVERSITY PRESS, New York.

Old-Time Makers of Medicine. The Story of the Students and Teachers of the Sciences related to Medicine during the Middle Ages. By James J. Walsh, K.C.St.G., M.D., Ph.D., LL.D., Litt.D., Sc.D., Dean and Professor of Nervous Diseases and of the History of Medicine at Fordham University School of Medicine. Price $2.00 net.

GLAISHER, H. J., 55 and 57, Wigmore-street, London.

The Feast of Herbs (Vegetarian Cookery). Price 1*s.* 6*d.* net.

ISTHMIAN CANAL COMMISSION PRESS, Quartermaster's Department, Mount Hope, C.Z.

Isthmian Canal Commission. Sanitary Department. Proceedings of the Canal Zone Medical Association. For the Half Year, October, 1910, to March, 1911. Vol. III., Part 2. Price not stated.

KING, P. S., AND SON, Orchard House, Westminster, London, S.W.

Shop Slavery and Emancipation. A Revolutionary Appeal to the Educated Young Men of the Middle Class. By William Paine. With an Introduction by H. G. Wells. Price 1*s.* net.

How to Start a Women's Lodging Home. By Mary Higgs, Bent House, Oldham. Price 3*d.*, post free.

Problems of Boy Life. Edited by J. H. Whitehouse, M.P. With an Introduction by the Right Reverend John Percival, Bishop of Hereford. Price 10*s.* 6*d.* net.

LAYTON, CHARLES AND EDWIN, 56, Farringdon-street, London, E.C.

Handy Newspaper List. 1912. Price 6*d.*

LEWIS, H. K., London.

Manual of Operative Surgery. By John Fairbairn Binnie, A.M., C.M. Aberdeen, Surgeon to the General Hospital, Kansas City, Mo. Fifth edition, revised and enlarged. Price 30*s.* net.

MACMILLAN AND CO., LIMITED, London.

The Modern Prison Curriculum. A General Review of our Penal System. By R. F. Quinton, M.D., late Governor and Medical Officer of H.M. Prison, Holloway. Price 5*s.* net.

MANSFIELD AND CO., E., 1, McLean's Buildings, New-street-square, London, E.C.

The Personal Calendar. A Monthly Index to Political, Official, and Social Changes. No. 1. January, 1912. With December Supplement. Price 6*d.* monthly. Post free 7*d.*

METHUEN AND CO., LIMITED, London.

Round the Red Lamp. Being Facts and Fancies of Medical Life. By A. Conan Doyle. Price 1*s.* net.

Appointments.

Successful applicants for Vacancies, Secretaries of Public Institutions, and others possessing information suitable for this column, are invited to forward to THE LANCET *Office, directed to the Sub-Editor, not later than 9 o'clock on the Thursday morning of each week, such information for gratuitous publication.*

AGASSIZ, C. D. S., M.B., Ch.B. Aberd., D.P.H., has been appointed Resident Medical Officer at the City of London Hospital for Diseases of the Chest.

DAVIES, J. P. H., B.C. Cantab., M.R.C.S., L.R.C.P. Lond., D.P.H., has been appointed House Physician at the City of London Hospital for Diseases of the Chest.

DOBRASHIAN, G. M., M.B., B.S. Lond., has been appointed Resident Medical Officer at the Ransom Sanatorium for Consumptives, Sherwood Forest, Mansfield.

HARRIS, H. A., M.R.C.S., L.R.C.P. Lond., has been appointed Resident Medical Officer at the British Lying-in Hospital.

MILLAR, H. S., M.D., B.Ch., B.A.O. Dub., has been appointed House Surgeon at the General Infirmary, Worcester.

ROACH, W. FROTHINGHAM, M.D., C.M. Montreal, L.A.H. Dub., has been appointed a Demonstrator in the Public Health Department of the University of London at King's College.

SMITH, G. F. R., M.B., Ch.B. Liverp., M.B., B.S. Lond., has been appointed Honorary Assistant Surgeon to the Royal Alexandra Hospital, Rhyl, North Wales.

WINTERBOTHAM, JOHN, M.R.C.S., L.R.C.P. Lond., has been appointed House Physician at the City of London Hospital for Diseases of the Chest.

Vacancies.

For further information regarding each vacancy reference should be made to the advertisement (see Index).

BANBURY, HORTON INFIRMARY.—House Surgeon. Salary £80 per annum, with board and residence.

BEDFORD COUNTY HOSPITAL.—Assistant House Surgeon. Salary £80 per annum, with board, lodging, and laundry.

BIRMINGHAM AND MIDLAND EYE HOSPITAL.—Second and Third House Surgeons. Salaries £80 and £75 per annum respectively, with board, rooms, and laundry.

BRADFORD ROYAL INFIRMARY.—Two House Surgeons, unmarried. Salary £100 per annum, with board, residence, and washing.

BRISTOL EYE HOSPITAL.—House Surgeon. Salary £80 per annum, with board and residence.

BRISTOL GENERAL HOSPITAL.—Senior House Surgeon. Salary £120 per annum, with board, residence, &c.

BURTON-ON-TRENT INFIRMARY.—House Surgeon. Salary £120 per annum, with rooms, board, coal, and light.

BURY ST. EDMUNDS, WEST SUFFOLK GENERAL HOSPITAL.—House Surgeon, unmarried. Salary £100 per annum, with board, lodging, and laundry

CANCER HOSPITAL (FREE), Fulham-road, S.W.—Assistant Pathologist. Salary £350 per annum.

CARLISLE, CUMBERLAND INFIRMARY.—Resident Medical Officer. Salary at rate of £80 and £100 per annum respectively, with board, lodging, and washing.

CHARING CROSS HOSPITAL.—Physician.

CLYDEBANK, BLAWARTHILL HOSPITAL, Yoker.—Medical Officer. Salary £125 per annum.

DAVOS, QUEEN ALEXANDRA SANATORIUM.—Junior Medical Officer. Salary £100 per annum, with board, residence, and washing.

DERBY COUNTY ASYLUM, Mickleover.—Junior Assistant Medical Officer. Salary £120 per annum, with apartments, board, washing, and attendance.

DEWSBURY AND DISTRICT GENERAL INFIRMARY.—House Surgeon. Salary £120 per annum, with board, residence, and washing.

DONCASTER, ROYAL INFIRMARY AND DISPENSARY.—House Surgeon. Salary £150 per annum, with board, apartments, and laundry.

DORCHESTER, DORSET COUNTY HOSPITAL.—House Surgeon, unmarried. Salary £100 per annum, with board and lodging.

EVELINA HOSPITAL FOR SICK CHILDREN, Southwark, London, S.E.—House Physician for six months. Salary at rate of £75 per annum, with board, residence, and washing.

GLASGOW MATERNITY AND WOMEN'S HOSPITAL.—Three Indoor House Surgeons for six months and Three Outdoor House Surgeons for three months.

INFANTS HOSPITAL, Vincent-square, Westminster.—Assistant Physician.

LANCASHIRE EDUCATION COMMITTEE.—School Medical Inspector. Salary £250 per annum.

LARBERT, STIRLING DISTRICT ASYLUM.—Second Assistant Medical Officer. Salary £140 per annum, with board, lodging, and laundry.

LEICESTER POOR-LAW INFIRMARY.—Second Resident Assistant Medical Officer. Salary £130 per annum, with rations, furnished apartments, and washing.

LIVERPOOL INFIRMARY FOR CHILDREN.—Resident House Surgeon and Resident House Physician. Salary at rate of £60 per annum, with board and lodging.

LIVERPOOL, ROYAL SOUTHERN HOSPITAL.—Two House Physicians and Three House Surgeons, all for six months. Salary at rate of £60 per annum, with board and residence.

LOUGHBOROUGH AND DISTRICT GENERAL HOSPITAL AND DISPENSARY.—Resident House Surgeon. Salary £100 per annum, with rooms, attendance, board, and washing.

MACCLESFIELD GENERAL INFIRMARY.—Junior House Surgeon. Salary £60 per annum, with board and residence.

MANCHESTER CHILDREN'S HOSPITAL, Gartside-street. — Assistant Medical Officer for six months. Salary £50 per annum.
MANCHESTER CHILDREN'S HOSPITAL, Pendlebury.—Resident Medical Officer for six months, unmarried. Salary £40.
NOTTINGHAM GENERAL DISPENSARY.—Assistant Resident Surgeon, unmarried. Salary £160 per annum, with apartments, attendance, light, and fuel.
OXFORD, COMBINED DISTRICTS IN THE COUNTY OF OXFORD.—Medical Officer of Health. Salary £500 per annum.
OXFORD, RADCLIFFE INFIRMARY AND COUNTY HOSPITAL.—Casualty Officer, unmarried for six months. Salary at rate of £80 per annum, with board, &c.
PLYMOUTH, SOUTH DEVON AND EAST CORNWALL HOSPITAL.—House Physician for six months. Salary £75 per annum, with board, residence, and washing.
PRESCOT UNION WORKHOUSE AND INFIRMARY, Whiston, Prescot, near Liverpool.—Resident Assistant Medical Officer, unmarried. Salary £120 per annum, with apartments, board, washing, attendance, &c.
PRESTON ROYAL INFIRMARY.—Junior House Surgeon, unmarried, for six months. Salary £60 per annum, with board, residence, and washing.
QUEEN'S HOSPITAL FOR CHILDREN, Hackney-road, Bethnal Green, N.E.—House Surgeon for six months. Salary at rate of £80 per annum, with board, residence, and washing.
ROBBEN ISLAND LEPER SETTLEMENT, Cape of Good Hope.—Bacteriologist. Salary £400 per annum, with board and lodging.
ROYAL NAVAL MEDICAL SERVICE.—Fifteen Appointments.
RYDE, ROYAL ISLE OF WIGHT COUNTY HOSPITAL.—Resident House Surgeon, unmarried. Salary £100 per annum.
SALISBURY, FISHERTON HOUSE.—Junior Assistant Medical Officer, unmarried. Salary £120 per annum, with board, apartments, &c.
SHEFFIELD UNION HOSPITAL, Firvale.—Resident Assistant Medical Officer, unmarried. Salary £100 per annum, with apartments and rations.
SHREWSBURY, SALOP INFIRMARY (COUNTY HOSPITAL).—House Physician Salary at rate of £70 per annum, with board and apartments.
SLEAFORD, KESTEVEN COUNTY ASYLUM.—Assistant Medical Officer. Salary £150 per annum, with board, &c.
STIRLING, COUNTY OF.—Medical Officer of Health. Salary £500 per annum.
THROAT HOSPITAL, Golden-square, W.—Resident House Surgeon. Salary £75 per annum, with board, residence, and laundry. Also Surgical Registrar.
TOOTING BEC ASYLUM.—Third Assistant Medical Officer, unmarried. Salary £150 per annum, with board, lodging, and washing.
WALSALL AND DISTRICT HOSPITAL.—House Surgeon. Salary £120 per annum, with board, residence, and laundry. Also House Physician and Casualty Officer. Salary £90 per annum, with board, residence, and laundry.
WARRINGTON INFIRMARY AND DISPENSARY.—Junior House Surgeon. Salary at rate of £100 per annum, with board, lodging, and laundry.
WESTERN GENERAL DISPENSARY, Marylebone-road, N.W.—Honorary Physician.
WEST LONDON HOSPITAL, Hammersmith-road, W.—Two House Physicians and Three House Surgeons for six months. Board, lodging, and laundry provided.
WEST SUSSEX SOUTHERN UNITED (M.O.H.) DISTRICTS.—Medical Officer of Health. Salary at rate of £350 per annum. Also in connexion with the above, Assistant School Medical Officer for the West Sussex and Chichester Joint Education Committee. Salary at rate of £150 per annum.
WOLVERHAMPTON AND STAFFORDSHIRE GENERAL HOSPITAL.—Resident Medical Officer. Salary at rate of £100 per annum, with board, rooms, and laundry.

THE Chief Inspector of Factories, Home Office, London, S.W., gives notice of vacancies as Certifying Surgeons under the Factory and Workshop Act at Clitheroe, in the county of Lancs; at Frome, in the county of Somerset; at Millbrook, in the county of Cornwall; at Schull, in the county of Cork; and at Staplehurst, in the county of Kent.

Births, Marriages, and Deaths.

MARRIAGES.

MURRAY—HULL.—On Feb. 20th, at St. Gabriel's, Warwick-square, S.W., Captain J. H. Murray, I.M.S., to Freda, daughter of the late Commander T. A. Hull, R.N.
SPROTT—BROSTER.—On Feb. 15th, at St. Margaret's, Westminster, by Canon Hensley Henson, D.D., Ernest W. Sprott, son of the late Walter Sprott, Esq., of Mayfield, Sussex, to Barbara Broster, M.B., B.S., daughter of the late Thomas Mawdsley Broster, Esq., of Liverpool, and Mrs. Broster, of Abergavenny.

DEATHS.

COLLEY.—On Feb. 15th, at Folkestone, Constance Helena Colley, M.D.
DOWNIE.—On Feb. 17th, at Sunny Bank, Cannes, Colonel Kenneth M. Downie, I.M.S., retired, aged 66 years.
JEAFFRESON.—On Feb. 14th, at Red House, Wandsworth, Horace Jeaffreson, M.D., aged 75 years.
KIRBY.—On Feb. 18th, at South Lowestoft, Samuel John James Kirby, M.D., D.P.H., aged 58 years.
MAURICE.—On Feb. 14th, at Lloran House, Marlborough, James Blake Maurice, M.D., F.R.C.S.
OGILVY-RAMSAY.—On Thursday, Feb. 15th, at 5, Portland-square, Carlisle, Maxwell Ogilvy-Ramsay, M.A. St. Andrews, M.D., F.R.C.S. Edin., Hon. Surgeon to the Cumberland Infirmary.

N.B.—A fee of 5s. is charged for the insertion of Notices of Births, Marriages, and Deaths.

Notes, Short Comments, and Answers to Correspondents.

TWO CROWDED YEARS.

To the Editor of THE LANCET.

SIR,—I suggest that the enclosed is worth publishing in the columns of THE LANCET. I am, Sir, yours faithfully,
Welbeck-street, W., Feb. 16th, 1912. M.B.

ENCLOSURE.

DEAR MR. —— Tottenham, Feb. 7, 1912.

At last I am sending you, our long promised account of how many illnesses we managed to have during two years.

We were at the time 6 (children) in Family. It commenced with Nurse having a M—— Abscess at the back of her ear. Father took her to Golden Square Hospital where she remained for several weeks.

2. Willie, eldest boy, aged 6. Adanoids and Tonsles removed.
3. All, infectious sore throats.
4. Children all Mumps.
5. Mollie & Willie, Measles.
6. Nurse, Scarlet Fever.
7. Nellie, Dorothy and Edie, Measles *and* Scarlet Fever.
8. Arthur (baby then) measles.
9. Nellie, Edie and Arthur, whooping cough.
10. Ringworm and Impetago, all children.
11. Arthur Chickenpox and Impetago.
12. Twins! born (8 of us now).
13. Mollie, Diptheria.
14. General Colds.

I am glad to say at the present time, we are all quite well,
And Remain, Yours Sincerely,
MOLLIE D——.

*** "M.B.'s" young correspondent has contributed a most interesting chapter to medicine. We have left her graphic notes exactly as they were sent to us.—ED. L.

HEALTH AND SANITATION IN NORTHERN NIGERIA.

THE Protectorate of Northern Nigeria, in West Africa, was established in the year 1900, and includes the northern portion of the territories formerly administered by the Royal Niger Company. It is bounded on the south by Southern Nigeria, to the west and north by the French possessions in the hinterland of Dahomey and the Soudan, and on the east by Lake Chad and the German territory of the Cameroons. The area is about 255,700 square miles. In his latest report to the Colonial Office on the affairs of the Protectorate, the Governor, Sir H. Hesketh Bell, K.C.M.G., remarks that in spite of a considerable influx of Europeans, mostly in connexion with the mines, and many of whom have had no previous experience of the tropics, the proportion of deaths and the invaliding rate show a most satisfactory improvement. Greater care in matters affecting health and better precautions as regards exposure and manner of life generally are having a marked effect on medical statistics, and the death-rate of 15·35 per 1000 among the resident European population is the lowest on record since the Government assumed the administration of the territory. The general health of the natives during 1910 appears to have been fairly good, and no epidemic of a serious nature occurred. Leprosy, however, has been found to be terribly rife among the natives of the Moslem states. It is estimated that in the Sokoto Emirate alone there are more than 6000 lepers, and that in the whole Protectorate there are probably some 80,000. The problem is one that requires vigorous action, due consideration being at the same time paid to native susceptibilities. Considerable attention has been paid to sanitation. A senior and junior sanitary officer have been appointed and have already done much excellent work in advising on the measures necessary—including the planning and laying out of new towns and villages—to improve the general health, not only of Europeans, but also of the native communities. Appended to the Governor's report is a summary of the Blue-book of the Protectorate for 1910–11, from which it appears that the average number of Europeans resident in the Protectorate during the year, including officials and non-officials, but excluding those engaged on the Lagos railway (northern extension), was 637, of whom 424 were officials and 213 non-officials. The large increase in the non-official population was due to the extension of the mining industry, and the decrease in the official population results from the reduction of the construction staff of the Baro-Kano railway. The native population is roughly estimated at 10,000,000, but until a careful assessment of land revenue and population has been completed throughout the Protectorate this figure can only be considered as approximate. It will probably prove to be under the actual number.

There were 13 deaths from all causes among Europeans during the year—12 due to disease and 1 to an accident. The total crude

European death-rate, calculated on the average resident population, and not corrected for age and sex, was 20·41 per 1000. The rates from all causes amongst officials and non-officials were 16·51 and 28·17 per 1000 respectively. The number of Europeans invalided during the year was 43. The invaliding rate per 1000 was 73·1 amongst officials and 79·8 amongst non-officials. The general character of the prevalent diseases has been maintained. Malaria still accounts for the greatest number of cases of illness in the Protectorate. The total number of admissions to hospitals of Europeans suffering from malaria during the year was 250, a decrease of 193 cases, notwithstanding that the European population increased from 544 to 637. The number of cases of mortality from blackwater fever was lower by 0·87 per cent. than in the previous year, and by 0·44 per cent. than the average of the last seven years. The actual number of admissions to hospitals on account of blackwater fever was 9 and there were 2 deaths. There was a further increase in the number of natives under treatment at the Government hospitals and dispensaries, the total being 23,770, exclusive of 4951 cases treated by the railway medical staff at Baro. The number of pauper patients treated during the year was 3899, an increase of 432 in the number for the preceding year.

During the year 8 cases of sleeping sickness, all amongst natives, were noted; 1 of these ended fatally. The individuals affected were sent for segregation to a camp in the neighbourhood of Zaria, a district free from tsetse flies. At Baro a marsh extends along the greater part of the river front, but schemes are now under consideration for filling in and draining the ground. According to all the canons of tropical hygiene Baro ought to be a notoriously unhealthy spot. Since its occupation by Europeans, however, its health record has not been at all a bad one, and most of the cases treated in the hospitals there are importations. During the year several cases of trypanosomiasis in natives have been discovered at Baro, and infected persons have been deported to the neighbourhood of Zaria to keep them away from tsetse flies. It is impossible to say if all or any of these cases were importations.

Small-pox is endemic, and takes an epidemic form in some parts of the Protectorate every year. Comparatively few of the cases come under medical observation, but this is not surprising, having regard to the fact that the number of medical officers actually in residence works out at one to an area of 9000 square miles. In some places, too, it is difficult to persuade the natives to agree to vaccination owing to religious or other prejudices. During the year 43 cases, all among natives, were treated, and 3 proved fatal. Successful vaccinations, to the number of 3942 cases, were performed during the year—the majority in the interior of the Protectorate, where formerly scarcely any success had been met with. This success is largely due to the use of powdered lymph. Small-pox is essentially a dry weather disease—every outbreak disappearing with the onset of the rains. Prophylactic inoculation has been practised amongst certain tribes in the Protectorate for many generations. The highest shade temperature recorded in the Protectorate during the year was 114°F. on March 23rd and 26th at two places in the Bornu Province. The lowest shade temperature was 39° at Sokoto on Jan. 4th. The highest mean shade temperature was 84·2° recorded at Baro, and the lowest 76·3° recorded at Ankpa. The greatest range of temperature was 73° recorded at Maiduguri—i.e., 41° to 114°. The greatest total rainfall was 56·44 inches recorded at Ankpa, in the Bassa Province, and the lowest, 16·87 inches, recorded at Geidam, in the Bornu Province. The greatest rainfall in one day was 5·53 inches, recorded at Zungeru on August 6th.

LANTERN SLIDES FOR AMBULANCE LECTURES.

To the Editor of THE LANCET.

SIR,—I should be glad if any of your readers would give me information as to the following: Is there any society or association who will lend lantern slides for illustrating courses of lectures on ambulance work?

I am, Sir, yours faithfully,

Feb. 13th, 1912. H.

MILNE'S SURGICAL DRESSINGS.

DURING Lister's period of work at Edinburgh Mr. John Milne was his special assistant in preparing antiseptic appliances according to the new ideas. When in 1877 Lister came to London he was, we are informed, accompanied by Milne, who established a factory at Ladywell on purpose to manufacture surgical dressings according to the special instructions of the great innovator. The factory has now developed into the Galen Manufacturing Co., Limited.

THE ETIOLOGY OF HERPES.

To the Editor of THE LANCET.

SIR,—The causation and etiology of herpes being somewhat obscure and theoretical, the following case may be of interest. I was asked to see a woman, aged 53, who was complaining of a rash on the arm. On examination she had a typical eruption of herpes on the left arm, extending from the wrist upwards along the inner side of the forearm, arm, and extending on to the chest and back. The eruption on the arm follows the line of the internal cutaneous nerve; on the left side of the chest it is scattered but profuse, and also on the scapular region. The patient is a very "nervous" subject, and the interesting point in the case is this. Three days before she felt the pain which preceded the appearance of the eruption a mouse ran up her left sleeve into her axilla, and was only liberated by her daughter unfastening her blouse at the back. The patient was always terrified of a mouse. I know her statement about the mouse is correct, for her daughter and her husband witnessed the occurrence. I may say I have seen six cases of herpes zoster this week, two of them occurring in two soldiers in the same barrack room.

I am, Sir, yours faithfully,

FREDERICK B. JEFFERISS, F.R.C.S. Edin.,
Chatham, Feb. 17th, 1912. M.R.C.S., L.R.C.P. Lond.

ACCIDENTAL POISONING.

To the Editor of THE LANCET.

SIR,—Might I suggest that all bottles containing poison sold to the public should not only be labelled "poison," but should also bear, in large type, the best means of antidoting such poison when accidentally swallowed? This would be of great use in cases of emergency before the arrival of a doctor.

I am, Sir, yours faithfully,

Fernshaw-road, S.W., Feb. 17th, 1912. (Mrs.) GRACE ROCHE.

"*Practicioner.*"—We think our correspondent, from his pseudonym, is not a practitioner of medicine. Anyhow, there is nothing to be done whatever in the condition.

COMMUNICATIONS not noticed in our present issue will receive attention in our next.

A DIARY OF CONGRESSES.

WE shall publish this diary from time to time that our readers may have under their hands the dates of the approaching scientific Congresses. It is unnecessary to issue the lists of all these functions week by week, and we propose to make only such gatherings as will occur in the immediate future the subject of regular announcement. The following Congresses, Conferences, and Exhibitions are announced for March and April:—

March 7th–11th (Berlin).—Thirty-third Balneological Congress.
March 23rd–April 4th (London, Royal Agricultural Hall).—International Smoke Abatement Exhibition.
April 1st and 2nd (Milan).—Italian National Convention upon the Sexual Question.
" (London).—First Congress of Pure Food and Health Society of Great Britain.
" 1st–7th (Tunis).—Twenty-second Congress of French-speaking Alienists and Neurologists.
" 8th–13th (Rome).—Seventh International Congress of Dermatology and Syphilology.
" 8th–15th (Johannesburg).—Thirteenth South African Medical Congress.
" 9th–11th (Paris).—Congress of Physiotherapy for French-speaking Physicians.
" 9th (Berlin).—Eleventh Congress of the German Society for Orthopædic Surgery.
" 9th–13th (Giessen).—Congress on Study of Families, Inheritance, and Race Hygiene.
" 10th–13th (Berlin).—Forty-first Congress of the German Surgical Society.
" 14th (Berlin).—Eighth Congress of the German Röntgen Society.
" 14th–20th (Rome).—Seventh International Congress on Tuberculosis.
" 15th–18th (Wiesbaden).—Twenty-ninth German Congress for Internal Medicine.
" 21st–24th (Munich).—Twenty-sixth Meeting of the Anatomical Society.
" (London, Olympia).—Ideal Homes Exhibition.

METEOROLOGICAL READINGS.

(Taken daily at 8.30 a.m. by Steward's Instruments.)

THE LANCET Office, Feb. 21st, 1912.

Date.	Barometer reduced to Sea Level and 32° F.	Direction of Wind.	Rain fall.	Solar Radio in Vacuo.	Maximum Temp. Shade.	Min. Temp.	Wet Bulb.	Dry Bulb	Remarks.
Feb. 15	30·14	E.	...	60	48	41	40	42	Overcast
" 16	30·13	S.W.	0·02	60	54	42	48	48	Overcast
" 17	30·07	S.W.	...	78	58	47	45	47	Fine
" 18	29·89	N.E.	...	62	54	47	48	49	Cloudy
" 19	29·53	S.	...	64	53	47	48	50	Fine
" 20	29·42	S.W.	0·04	54	49	45	44	45	Raining
" 21	29·86	WSW	...	53	48	38	40	41	Overcast

The following journals, magazines, &c., have been received:—
Journal of Laryngology, Rhinology, and Otology, Birmingham Medical Review, American Journal of Medical Sciences, Bulletin de la Société de l'Internat des Hôpitaux de Paris, Revue de Médecine,

Revue de Chirurgie, Journal of Mental Science, Revue de Psychiatrie et de Psychologie Expérimentale, South African Medical Record, American Journal of Obstetrics and Diseases of Women and Children, Interstate Medical Journal, American Journal of Surgery, Hospital Gazette, British Journal of Dental Science, Crónica Médica, Medical Review of Reviews, American Medicine, Albany Medical Annals, Journal of Tropical Medicine and Hygiene, British Journal of Dermatology, &c.

Medical Diary for the ensuing Week.

SOCIETIES.

ROYAL SOCIETY OF MEDICINE, 15, Cavendish-square, W. (temporary address during building of new house).

MONDAY.

ODONTOLOGICAL SECTION (Hon. Secretaries—W. W. James, Stanley Mummery): at 8 P.M.

Paper:
Mr. W. W. James: The Dates of the Eruption of Teeth in about 2000 Children under 12.

Casual Communications:
Mr. J. G. Turner: Two Cases of Hypoplasia of Enamel.
Mr. E. Sturridge: An Experiment showing Formation and Migration of Ions.
Mr. J. F. Colyer: Some Radiographs of a Case of Advanced Periodontal Disease.

TUESDAY.

MEDICAL SECTION (Hon. Secretaries—Sir John F. H. Broadbent, Bart., Robert Hutchison): at 5.30 P.M.

Joint Meeting with
SURGICAL SECTION and
SECTION OF ANÆSTHETICS.

Debate:
On a Paper by Mr. T. P. Dunhill of Melbourne: Partial Thyroidectomy under Local Anæsthesia, with Special Reference to Exophthalmic Goitre.

The Debate will be opened by Dr. Hector Mackenzie. The following will take part in the Debate:—Dr. Albert Kocher (Berne), Mr. Wilfred Trotter, Mr. Charters Symonds, Dr. Dudley Buxton, Mr. Donald Armour, Mr. Walter Edmunds, Dr. J. Blumfeld, Dr. H. J. Scharlieb, C.M.G., Dr. G. A. H. Barton, Mr. Rupert Farrant, Mr. H. J. Paterson, Mr. James Berry.

FRIDAY.

LARYNGOLOGICAL SECTION (Hon. Secretaries—W. H. Kelson, Dan McKenzie), at 11, Chandos-street, W.: at 4.30 P.M.

Cases, &c.,
Will be shown by Dr. H. J. Davis, Dr. Watson Williams, Dr. W. H. Kelson, Mr. G. Wilkinson, Dr. Jobson Horne, and others.

SECTION OF ANÆSTHETICS (Hon. Secretaries—Mrs. Dickinson Berry, H. J. Scharlieb, C.M.G.): at 8.30 P.M.

Paper:
Mr. Felix Rood: Ether Infusion Anæsthesia.

Short Communication:
Mr. C. M. Page: Hedona Infusion Anæsthesia.

MEDICAL SOCIETY OF LONDON, 11, Chandos-street, Cavendish-square, W.

MONDAY.—8.30 P.M., Pathological Evening. Specimens will be on view at 8 P.M.

HUNTERIAN SOCIETY, Guy's Hospital, St. Thomas's-street, S.E.

WEDNESDAY.—4 P.M., Clinical Meeting. Cases of interest will be shown by Dr. G. N. Pitt, Mr. W. A. Lane, and other Members of the Staff of the Hospital.

ROYAL SOCIETY OF ARTS, John-street, Adelphi, W.C.

WEDNESDAY.—8 P.M., Mr. H. A. Roberts: Education in Science as a Preparation for Industrial Work.

HARVEIAN SOCIETY OF LONDON, Stafford Rooms, Titchborne-street, Edgware-road, W.

THURSDAY.—8.30 P.M., Discussion on Acute Poliomyelitis and Allied Conditions (opened by Dr. F. Buzzard). The following have promised to take part:—Dr. F. E. Batten, Dr. W. d'Este Emery, Dr. T. B. Hyslop, and Dr. L. Guthrie.

LECTURES, ADDRESSES, DEMONSTRATIONS, &c.

ROYAL COLLEGE OF SURGEONS OF ENGLAND, Lincoln's Inn Fields, W.C.

MONDAY, WEDNESDAY, AND FRIDAY.—5 P.M., Prof. A. Keith: Important Phases in the Evolution of Man.

MEDICAL GRADUATES' COLLEGE AND POLYCLINIC, 22, Chenies-street, W.C.

MONDAY.—4 P.M., Dr. J. M. H. MacLeod: Clinique (Skin). 5.15 P.M. Lecture:—Mr. J. Cantlie: The Diagnosis and Surgical Treatment of Hepatic Ailments.

TUESDAY.—4 P.M., Dr. P. Stewart: Clinique (Medical). 5.15 P.M., Lecture:—Sir George Beatson, K.C.B.: Treatment of Acute Appendicitis—When and How to Operate.

WEDNESDAY.—4 P.M., Mr. S. Handley: Clinique (Surgical). 5.15 P.M., Lecture:—Dr. F. W. Price: Recent Advances in Heart Disease (illustrated by the polygraph).

THURSDAY.—4 P.M., Dr. E. F. Buzzard: Clinique (Medical). 5.15 P.M., Lecture:—Dr. F. W. Price: Recent Advances in Heart Disease (illustrated by the polygraph).

FRIDAY.—4 P.M., Mr. J. F. Cunningham: Clinique (Eye).

POST-GRADUATE COLLEGE, West London Hospital, Hammersmith-road, W.

MONDAY.—10 A.M., Dr. Simson: Diseases of Women. 10.30 A.M., Surgical Registrar: Demonstration of Cases in Wards. 12 noon, Dr. Bernstein: Pathological Demonstration. 2 P.M., Medical and Surgical Clinics. X Rays. Operations. 2.30 P.M., Mr. Dunn: Diseases of the Eye. 5 P.M., Lecture:—Mr. R. Lloyd: Administration of Anæsthetics.

TUESDAY.—10 A.M., Dr. Robinson: Gynæcological Operations. 11 A.M., Mr. Etherington-Smith: Demonstration of Minor Operations. 2 P.M., Medical and Surgical Clinics. X Rays. Operations. Dr. Davis: Diseases of the Throat, Nose, and Ear. 2.30 P.M., Dr. Abraham: Diseases of the Skin. 5 P.M., Lecture:—Dr. H. Pritchard: Clinical Pathology.

WEDNESDAY.—10 A.M., Dr. Saunders: Diseases of Children. Dr. Davis: Operations of the Throat, Nose, and Ear. 10.30 A.M., Surgical Registrar: Demonstration of Cases in Wards. 2 P.M., Medical and Surgical Clinics. X Rays. Operations. Mr. B. Harman: Diseases of the Eye. 2.30 P.M., Dr. Simson: Diseases of Women. 5 P.M., Lecture:—Mr. Etherington-Smith: Clinical. (Lecture II.)

THURSDAY.—10 A.M., Dr. Simson: Gynæcological Demonstration. 12.15 P.M., Lecture:—Dr. G. Stewart: Practical Medicine. 2 P.M., Medical and Surgical Clinics. X Rays. Operations. 2.30 P.M., Mr. Dunn: Diseases of the Eye. 5 P.M., Lecture:—Mr. Baldwin: Practical Surgery. (Lecture V.)

FRIDAY.—10 A.M., Dr. Robinson: Gynæcological Operations. 12.15 P.M., Lecture:—Dr. Pritchard: Practical Medicine. 2 P.M., Medical and Surgical Clinics. X Rays. Operations. Dr. Davis: Diseases of the Throat, Nose, and Ear. 2.30 P.M., Dr. Abraham: Diseases of the Skin. 5 P.M., Lecture:—Dr. Simson: Extra-uterine Gestation.

SATURDAY.—10 A.M., Dr. Saunders: Diseases of Children. Dr. Davis: Operations of the Throat, Nose, and Ear. Mr. Bishop Harman: Diseases of the Eye. 10.30 A.M., Medical Registrar: Demonstration of Cases in Wards. 2 P.M., Medical and Surgical Clinics. X Rays. Operations.

NORTH-EAST LONDON POST-GRADUATE COLLEGE, Prince of Wales's General Hospital, Tottenham, N.

MONDAY.—Clinics:—10.30 A.M., Surgical Out-patient (Mr. E. Gillespie). 2.30 P.M., Medical Out-patient (Dr. T. R. Whipham); Nose, Throat, and Ear (Mr. H. D. Gillies). 3 P.M., Clinical Pathology and Pathological Demonstration (Dr. W. H. Duncan).

TUESDAY.—Clinic: 2.30 P.M., Operations. Clinics:—Medical Out-patient (Dr. A. G. Auld).; Surgical (Mr. Howell Evans); Gynæcological (Dr. A. E. Giles). 3.30 P.M., Medical In-patient (Dr. A. J. Whiting). 4.30 P.M., Lecture:—Dr. R. M. Leslie: Arterio-sclerosis and its Treatment.

WEDNESDAY.—Clinics:—2 P.M., Throat Operations (Mr. Gillies). 2.30 P.M., Children's Out-patient (Dr. T. R. Whipham); Skin (Dr. G. N. Meachen): Eye (Mr. R. P. Brooks). 3 P.M., X Rays (Mr. W. Steuart); Clinical Pathology and Pathological Demonstration (Dr. W. H. Duncan). 5.30 P.M., Eye Operations (Mr. Brooks).

THURSDAY.—2.30 P.M., Gynæcological Operations (Dr. A. E. Giles). Clinics:—Medical Out-patient (Dr. A. J. Whiting); Surgical (Mr. Carson). 3 P.M., Medical In-patient (Dr. G. P. Chappel).

FRIDAY.—2.30 P.M., Operations. Clinics:—Medical Out-patient (Dr. A. G. Auld): Surgical (Mr. E. Gillespie); Eye (Mr. R. P. Brooks). 3 P.M., Medical In-patient (Dr. R. M. Leslie); Clinical Pathology and Pathological Demonstration (Dr. W. H. Duncan). 4.30 P.M., Lecture:—Mr. R. P. Brooks: Derangements of the Ocular Muscles.

LONDON SCHOOL OF CLINICAL MEDICINE, Dreadnought Hospital, Greenwich.

MONDAY.—2 P.M., Operations. 2.15 P.M., Mr. Turner: Surgery. 3.15 P.M., Sir Dyce Duckworth: Medicine. 4.30 P.M., Mr. R. Lake: Ear and Throat. Out-patient Demonstrations:—10 A.M., Surgical and Medical. 12 noon, Ear and Throat.

TUESDAY.—2 P.M., Operations. 3.15 P.M., Dr. R. Wells: Medicine. 2.15 P.M., Mr. R. Carling: Surgery. 4.15 P.M., Sir M. Morris: Diseases of the Skin. Out-patient Demonstrations:—10 A.M., Surgical and Medical. 12 noon, Skin. 4.30 P.M., Special Lecture:—Dr. J. Taylor: Hemiplegia.

WEDNESDAY.—2 P.M., Operations. 2.15 P.M., Dr. F. Taylor: Medicine. 3.30 P.M., Mr. Cargill: Ophthalmology. Out-patient Demonstrations:—10 A.M., Surgical and Medical. 11 A.M., Eye. 3.30 P.M., Special Lecture:—Mr. Cargill: Retinitis. 5 P.M., Mr. McGavin: Surgical Demonstration or Lecture.

THURSDAY.—2 P.M., Operations. 2.15 P.M., Dr. G. Rankin: Medicine. 3.15 P.M., Sir W. Bennett: Surgery. Out-patient Demonstrations:—10 A.M., Surgical and Medical. 12 noon, Ear and Throat. 4.30 P.M., Special Lecture:—Dr. Moon: Cardiac Disease in Children.

FRIDAY.—2 P.M., Operations. 2.15 P.M., Sir J. Rose Bradford: Medicine. 3.15 P.M., Mr. McGavin: Surgery. Out-patient Demonstrations:—10 A.M., Surgical and Medical. 12 noon, Skin.

SATURDAY.—10 A.M., Radiography. 11 A.M., Dr. A. Davies: Pathological Demonstration. 2 P.M., Operations. Out-patient Demonstration:—10 A.M., Surgical and Medical. 11 A.M., Eye.

HOSPITAL FOR SICK CHILDREN, Great Ormond-street, W.C.

THURSDAY.—4 P.M., Lecture:—Mr. Waugh: Abdominal Pain.

NATIONAL HOSPITAL FOR THE PARALYSED AND EPILEPTIC, Queen-square, Bloomsbury, W.C.

TUESDAY.—3.30 P.M., Clinical Lecture:—Mr. D. Armour: Joint Affection in Nervous Diseases.

FRIDAY.—3.30 P.M., Clinical Lecture:—Mr. P. Sargent: Decompressive Operations.

ST. JOHN'S HOSPITAL FOR DISEASES OF THE SKIN, 49, Leicester-square, W.C.

TUESDAY.—6 P.M., Dr. W. Griffith: Bullous Eruptions.

THURSDAY.—6 P.M., Chesterfield Lecture:—Dr. M. Dockrell: Diseases of the Skin Due to Bacillary Infection.

UNIVERSITY OF LONDON (UNIVERSITY COLLEGE), The Francis Galton Laboratory for National Eugenics.

TUESDAY.—8.30 P.M., Dr. D. Heron: A Study of Extreme Alcoholism (Lecture V.)

ROYAL INSTITUTE OF PUBLIC HEALTH, 37, Russell-square, W.C. (in the Lecture Room of the Institute).

MONDAY.—6 P.M., Prof. S. Flexner: The Local Specific Treatment of Infections—The Biological Basis. (Harben Lecture I.)

WEDNESDAY.—6 P.M., Prof. S. Flexner: The Local Specific Treatment of Infections—Experimental Infections. (Harben Lecture II.)

FRIDAY.—6 P.M., Prof. S. Flexner: The Local Specific Treatment of Infections—Epidemic Cerebro-spinal Meningitis. (Harben Lecture III.)

ANCOATS HOSPITAL, Manchester.

THURSDAY.—4.15 P.M., Mr. W. R. Douglas: Renal Calculus. (Post-Graduate Clinic.)

MANCHESTER ROYAL INFIRMARY.

TUESDAY.—4.30 P.M., Dr. Donald: Uterine Fibroids.
FRIDAY.—4.30 P.M., Mr. Wrigley: Demonstration of Surgical Cases.

SALFORD ROYAL HOSPITAL.

THURSDAY.—4 30 P.M., Dr. C. C. Heywood: Serous Pleural Effusion. (Post-Graduate Course).

OPERATIONS.

METROPOLITAN HOSPITALS.

MONDAY (26th).—London (2 P.M.), St. Bartholomew's (1.30 P.M.), St. Thomas's (3.30 P.M.), St. George's (2 P.M.), St. Mary's (2.30 P.M.), Middlesex (1.30 P.M.), Westminster (2 P.M.), Chelsea (2 P.M.), Samaritan (Gynæcological, by Physicians, 2 P.M.), Soho-square (2 P.M.), Gt. Northern Central (2.30 P.M.), West London (2.30 P.M.), London Throat (9.30 A.M.), Royal Free (2 P.M.), Guy's (1.30 P.M.), Children, Gt. Ormond-street (9 A.M.), St. Mark's (2.30 P.M.), Central London Throat and Ear (Minor 9 A.M., Major 2 P.M.).

TUESDAY (27th).—London (2 P.M.), St. Bartholomew's (1.30 P.M.), St. Thomas's (3.30 P.M.), Guy's (1.30 P.M.), Middlesex (1.30 P.M.), Westminster (2 P.M.), West London, (2.30 P.M.), University College (2 P.M.), St. George's (1 P.M.), St. Mary's (1 P.M.), St. Mark's (2.30 P.M.), Cancer (2 P.M.), Metropolitan (2.30 P.M.), London Throat (9.30 A.M.), Samaritan (9.30 A.M. and 2.30 P.M.), Throat, Golden-square (9.30 A.M.), Soho-square (2 P.M.), Chelsea (2 P.M.), Children, Gt. Ormond-street (9 A.M. and 2 P.M., Ophthalmic, 2 P.M.), Tottenham (2.30 P.M.) Central London Throat and Ear (Minor, 9 A.M., Major, 2 P.M.), Royal National Orthopædic (9.30 A.M. and 4 P.M.).

WEDNESDAY (28th).—St. Bartholomew's (1.30 P.M.), University College (2 P.M.), Royal Free (2 P.M.), Middlesex (1.30 P.M.), Charing Cross (3 P.M.), St. Thomas's 2 P.M.), London (2 P.M.), King's College (2 P.M.), St. George's (Ophthalmic, 1 P.M.), St. Mary's (2 P.M.), St. Peter's (2 P.M.), Samaritan 9.30 A.M. and 2.30 P.M.), Gt. Northern Central (2.30 P.M.), Westminster (2 P.M.), Metropolitan (2.30 P.M.), London Throat (9.30 A.M.), Cancer (2 P.M.), Throat, Golden-square (9.30 A.M.), Guy's (1.30 P.M.), Royal Ear (2 P.M.), Children, Gt. Ormond-street (9 A.M. and 9.30 A.M., Dental, 2 P.M.), Tottenham (Ophthalmic, 2.30 P.M.), West London (2.30 P.M.), Central London Throat and Ear (Minor, 9 A.M., Major, 2 P.M.).

THURSDAY (29th).—St. Bartholomew's (1.30 P.M.), St. Thomas's (3.30 P.M.), University College (2 P.M.), Charing Cross (3 P.M.), St. George's (1 P.M.), London (2 P.M.), King's College (2 P.M.), Middlesex (1.30 P.M.), St. Mary's (2.30 P.M.), Soho-square (2 P.M.), North-West London (2 P.M.), Gt. Northern Central (Gynæcological, 2.30 P.M.), Metropolitan (2.30 P.M.), London Throat (9.30 A.M.), Samaritan (9.30 A.M and 2.30 P.M.), Throat, Golden-square (9.30 A.M.), Guy's (1.30 P.M.), Royal National Orthopædic (9 A.M. and 3.30 P.M.), Royal Ear (2 P.M.), Children Gt. Ormond-street (9 A.M. and 2 P.M.), Tottenham (Gynæcological, 2.30 P.M.), West London (2.30 P.M), Central London Throat and Ear (Minor, 9 A.M., Major, 2 P.M.).

FRIDAY (1st).—London (2 P.M.), St. Bartholomew's (1.30 P.M.), St. Thomas's (3.30 P.M.), Guy's (1.30 P.M.), Middlesex (1.30 P.M.), Charing Cross (3 P.M.), St. George's (1 P.M.), King's College (2 P.M.), St. Mary's (2 P.M.), Ophthalmic (10 A.M.), Cancer (2 P.M.), Chelsea (2 P.M.), Gt. Northern Central (2.30 P.M.), West London (2.30 P.M.), London Throat (9.30 A.M.), Samaritan (9.30 A.M. and 2.30 P.M.), Throat, Golden-square (9.30 A.M.), Royal National Orthopædic (3.30 P.M.), Soho-square (2 P.M.), Children, Gt. Ormond-street (9 A.M., Aural, 2 P.M.), Tottenham (2.30 P.M.), St. Peter's (2 P.M.), Central London Throat and Ear (Minor, 9 A.M., Major, 2 P.M.).

SATURDAY (2nd).—Royal Free (9A.M.), London (2 P.M.), Middlesex (1.30 P.M.), St. Thomas's (2 P.M.), University College (9.15 A.M.), Charing Cross (2 P.M.), St. George's (1 P.M.), St. Mary's (10 A.M.), Throat, Golden-square (9.30 A.M.), Guy's (1.30 P.M.), Children, Gt. Ormond-street (9 A.M. and 9.30 A.M.), West London (2.30 P.M.).

At the Royal Eye Hospital (2 P.M.), the Royal London Ophthalmic (10 A.M.), the Royal Westminster Ophthalmic (1.30 P.M.), and the Central London Ophthalmic (2 P.M.), Hospital operations are performed daily.

EDITORIAL NOTICES.

IT is most important that communications relating to the Editorial business of THE LANCET should be addressed *exclusively* "TO THE EDITOR," and not in any case to any gentleman who may be supposed to be connected with the Editorial staff. It is urgently necessary that attention should be given to this notice.

It is especially requested that early intelligence of local events having a medical interest, or which it is desirable to bring under the notice of the profession, may be sent direct to this office.

Lectures, original articles, and reports should be written on one side of the paper only, AND WHEN ACCOMPANIED BY BLOCKS IT IS REQUESTED THAT THE NAME OF THE AUTHOR, AND IF POSSIBLE OF THE ARTICLE, SHOULD BE WRITTEN ON THE BLOCKS TO FACILITATE IDENTIFICATION.

Letters, whether intended for insertion or for private information, must be authenticated by the names and addresses of their writers—not necessarily for publication.

We cannot prescribe or recommend practitioners.

Local papers containing reports or news paragraphs should be marked and addressed "To the Sub-Editor."

Letters relating to the publication, sale and advertising departments of THE LANCET *should be addressed "To the Manager."*

We cannot undertake to return MSS. not used.

MANAGER'S NOTICES.

THE INDEX TO THE LANCET.

The Index and Title-page to Vol. II. of 1911 were given in THE LANCET of Dec. 30th, 1911.

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ON
GLYCOSURIA.

Delivered before the Medical Society of London.

BY ARCHIBALD E. GARROD, D.M., M.A. OXON., F.R.C.P. LOND., F.R.S.,

PHYSICIAN TO, AND LECTURER ON CHEMICAL PATHOLOGY AT, ST. BARTHOLOMEW'S HOSPITAL; PHYSICIAN TO THE HOSPITAL FOR SICK CHILDREN.

LECTURE II.*

Delivered on Feb. 19th.

MR. PRESIDENT AND GENTLEMEN,—It will be remembered that the latter portion of my first lecture was devoted to a discussion of potential or alimentary glycosuria—in other words, to conditions in which tolerance of glucose is depressed below its normal limit, but not so greatly depressed as to be overtaxed by an ordinary diet. The metabolic error present in such conditions is only revealed when an excessive dose of glucose is administered as a test.

I propose to pass on this evening to the consideration of spontaneous glycosuria—that is to say, the excretion of glucose by patients whose diet contains no conspicuous excess of carbohydrate foods. Such glycosuria may occur as a transient phenomenon during a few successive hours or days; may persist for weeks or even months; or again, may be continuous throughout the remainder of the patient's lifetime, unless restrained by restriction of the carbohydrate intake.

TRANSIENT OR TEMPORARY GLYCOSURIA.

Transient glycosuria may result from widely different causes. That due to a toxic substance will cease when the administration of the substance is discontinued, whether it be due to a metabolic disturbance or to a lowering of the retentive power of the kidneys. The glycosuria which results from emptying of the glycogen reservoirs is also transient, and ceases when the reservoirs are empty; and again, glycosuria of brief duration may be due to some temporary derangement of carbohydrate metabolism, owing to causes at work within the organism.

The cases in which such temporary metabolic glycosuria occurs have to be divided into two distinct classes. In the one class may be grouped all those cases in which the tolerance of carbohydrates is continuously depressed and the patient is always on the verge of glycosuria. In such cases spontaneous excretion of glucose will occur when, during some of the fluctuations to which it is liable, the tolerance falls even below its ordinary low level, or whenever some slight excess of carbohydrate food is taken by the patient. Into this group fall the cases of alimentary glycosuria ex amylo referred to in the previous lecture, in which sugar may only be excreted a few hours after breakfast, which is the meal at which most starch and sugar are wont to be taken.

In contrast to such temporary glycosuria, which may be described as the false variety (false, that is to say, as regards its temporary character), is the truly temporary variety, which may also result from disturbance of metabolism as well as from the other causes just referred to, in which, after the urine has contained sugar during a longer or shorter period, tolerance for carbohydrates becomes completely restored. In such cases the recovery is not, as a rule, abrupt, for lowered tolerance for carbohydrates may persist for a time and gradually disappear after the spontaneous excretion of sugar has ceased. It must be pointed out that fluctuations of tolerance are sometimes very wide, and experience teaches that what appears to be a complete recovery is not always permanent.

We have, most of us, met with patients who have assured us that at some previous period of their lives they suffered from diabetes, and were more or less strictly dieted over a longer or shorter period, but who have long discarded all restrictions of carbohydrate foods, and nevertheless exhibit no symptoms of diabetes, and no longer excrete any sugar.

Such evidence, although it is far too incomplete to afford scientific proof, serves to create the impression that a few sufferers from a diabetes of some duration do actually recover completely. Many recorded instances serve to strengthen this impression, and a very small number have been studied with sufficient accuracy and completeness to carry conviction. It is astonishing how few such cases are really conclusive. As a rule, the records are deficient in evidence either that the reducing substance excreted in the urine was actually glucose, or that there was a complete recovery of carbohydrate tolerance after the glycosuria ceased; and many others have not been followed up for any considerable period after that event.

Teschemacher [1] has described the case of a man, aged 57, who was first seen by him in the summer of the year 1899. Sugar had been found in his urine six months previously, and the diagnosis of mild diabetes had been made. After a course of treatment at Neuenahr, together with appropriate restrictions of diet, he ceased to excrete sugar, and although he resumed an ordinary diet soon afterwards, there was no return of the glycosuria. His urine was examined at intervals, short at first and longer later, up to the time when, no less than ten years afterwards, he again came under Teschemacher's care with albuminuria, high pulse tension, and dilatation of his hypertrophied heart. The albumin had first been detected in his urine at one of the periodic examinations in 1906, but at no such examination had glucose been found. I know of only one instance in which the period of observation after recovery has been more prolonged.

A case recorded by Hürter [2] in 1910 is that of a girl, 10 years of age, whose parents were healthy, but some of whose kinsfolk had suffered from diabetes. In July, 1908, she had suffered from an intestinal catarrh, accompanied by urticaria, which had attacked two other members of her family at the same time. There had been several recurrences of the intestinal symptom since. Four weeks before the child came under observation she had suffered from an attack of vomiting after a slight indiscretion of diet, and from that same day had suffered from excessive hunger and thirst; the urine was often abundant, and she had lost flesh. Sugar was detected in her urine in the third week of the illness. Physical examination revealed nothing amiss in the child's abdomen, or nervous system, but the urine contained no less than 9 per cent. of glucose, and yielded a feeble ferric chloride reaction. As the sudden onset suggested an acute affection of the pancreas Schmidt's test diet was given, and his silk bag test was applied, but no evidence of pancreatic disease was thereby afforded. The patient was strictly dieted, and the output of glucose fell from 210 grammes to 5 grammes in the 24 hours, and after several days of vegetable diet the glycosuria ceased in a little more than a week after the commencement of dietetic treatment. On a single occasion, some ten days later, the reactions of sugar were again obtained. Seven months later the child had gained 6 kilogrammes in weight, all the symptoms had disappeared and there had been no recurrence of glycosuria. Moreover, the taking of 420 grammes of white bread caused no excretion of sugar, and a dose of 50 grammes of glucose was equally without effect. Since then the patient had returned to an ordinary diet, and the urine had remained sugar-free.

This case has been quoted at length because it is specially remarkable in several respects. In the first place, because the patient was a child, and it is a familiar fact that the prognosis of diabetes in children is especially sinister; secondly, because of the very large output of glucose, which was comparable to that seen in the gravest diabetic cases; and thirdly, because of the recovery of tolerance after the attack. All that is to be wished for is a longer period of after-observation, a gap in the evidence which lapse of time may supply. The case is also of special interest because of the association of the temporary diabetes with gastro-intestinal disturbance, a subject to which I shall have occasion to return later.

The necessity of caution in pronouncing that a patient has actually recovered, unless prolonged observation has followed, is well exemplified in a case described by Leo [3] of a man aged 31, who between 1901 and 1904 developed diabetes with polyuria and thirst on three separate occasions, and whose urine contained at times as much as 6 per cent. of glucose. In one of the sugar-free intervals he had so completely

* Lecture I. was published in THE LANCET of Feb. 24th, 1912, p. 483

[1] Deutsche Medizinische Wochenschrift, 1910, Band xxxvi., p. 401.
[2] Medizinische Klinik, 1910, Band vi., p. 140.
[3] Berliner Klinische Wochenschrift, 1904, Band xli., p. 1293.

recovered his carbohydrate tolerance that he was able to take a test meal of 400 grammes of bread, 500 grammes of potato, and 100 grammes of sugar without inducing glycosuria. This was in the month of July, and yet by the following October the diabetic symptoms had reappeared.

I will refrain from quoting other cases here as I shall have to refer to some such later, including one of no small interest which has been under my own observation for two years past.

Although temporary glycosuria of slight degree is not very uncommon, there can be no question that the impression that diabetes, once established, is permanent, is justified in the immense majority of instances. In some cases, at least, this malign tendency is attributable to the permanent character of the underlying disease upon which the disturbance of carbohydrate metabolism depends, as, for example, a chronic fibrosis of the pancreas. On the other hand, the conspicuous influence which dietetic treatment exerts upon the course of the malady, and the great recovery of tolerance of carbohydrates which often results from a period of strict dietary, seem to show conclusively that to work the damaged machine is to aggravate the damage, whereas if the mechanism be rested for a time it tends to recover some of its lost efficiency.

This raises a question of the greatest interest, to which no definite reply can yet be given—namely, whether or no a glycosuria, that has its origin in a lesion which is itself of a temporary character and admits of recovery, can be rendered permanent by neglect of dietary restrictions during the active period.

Undoubtedly recovery takes place in some cases of glycosuria in which no restriction of the carbohydrate intake has been imposed during the glycosuric period; but it appears to me that there are sufficient grounds for suspecting that the answer to the above question should be in the affirmative, to cause us to act upon that assumption in our capacity as practical physicians. In matters of health and sickness, of life and death, we cannot always afford to wait for scientific proof before adopting therapeutic precautions which we feel confident will do no harm.

The Diabetic Tendency.

Closely akin to this question is that of the diabetic tendency. There can be no doubt that members of certain races—for example, of the Jewish race—are more liable to diabetes than other men, and I think that certain colourings of hair and skin, which are probably racial indications, are specially common among diabetic patients. Again, in some instances, the hereditary tendency is so pronounced as to admit of no question. Are we to suppose that in some people carbohydrate metabolism is, so to speak, in a condition of unstable equilibrium, so that it is more easily upset, and when upset recovers itself less readily than in the majority of the human race?

If, as some now think, the internal secretion of the pancreas be controlled by balanced influences emanating from other glandular organs, such as the thyroid and pituitary body, the above conception is more easily entertained.

On the other hand, it must be remembered that certain organic lesions, such as granular kidney and arterio-sclerosis, are to some extent hereditary, and that the disturbance of carbohydrate metabolism which attracts our notice may be merely the result of underlying lesions, the tendency to which is transmitted in certain families and in certain races.

SHARE OF VARIOUS ORGANS IN CAUSATION.

Such considerations lead, by an easy transition, to the introduction of my main theme—namely, the share taken by various organs of the body in the causation of glycosuria.

If I may be permitted to lay before you, at the outset of this discussion, a rough sketch in outline of the conception of this subject which has been in my mind when framing these lectures, and which is doubtless largely derived from the study of the writings of Falta and his fellow workers in von Noorden's clinic, it will take some such shape as this.

We may conceive of a group of enzymes carrying on the actual work of the metabolism of carbohydrates, as of other branches of metabolism. We may picture to ourselves the glands of internal secretion as directing, controlling, and supervising the work of the enzyme labourers, now restraining their activity, and now stimulating them to increased exertions. Of the several glands concerned in this work, among which the pancreas stands pre-eminent, we may conceive of some as helping and some as hindering the actions of others, so that, if the influence of one of them be withdrawn, or be too powerfully exerted, the balance normally maintained is overthrown and disorder results. Lastly, we may picture these overseer glands as themselves controlled by a still higher authority resident in the nervous system, for the influence of the nervous system upon the glands of internal secretion hardly admits of doubt.

This is nothing more than a working hypothesis, but there is much which may be adduced in support of some of its contentions, and it is difficult to frame an alternative hypothesis which fits in so easily with many ascertained facts. If it contain any stratum of truth, it may indicate why it is that glycosuria occurs as a symptom of so many different morbid disturbances, and, to some extent, why its occurrence is apparently so capricious.

Glycosuria and the Nervous System.

The influence of the nervous system upon the metabolism of carbohydrates is manifested in various ways. We can all of us testify to its influence upon the course of diabetes, for we have seen cases in which mental worry, overwork, or shock has been responded to by an obvious aggravation of symptoms, whereas when these factors are removed the malady may resume its ordinary course. Again, there are many well-authenticated cases in which diabetes of a severe kind, persisting up to the death of the patient, has developed after a severe psychic shock or after an injury to the head. I do not propose to quote records of such cases, an admirable series of which will be found in the great works of Naunyn[4] and of Lepine[5] on diabetes mellitus.

Again, cranial injuries and also psychic disturbances may induce transient glycosuria lasting only for a day or two, or at most for a few days, and the same is observed in not a few cases of cerebral hæmorrhage and sometimes after epileptiform convulsions. Examples of both these latter varieties have come under my own observation during the past few weeks. There is much to suggest that such transient glycosurias are of the same nature as "puncture" glycosuria and result from emptying of the glycogen reservoirs under the influence of the centre in the floor of the fourth ventricle.

There is reason to believe that a similar effect may follow a variety of more or less violent "insults" to the organism, and that the transient excretion of glucose which has been observed after severe traumata which do not involve the head; after operations abdominal and other (although in this connexion the possibility of anæsthetic glycosuria has to be taken into account); after ligature of the bile-ducts in animals, and in association with attacks of gall-stone colic, belongs to this same class.

So great has been the influence of Claude Bernard's discovery on the views of the profession upon such matters that it has been assumed that in most of the cases in which cerebral lesions, such as hæmorrhages, tumours, and meningitis, have been followed or accompanied by glycosuria, this has been due to an implication of the glycosuric centre. In some instances there has been evidence of such extension, but in many cases there is none, and it is uncertain whether a persistent glycosuria is ever attributable to a lesion of the glycosuric centre.

It is probable that the excretion of sugar in cases of gross lesions of the brain and spinal cord may be induced in several different ways. Sometimes it may result from disturbances of internal secretion, and it is possible that in the same way as a violent psychic disturbance may be followed by the development of exophthalmic goitre, such a disturbance may, by way of a similar mechanism, excite glycosuria. Nor must we forget that attached to the brain is a gland of internal secretion, the pituitary, which undoubtedly takes part in controlling carbohydrate metabolism. Again, nervous lesions sometimes result from diabetes, and it is important to exclude from consideration all cases in which it is probable that the glycosuria may have been in existence before the development of symptoms referable to the nervous system.

In this connexion, let me select for special consideration a variety of glycosuria which has interested me of late—namely, that which occurs in the course of tuberculous meningitis. That sugar is occasionally present in the urine

[4] Der Diabetes Mellitus, second edition, 1906.
[5] Le Diabète Sucré, 1909.

n cases of meningococcal meningitis has long been recognised, and examples have been recorded by Mannkopf,[6] Emil Adler,[7] and others; but I have never met with it in an undoubted case of the post-basal meningitis of infants. The glycosuria of tuberculous meningitis, on the other hand, has passed almost unnoticed, although its occurrence has been mentioned by Loeb,[8] by Still,[9] and by Aldren Turner and Grainger Stewart.[10] Yet it is present in more than 30 per cent. of all cases of the disease, as some observations which I have carried out in association with Dr. R. S. Frew, at the Hospital for Sick Children, show.

As a rule, sugar appears in the urine only during the last week of life, and usually during the last two days. The urine reduces Fehling's solution readily, the reducing substance present has repeatedly been proved to be glucose by its optical properties, fermentation by yeast, and the characters and melting point of the osazone. The quantity is usually some 0·3 per cent., and seldom greater than 1 per cent.

Careful examinations which Dr. Frew has carried out of the distribution of the meningitis, in the cases with and without glycosuria respectively, lend no countenance to the idea that the glycosuria is due to the approach of the inflammatory changes to the glycosuric centre; but the influence thereupon of the internal pressure of the accumulated cerebro-spinal fluid, the internal hydrocephalus, is a factor which hardly admits of estimation. Nor do the anatomical findings lend support to the suggestion, which Loeb put forward, that the implication of the pituitary gland is concerned in the production of the glycosuria.

A third possible explanation is that the glycosuria of tuberculous meningitis is of the asphyxial variety. It is apt to appear at the period when the respirations become shallow and grouped, with periods of apnœa, conditions which may well favour imperfect ventilation and accumulation of carbon dioxide in the lungs and tissues. Thus the excretion of sugar in tuberculous meningitis offers a good example of the fact that there are various possible explanations of this symptom when it occurs in association with lesions of the nervous system, and illustrates the necessity of caution in drawing sweeping conclusions from such associations.

Glycosuria and Diseases of the Pancreas.

The connexion between diseases of the pancreas and the excretion of sugar in the urine, which has long been suspected on clinical grounds, was proven by the experimental researches of Minkowski and by his demonstration that complete removal of that gland was, in the case of dogs, followed by a grave form of diabetes. The question is no longer whether the pancreas has a share in the causation of diabetes, but how great that share may be. It is difficult to offer any other explanation of the observed facts than that the pancreas produces an internal, as well as the external secretion which plays so important a part in digestion. The available evidence points strongly to those groups of cells which are known as the islands of Langerhans as the structures which produce the internal secretion, for the view that these are not distinct structures, but rather exhausted portions of the glandular tissue, has not met with any wide acceptance.

If the accepted view be correct, we must look upon the pancreas as having, disseminated through its structure, a gland of internal secretion, and, seeing how small a portion of such a gland, so long as it remains functionally active, is able to carry on its work, it is not surprising that a removal of pancreatic tissue which falls far short of completeness fails to induce diabetes in a dog, nor that in many cases grave disease of the gland fails to cause glycosuria. Indeed, as we might expect, diseases of the pancreas which are themselves of less grave kinds, but produce widespread tissue changes, are the most apt to disturb the metabolism of carbohydrates.

The diagnosis of diseases of the pancreas presents great difficulties. The gland is so deeply seated that for the recognition of its slighter maladies we are compelled to rely almost entirely upon circumstantial evidence, and such evidence relates chiefly to the adequacy of its external secretory activity. Hence our views as to its pathology have acquired an unduly lurid aspect, and are based largely upon acute hæmorrhagic pancreatitis, necrosis, obstruction of the duct by calculi, and carcinoma which is especially apt to develop in the head of the gland.

Carcinoma of the pancreas gives rise to a group of symptoms which suffice, in most cases, for its accurate diagnosis. Pain and palpable swelling are met with in cases of acute inflammation, but the symptoms are often ambiguous, and not infrequently the correct diagnosis is only made upon the post-mortem table.

Glycosuria with hyperglycæmia is the only known symptom of failure of the internal secretion, and hence this symptom is of little value for the proof of its own origin. Only when it is attended by indications of associated failure of the external secretion can a pancreatic origin be more than suspected.

Although it is an arguable proposition that the internal secretion of the pancreas is the sole controller of carbohydrate metabolism, and that it is always concerned in the causation of what I have spoken of as metabolic glycosuria, there can hardly be any question that actual disease of the pancreas is not the primary cause of all such glycosuria, but rather that in some cases the assumed influence of the pancreas is secondary, its internal secretion being itself controlled by those of other organs.

In carcinoma of the pancreas glycosuria is an uncommon symptom, as we should expect, seeing that the growth is usually so localised, but Miraille,[11] who collected records of 50 cases, found this symptom noted in 13, as against 37 in which it was absent. In two of the 37 cases in which there was no spontaneous excretion of sugar, there was lowering of tolerance for glucose. In a case which came under Miraille's own observation glycosuria was present for a time, but ceased some two months before the patient's death, and he states that an interval as long as 11 months had been observed between the cessation of glycosuria and the death of a patient.

Glycosuria is also rare in cases of grave pancreatitis, Brentano[12] has described a case of necrosis and sloughing of the gland, in which a subdiaphragmatic abscess was opened. The patient eventually recovered and left the hospital with a pancreatic fistula and with persistent diabetes. Strube[13] also observed glycosuria, which ceased a few days before death, in a fatal case of necrosis. Marwedel has recorded[14] a case of abscess of the pancreas in which sugar was excreted during a few days only.

Benda and Stadelmann[15] found 3 to 5 per cent. of sugar in the urine of a patient who succumbed to hæmorrhagic pancreatitis with fat-necrosis, in whose previous history there had been nothing to suggest an antecedent diabetes; and in 1901 Mr. Gifford Nash[16] observed areas of fat-necrosis in a case in which he operated for gall-stones. The patient recovered, and during convalescence the sugar which had been present disappeared from the urine. However, Mr. Mayo Robson[17] supplies the further information that in 1902, 1904, and 1906 sugar was again found in small amounts, and Cammidge's reaction was on each occasion positive.

In association with pancreatic calculi, also, diabetes has repeatedly been observed.

We are justified in supposing that the pancreas, like the salivary glands, is the seat of inflammatory affections of an altogether milder kind, and which do not manifest themselves by any unequivocal localising symptoms. Naturally we know little of such forms of pancreatitis, for they are little likely to bring about the death of those who suffer from them. Such information as we possess is chiefly derived from laparotomies, during which swelling or undue hardness of the gland may be detected by the finger of the surgeon. I am now speaking of inflammatory troubles in the pancreas which admit of recovery, for fibrosis of the gland, which may be one of the sequels of such troubles, is a familiar post-mortem finding.

Some additional aid in diagnosis may be afforded by the effect of pressure exerted by the swollen head of the pancreas upon the common bile-duct, and, just as deep jaundice due to complete biliary obstruction is one of the most conspicuous symptoms of pancreatic carcinoma, so also we may well imagine that jaundice may result from inflammatory swelling of the head of the gland.

[6] See Naunyn: Die Diabetes Melitus, 1906, p. 72.
[7] Zeitschrift für Heilkunde, 1904, Band xxv., II. Innere Medizin, p. 1.
[8] Deutsches Archiv für Klinische Medizin, 1884, Band xxxiv., p. 447.
[9] Encyclopædia Medica, 1901, vol. vii., p. 481.
[10] Text-book of Nervous Diseases, 1910, p. 301.
[11] Gazette des Hôpitaux, 1893, vol. lxvi., p. 889.
[12] Archiv für klinische Chirurgie, 1900, Band lxi., p. 789.
[13] Charité Annalen, 1897, Band xxix., p. 222.
[14] Münchener Medizinische Wochenschrift, 1901, vol. xlviii., p. 11.
[15] Deutsche Medizinische Wochenschrift, 1896, Vereins-Beilage, p. 138.
[16] THE LANCET, 1902, vol. ii., p. 1192.
[17] Brit. Med. Jour., 1910, vol. i., p. 975.

Oser, writing in 1898,[18] suggested that some cases of catarrhal jaundice may be so produced by a transitory swelling of the head of the pancreas, and Mr. Mayo Robson[19] has expressed still more boldly his belief that many cases of transient jaundice admit of such an explanation. However, the pancreatic and biliary ducts are so close together that it is quite as probable that they may both be simultaneously affected by an extension of catarrh from the duodenum into which they open.

We may also well imagine that a catarrhal inflammation of the pancreas may give rise to glycosuria, although it may cause little interference with the external secretion of the gland, and that, as in other pancreatic diseases, excretion of sugar will be the exception rather than the rule.

The following case may well have had such an origin :—

A man, aged 58, came under my observation in the out-patient department of St. Bartholomew's Hospital in October, 1909. He exhibited a moderate degree of jaundice, which had been first noticed three days previously, and at the same time had begun to complain of thirst. Cutaneous itching had been noticed for seven days. He stated that his appetite had been poor for ten weeks previously, and that for four weeks he had felt weak and had been losing flesh. He had experienced no pain, and gave no history of anything resembling gall-stone colic. His motions had tended to be loose for years, and his bowels had been moved two or three times each day. His only previous illness had been an attack of bronchitis two years before. He was admitted to the hospital under my care on Oct. 29th, 1909.

On admission it was noticed that the patient's tongue was slightly furred. His liver was enlarged, and reached four fingers breadth below the costal margin. There was no tenderness in the region of the gall-bladder, which was not palpable. His skin and conjunctivæ were jaundiced, but his motions were not very pale. Nothing abnormal was found in his chest, save a slight degree of emphysema of the lungs. The patient was fairly well nourished. His urine, which was bile-stained, was found to contain a reducing substance, which was proved to be glucose, in a quantity amounting to 2·8 per cent. as estimated by the dextro-rotation. The urine contained no albumin, and did not yield the reactions of acetone nor diacetic acid. The total volume of urine passed in 24 hours varied between 570 and 1285 c.c.

It was thought probable that, in spite of the absence of pain and of tenderness or enlargement of the gall-bladder, the patient might be suffering from gall-stones, which had set up a pancreatitis. Cammidge's reaction gave a negative result, but it is much to be regretted that the various other tests of the pancreatic functions were not applied in this case. Shortly after the patient's admission it was noticed that the jaundice was passing off, and by Nov. 16th all traces of it had disappeared, as in cases of simple catarrhal jaundice. There was never any pain or vomiting, and the temperature did not rise above the normal during his stay in the hospital.

The carbohydrates of his diet were gradually reduced; protene and casoid bread were substituted for ordinary bread, and eventually he was put upon a strict diet, save that he was allowed small quantities of milk. However, sugar, although reduced in amount, continued to be present in his urine. His weight remained practically unaltered.

The sugar estimations are embodied in the following table :—

Date. 1909	Volume of urine in 24 hours. c.c.	Percentage of sugar.	Total output of sugar. Grammes.
Nov. 1st	1171	3·6	42·15
,, 2nd	1052	3·6	38·05
,, 3rd	1200	3·8	45·7
,, 4th	1143	3·8	43·43
,, 7th	571	4·9	28·3
,, 11th	714	3·6	26·0
,, 12th	1428	1·0	14·28
,, 14th	1071	1·2	12·8
,, 17th	857	1·0	8·57
,, 23rd	1142	0·67	7·7
,, 25th	1140	1·08	12·3
,, 29th	714	1·6	11·5
Dec. 1st	922	0·79	7·3
,, 9th	1000	0·48	4·8

[18] Nothnagel's Handbuch, vol. xviii., Theil 2, p. 111, 1898.
[19] Loc. cit., sub. 17.

On Dec. 7th the diet was relaxed, preparatory to his leaving the hospital, by the addition of 2 ounces of white bread, and on Dec. 10th the allowance of bread was increased to 4 ounces.

On Dec. 31st, 1909, the patient presented himself in the out-patient department. He had kept to the diet prescribed as far as he had been able, and for the first time a specimen of urine which he brought with him contained no sugar. On Jan. 14th, 1910, as there was still no sugar in the urine which he passed at his visit, nor in that collected at an earlier time in the day, the allowance of bread was increased to 6 ounces. On Jan. 28th there was still no glycosuria, and on Feb. 4th sugar was still absent, although he had taken an unrestricted diet for a week. A fortnight later, after a diet rich in carbohydrates, including sugar, several specimens were examined and were still sugar-free.

Since then repeated examinations have always failed to detect sugar in his urine, and the patient has now kept free from glycosuria for two years, although he has discarded all restriction of carbohydrates, and has taken some 14 ounces of bread in the day, in addition to other starchy foods. On Sept. 17th, 1911, he came into hospital for a night. On the morning of the 18th he took 100 grammes of glucose, fasting, but no sugar was found in the urine passed during the succeeding 12 hours.

Here we are confronted with an example of complete recovery of carbohydrate tolerance, a recovery which has been maintained for two years, by a man who, during two months at least, exhibited a glycosuria of moderate degree, which, whilst it lasted, was greatly diminished, but never removed by restriction of diet. Although there was no polyuria whilst he was in the hospital, the name diabetes can hardly be refused to the condition which was at that time present.

It must be acknowledged that the evidence of a temporary affection of the pancreas is very far from complete, although the association of the glycosuria with catarrhal jaundice is certainly suggestive. I do not attach very great weight to the negative outcome of Cammidge's test in this instance; for although I believe that this test, if performed by one thoroughly accustomed to the technique, and taken in conjunction with other tests, and especially with estimations of the total fat and unsplit fat in the stools, affords valuable aid in the diagnosis of pancreatic disease, its indications, especially when negative, are not regarded by most observers as in themselves conclusive. The case serves to illustrate the importance of trying all available tests, even in cases which do not, at first sight, promise an unusual outcome; for its value to the study of temporary diabetes would have been immensely enhanced had the tests of pancreatic efficiency been carried out in the early period.

Even as it stands it shows that the prognosis of diabetes is not necessarily hopeless, although the possibility of relapse cannot even yet be excluded.[20]

There is one variety of transitory pancreatitis known to us which is of special interest in connexion with the subject under discussion—namely, that which occasionally occurs as a complication of mumps. The clinical evidence that the affection so diagnosed is really a pancreatitis is very strong. The symptoms develop as the parotitis subsides, in the peculiar metastatic manner, which is a familiar feature in connexion with other glands, such as the testis and mamma, and is suggestive of a similar glandular inflammation. The abdominal pain, with tenderness, or even swelling in the region of the pancreas, and the subsidence of the acute symptoms in the course of a few days, recall the clinical features of the primary parotitis. With it are often associated intestinal disturbances, such as diarrhœa.

In a case which Finizio[21] has recently placed on record, the patient, a child, aged 11 months, developed, about a week after the appearance of mumps, abdominal pain, epigastric tenderness, vomiting, and diarrhœa. After a few days the pain became less severe, but vomiting continued, and the fæces, which had a very offensive odour, contained large quantities of neutral fat. A chemical analysis showed that some 60 per cent. of the fat was unsplit, as is the case

[20] Since these words were written I have again seen this patient and examined three specimens of urine, passed in the early morning, at 1.30 P.M., and at 2.30 P.M. respectively. The first and last specimens did not reduce Fehling's solution at all, but that passed at 1.30 reduced feebly, and yielded a crystalline osazone which melted at 206°. The saving clause is therefore regrettably justified.
[21] La Pediatria, 1909, vol. xvii., p. 674.

in the steatorrhœa which sometimes accompanies pancreatic diseases. In the course of a month the fæces gradually regained their normal character, and the infant made a complete and satisfactory recovery. The occurrence of such stools, when taken in conjunction with the other symptoms mentioned, afforded very strong evidence of the presence of an inflammation of the pancreas, the benign nature of which is what might be expected in a lesion associated with mumps.

Dr. P. J. Cammidge, who has examined the urine of eight patients with abdominal symptoms suggestive of this form of pancreatitis, has been kind enough to let me have the results of his examinations. In four cases the pancreatic reaction was positive, and in one of these a second examination, after an interval of a month, gave a negative result.

On the other hand, as far as I am aware, no one has ever yet seen the inflamed pancreas in such a case. We do not know what portion of the gland is chiefly affected, although the analogy of the other manifestations of the disease would lead us to expect that the entire pancreas would be involved and would be tensely swollen. The abdominal symptoms certainly indicate a far more acute pancreatitis than that which is suggested as the cause of many attacks of catarrhal jaundice.

Yet a somewhat extensive search through the literature of this subject has not brought to my notice any case in which jaundice has accompanied the pancreatitis of mumps, and in the records of many of the cases, even including Finizio's case with steatorrhœa, it is expressly stated that the urine contained no sugar. Indeed, I had almost come to think that one would be justified in asserting that this form of pancreatitis is never accompanied by glycosuria, when I lighted upon a case described by Vico Barbieri[22] in 1909 which shows clearly that no such sweeping assertion can be made.

Barbieri's patient was a boy, 6 years of age, who acquired mumps in the midst of an epidemic of that disease. Six days after the onset he complained of continuous pain above the navel, which radiated round into the right lumbar region, and he suffered from vomiting and diarrhœa. When the child was first seen the pain had persisted for four days; there was still some swelling of the right parotid gland, but it was no longer painful. There was tenderness in the epigastrium, in the middle line, two fingers breadth above the umbilicus. The temperature was slightly raised; the fæces were pale and showed many fat globules. The urine, which amounted to 2400 c.c. in 24 hours, had a specific gravity of 1034, was free from albumin, but reduced Fehling's solution and yielded Nylander's test. Unfortunately circumstances prevented estimation of the sugar. About a fortnight later all the symptoms had disappeared and the glycosuria had ceased. The daily output of urine had fallen to 600 c.c. and its specific gravity to 1015.

In one of Dr. Cammidge's cases above referred to sugar was found in the urine when the pancreatic reaction was obtained, but was absent a month later when the pancreatic reaction had also ceased.

In 1899 A. F. Harris[23] described a case of diabetes mellitus in a man, aged 42, in which sugar had been first found in the urine a month after an attack of mumps, and mentioned that he had seen in literature several references to the effect that diabetes has not infrequently followed mumps, but he does not give any references.

We must conclude that in exceptional cases the pancreatitis of mumps is attended by glycosuria, which may cease as the pancreas regains its normal condition, but that possibly lasting diabetes occasionally results. The most important point is that recovery from a pancreatic glycosuria may occur.

There is important evidence that in certain suitable cases operative interference at an early stage may avert irreparable injury to a damaged pancreas, and may arrest glycosuria. Reference has already been made to Mr. Gifford Nash's case, but in it the pancreatic lesion was of a grave kind, and the glycosuria was not permanently arrested.

In 1907 Mr. Mansell Moullin[24] recorded the case of a middle-aged woman admitted to hospital with cholecystitis and cholangitis, and who had suffered from biliary colic 11 years previously. The urine had been repeatedly examined in October, 1906, but the notes of that time made no mention of glycosuria. On her admission in 1907 it had a specific gravity of 1050, and contained glucose to the amount of 7 per cent. An operation was performed on April 16th, and gall-stones were removed; the pancreas was felt to be firm, but not sufficiently so to suggest a chronic pancreatitis. After the operation the sugar diminished progressively, and by May 4th had completely disappeared from the urine. Here the period of observation was too short to show how far recovery was permanent.

In a recent very suggestive lecture delivered by Mr. Mayo Robson[25] in 1910, he describes cases in which glycosuria ceased after operations, including examples of carcinoma of the head of the pancreas secondary to carcinoma of the bile-ducts; cases of biliary calculus in which the pancreas was found to be swollen at the time of operation; of duodenal ulcer with cholangitis and interstitial pancreatitis; and of catarrhal pancreatitis with gall-stones. In conclusion, he urges that each case of glycosuria should be considered from the point of its etiology, seeing that certain cases of glycosuria of pancreatic origin are curable, and that in others the progress of the disease may be arrested by suitable surgical measures, which can be carried out with little risk to the patient.

Of all diseases of the pancreas chronic interstitial pancreatitis is that which is most often found post mortem in cases of diabetes, and, conversely, that which most commonly gives rise to glycosuria. Opie,[26] who has made a special study of this subject, describes two varieties of interstitial pancreatitis—namely, an interacinar variety in which the newly formed fibrous tissue is distributed through the lobules of the gland and between the acini, with the result that the islands of Langerhans become early involved; and an interlobular variety in which they only suffer at a late stage. The change induced in the islands is of the nature of a hyaline degeneration. Other observers, and among them Weichselbaum,[27] have found the islands of Langerhans to be reduced in numbers, and to have undergone structural changes, in most fatal cases of diabetes mellitus.

The fibrotic changes referred to may be due to extension from the biliary ducts, as in gall-stone cases, or may apparently result from infection from the alimentary tract. Again, G. Hoppe Seyler[28] has shown that fibrosis of the pancreas may occur in association with generalised arterio-sclerosis and fibrosis of other organs, and that in this way may be explained the cases in which diabetes originates in later life in association with granular kidney and gout.

Glycosuria and Hepatic Diseases.

Seeing how important a part the liver plays in carbohydrate metabolism, we should be surprised to find how insignificant a share diseases of that great laboratory gland appear to take in the causation of glycosuria, were it not that experience teaches us that the same holds true for other metabolic processes of which it is the seat.

It is true that glycosuria often occurs in clinical association with morbid changes in the liver, and some authorities—including Naunyn and Saundby[29]—consider that cases of hepatic glycosuria form a definite group; but in some cases, and perhaps in the majority, the association is to be explained by extension of the morbid process to the pancreas. Such an explanation may well apply to the examples of glycosuria with ordinary hepatic cirrhosis, although Naunyn has met with such cases in which the pancreas showed no signs of morbid change, and it is certainly true of the rare and remarkable cases with hæmochromatosis, known by the name of "bronzed diabetes."

To the same cause may be assigned the not uncommon development of glycosuria in association with chronic cholelithiasis, whereas the transitory excretion of sugar during paroxysms of gall-stone colic, described by Gans[30] and others, has the characters of "puncture" glycosuria.

As we have already seen, even lowering of glucose tolerance is not a special feature of hepatic diseases.

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[22] Gazzetta degli Ospedali, 1909, vol. xxx., p. 273.
[23] Boston Medical and Surgical Journal, 1899, vol. cxl., p. 465.
[24] THE LANCET, 1907, vol. i., p. 1645.
[25] Brit. Med. Jour., 1910, vol. i., p. 973.
[26] Diseases of the Pancreas, second edition, 1910.
[27] Wiener Klinische Wochenschrift, 1901, vol. xiv., p. 968; 1902, vol. xv., p. 969.
[28] Deutsches Archiv für Klinische Medizin, 1893, vol. lii., p. 171.
[29] Brit. Med. Jour., 1900, vol. i., p. 889.
[30] Von Noorden: Die Zuckerkrankheit, second edition, 1910, p. 29.

Glycosuria with Intestinal Disorders.

The occurrence of glycosuria in connexion with diseases of the alimentary tract has only recently attracted much attention, and we know little about it as yet. But it promises to provide fruitful lines of inquiry and holds out hope of therapeutic advances.

It is a point worth noticing that in some of the most convincing cases of recovery from diabetes there have been associated gastro-intestinal disturbances, as, for example, Hürter's case of a child of 13, already referred to, and one of the often quoted cases of Richard Schmidt.[31] A child of 4 years, whose mother and elder sister were diabetic, and whose urine had been repeatedly examined and had been found to be free from sugar only four days previously, was attacked by an acute "gastric fever," in association with which the specific gravity of the urine rose to 1042, and it was found to contain 5·8 per cent. of sugar. A rigid diet was initiated and the sugar disappeared after 17 days and never reappeared, although the patient had been under Schmidt's observation for no less than 20 years from that time and had taken an unrestricted diet.

Karl Funck,[32] who is the pioneer in the field, has recorded the case of a man, aged 33, who stated that he had lost flesh for a year, had suffered from polyuria and pruritus, and had been known to excrete sugar for six months. During his illness his stools had almost always been very loose, and the diarrhœa had increased since he had taken a diabetic diet. The loose stools were not fatty, and the fermentation test for a pancreatic lesion gave a negative result. In the mornings his urine had little reducing power, but that passed in the afternoon contained 1·8 per cent. glucose, no albumin, and no indican. His diet was readjusted with a view to his colitis. On a constant diet the sugar gradually diminished, and on the twenty-sixth day of treatment no specimen contained any. Two months later 60 grammes of glucose failed to excite glycosuria.

In a second case three successive attacks of mucous colitis were each associated with glycosuria, which ceased in the intervals. In both cases the sugar disappeared from the urine without restriction of carbohydrates, and in both Schmidt's test of pancreatic efficiency and Cammidge's test gave negative results.

Richartz[33] has recorded a somewhat similar case of a man of 60 years, whose father and brother had died of diabetes. He himself had excreted sugar in 1901, and at that time also the transient glycosuria had been associated with diarrhœa. With a fresh attack of diarrhœa, which lasted for some weeks, glycosuria recurred, and the sugar in the urine amounted to 1·4 per cent. The motions were yellow and of evil odour. Under treatment with milk diet and peptone, castor oil, and tanalbin as an astringent, the stools improved in character and became less frequent, and ultimately natural. The sugar also diminished and disappeared in about a fortnight. Soon afterwards the patient could take any desired quantity of starch with impunity, but 30 grammes of glucose still induced glycosuria.

One would naturally look for the cause of the glycosuria in such cases in the extension of an infection to the pancreas, but it must be admitted that the outcome of the pancreatic efficiency tests has hitherto lent no countenance to such a view. Reicherz connects this variety of persistent glycosuria with that observed by Pflüger after removal of the duodenum of a frog, the pancreas being carefully guarded from injury. A like result followed mere division of the nerve connexions between the duodenum and the pancreas.

Emil Zak[34] has described two cases of corrosive poisoning, one by alkali and the other by mineral acid, in which glycosuria occurred. Although the first patient survived for ten days, the glycosuria lasted only two days. In these cases the corrosion was so extensive that one fails to see why the injury to the duodenum should be held specially responsible for its causation, as Zak suggested that it was; and Eichler and Silbergleit[35] who, in consequence of Zak's observations, made experiments upon dogs, found that severe corrosion, or scorching, of the duodenum excited glycosuria in these animals, but that the same result followed when other portions of the intestine were similarly treated. They regard the glycosuria as due to emptying of the glycogen reservoirs, as after other violent insults to the organism.

Clearly it behoves us to observe carefully the condition of the intestinal functions in cases of diabetes, and to treat any intestinal disorder which may be present. It is not unlikely that evidence of enteritis will be found in more cases than might be supposed, and I may recall the fact that in the case under my own observation which ended in recovery, described earlier in this lecture, there had been looseness of the bowels for some time before the onset of the jaundice and detection of the glycosuria.

The great importance of the observations quoted lies in the fact that they afford evidence that in some cases of diabetes the metabolic disturbance depends upon primary morbid conditions which are amenable to treatment, and raise the hope that further investigation may reveal other groups of cases in which recovery is possible.

Glycosuria with Febrile Disorders.

Spontaneous excretion of sugar in association with febrile diseases by patients who are not the subjects of diabetes is certainly a rare phenomenon, but there is good reason to believe that when it occurs it is a manifestation of a lowering of tolerance for carbohydrates which is much more common. I have already referred to this subject when speaking of potential glycosuria, and to J. Strauss's observation that such lowering of tolerance is not limited to glucose, but extends to starch also. Von Noorden[36] states further that in pneumonia a noteworthy hyperglycæmia may be present, although no sugar appears in the urine. It seems probable that implication of the pancreas is responsible for the alimentary and spontaneous glycosuria in fevers.

Although I have made, and have had made, many examinations of the urine of patients with lobar and bronchopneumonia, I have not met with any example of glycosuria in those diseases, but, as an example, a case recorded by an Italian physician, Gazzetti,[37] may be referred to. The patient was a man, aged 45, who had not exhibited any symptoms of diabetes previously, who during an attack of pneumococcal pneumonia excreted traces of sugar on the second day. The day's output of glucose rose to 7 grammes on the eighth day, and to 12·4 grammes on the twelfth day, and thereafter diminished day by day, and by the sixteenth day had wholly disappeared. The temperature fell by crisis on the ninth day. Some time later tests with glucose and lævulose demonstrated a complete recovery of tolerance. It is not stated that tests of pancreatic efficiency were applied.

Similar temporary glycosuria has been observed in other specific fevers, such as scarlet fever and variola, and also in malarial diseases. Becker[38] has recently called attention to its occurrence in phlegmonous diseases. He quotes briefly 19 cases, from amongst a total of 8000 cases of abscesses, carbuncles, and the like, in which temporary glycosuria was observed, in all of which the excretion of sugar ceased on recovery. In 10 cases complete recovery of tolerance was demonstrated by the administration of 100 gramme doses of glucose after intervals which varied from 1 to 11 years after recovery. There is no obvious connexion, of course, between such occurrences and the special liability of diabetic patients to phlegmonous lesions.

In connexion with fevers will be noticed the same peculiarity which is so frequently encountered in the occurrence of glycosuria—namely, that excretion of sugar is rather the exception than the rule when one of its recognised causes is at work—a peculiarity which appears to stamp it as, in most instances, a secondary, rather than a primary symptom.

In my third, and last lecture, I propose to discuss that which is perhaps the most interesting part of my subject—namely, the association of glycosuria with disorders of the ductless glands.

[31] Prognose und Therapie der Zuckerkrankheit, Bonn, 1892, p. 6.
[32] Münchener Medizinische Wochenschrift, 1909, Band lvi., p. 2105; 1910, Band lvii., p. 1224.
[33] Zentralblatt für innere Medizin, 1910, Band xxxi., p. 321.
[34] Wiener Klinische Wochenschrift, 1908, Band xxi., p. 82.
[35] Berliner Klinische Wochenschrift, 1908, Band xlv., p. 1172.
[36] Die Zuckerkrankheit, fifth edition, 1910, p. 105.
[37] Gazzetta degli Ospedali, 1909, v., p. 176.
[38] Münchener Medizinische Wochenschrift, 1911, Band lviii., p. 2064.

WEST LONDON MEDICO-CHIRURGICAL SOCIETY.—An ordinary meeting of this society will be held at the West London Hospital to-day (Friday, March 1st) at 8.30 P.M., when Mr. F. L. Provis will read a paper, Pain in Women in the Iliac Region and in its Immediate Neighbourhood. Clinical cases will be shown from 8 to 8.30 P.M.

THE SIGNIFICANCE OF THE SYMPTOMS IN CASES OF DUODENAL ULCER.[1]

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I DO not think the subject I have chosen needs an apology. For some years past ulceration of the stomach and duodenum has occupied the attention of surgeons more and more, and as a consequence our views with regard to it have undergone a material change. The findings of post-mortem pathology have had to be corrected in the light of what has been seen in the living, and though many of these corrections have been of a very extensive description, I believe, and I hope I shall be able to prove to you that the limits have not yet been reached.

Symptoms of Duodenal Ulcer.

Ten years ago duodenal ulcer was regarded as a pathological curiosity, very rare and hardly to be diagnosed during life. In 66 years at Guy's Hospital there were only 70 cases in which a duodenal ulcer was found post mortem. In the last ten years, since Moynihan's first paper upon the subject, chiefly owing to his work and to that of the brothers Mayo in Rochester, it has been found to be so common that there is scarcely a surgeon who has not operated upon one or more cases, and not a few who can count their operations by the score. The symptoms are too well known to make it necessary for me to enumerate them. The patient is usually of middle age. Duodenal ulcer does not appear to be a complaint of young adult life in the way that gastric ulcer is—and men seem to be more liable to it than women. For months the patient has complained of a sensation of fulness and distension after meals. At first it was only discomfort. Then it became actual pain, especially after the chief meal of the day. Soon it occurred after every meal, beginning earlier, if the food was liquid, but not for some hours in the case of a heavy meal. One peculiar feature is that it is especially severe at night, and another, perhaps even more striking, is that relief can nearly always be obtained at once by taking food, so that the patient gets into the habit of carrying biscuits about with him or taking them to bed with him at night. This pain is felt nearly always at the same spot, just to the right of the epigastrium, and is relieved by pressure. Heartburn is common, but actual vomiting is rare, unless stenosis has already set in. Hæmatemesis seldom occurs, and when it does is very grave. Melæna is quite common, but is often overlooked, as the amount in most cases is small. Locally there is nothing to be felt but a certain amount of tension of the upper segment of the right rectus. These symptoms may continue for months and then pass away completely, so that for a time the patient is perfectly well. Worry, exposure to cold, ill-health of any kind, will bring them all back again even after many years. Recurrence with intervals of complete freedom is very characteristic.

Taken together, these symptoms make up a picture with which we are all familiar. The disorder is not a functional one. I confess that I have all a surgeon's scepticism with regard to functional disorders. I do not think it right to call a disorder a functional one because we do not happen to know the organic lesion that causes it. It is not consistent with scientific work to assume that a thing does not exist because it has not yet been seen. But I do not think that anyone now would question that there is a definite organic change of some kind present in all these cases. Certainly every one will agree that the proportion of instances in which such an organic change is found is rapidly increasing, and is far higher than it was a few years ago. And the part of the digestive tract in fault is almost certainly the duodenum, though it does not follow that the mischief is confined to this. But the point about which I am in doubt, and the point which I wish to raise to-day, is, whether there is always an ulcer in these cases, or the scar left by an ulcer; and still further, whether when there is or has been a duodenal ulcer, this ulcer is really the cause of the symptoms. I admit that when there is one it makes them worse, but is it the cause? Is it not possible that it may only be a complication, aggravating everything else? I personally do not think it by any means proved that it is the cause, and for my own part I am convinced that another explanation can be found which fits the facts far better.

In many instances, of course, it is obvious at the first glance that there really is an ulcer. There can be no question about it. There is a reddened area on the peritoneal surface of the duodenum, visible as soon as the abdomen is opened, raised and thickened, a sure sign of ulceration beneath. But this is not so in all. In a good many all that is ever found is a white patch on the serous coat, which may or may not be adherent to the structures beneath, and which may or may not separate from them when pinched up between the finger and thumb. Is this a scar marking the site of an ulcer that has healed? and if it is an ulcer that has healed why should a scar—a simple scar that certainly cannot cause stenosis or obstruction—give rise to the peculiar characteristic pain and all the other symptoms that are present in these cases? In others, again, even this is wanting. In one, for example, recorded as operated upon by Moynihan, the case of a man, 26 years of age, who had been ill for nine months and who had had hunger pain practically the whole time, not even this could be found at the operation. There was nothing abnormal to be seen when the abdomen was opened. And this case does not stand alone. I could mention others.

In several of my own cases I have been so much struck by the discrepancy between the symptoms (which, be it known, were relieved by operation) and the only lesion I could find, one that I can only describe as a white patch upon the peritoneal coat, that I asked Dr. H. M. Turnbull, the director of the Pathological Institute at the London Hospital, if he could give me any information upon the subject. Dr. Turnbull's reply more than confirmed my suspicions. He told me that he had found comparatively deep ulceration upon the mucous surface of the duodenum without any evidence on the serous surface to show what was going on beneath (this, of course, was post mortem; there would have been some reddening during life); and conversely a puckered, scarred condition of the serous coat without anything in the interior to correspond. In one instance, he wrote to me "the serous coat showed a marked thickening with small nodules and adhesions, so much so that I pointed it out to the students as an indication of a malignant ulcer inside. On opening the pylorus there was no abnormality."

In short, it seems to me that it cannot be denied that there may be an ulcer in the duodenum without symptoms of any kind (in many instances in which an ulcer has been found post mortem its existence had never been suspected during life); that the characteristic symptoms may be present without even so much as a white patch on the serous coat; that fairly deep ulceration may occur in the mucous membrane without visible change on the serous surface, post mortem at any rate; that a great deal may happen upon the serous surface in the way of thickening and adhesion without anything to correspond beneath; and that the presence of a trivial scar, far too small and too superficial to cause stenosis or obstruction, is not enough to account for the symptoms assigned to duodenal ulcer; and still less for their recurrence after perhaps years of freedom.

It is much too readily taken for granted that the symptoms of which I am speaking are evidence of ulceration. Ulceration, when it is present, intensifies them and prevents their getting well, and probably is always present in cases that obstinately persist, or return again and again at short intervals; but ulceration is not an essential factor. They may occur in the most typical form without anything of the kind. It is an addition and an accident, due in general to some slight injury causing extravasation and occurring, therefore, chiefly in those parts of the bowel that are softest, thickest, and most vascular. There are, however, two symptoms which must be excluded from this—profuse hæmorrhage and perforation. When these occur ulceration is always present, but they really are complications of duodenal ulcer rather than symptoms, and fortunately only occur in a small proportion.

Pain.

As I shall only be able to deal with two or three of these symptoms, I propose to begin with pain, which from the striking features it presents, the time that elapses after a meal before it comes on, and the way in which it is relieved by food, is often spoken of as the most characteristic of all, and alone, by itself as sufficient to justify the diagnosis of

[1] A paper read before the Cardiff Medical Society on Feb. 23rd, 1912.

duodenal ulcer. This emphatically must be disallowed at once. Hunger pain, as it is called, may and does occur in its most typical form in many other disorders besides duodenal ulcer. I have known it present when the only discoverable lesion was a chronic ulcer on the lesser curvature of the stomach at the cardiac end, quite close to the œsophagus. Others have described it in connexion with gallstones, chronic inflammation of the appendix, and other abdominal troubles. And what is more significant still, in more than one instance in which an operation has been performed because of hunger pain, no lesion of any kind has been discovered, though the patient has been cured of his symptoms. The relation, therefore, of hunger pain to duodenal ulcer is clearly not so obvious and conclusive as some would have us believe.

The immediate cause of the pain is a matter of considerable interest in connexion with this. The usual explanation for it is that it is due to the acid gastric juice coming into contact with the raw surface of the ulcer; and the lateness of its occurrence in duodenal as compared with gastric ulcer is explained on the supposition that the acid contents of the stomach do not pass through the pylorus until some hours after the food has entered the stomach. Some authors indeed have been so ingenious as to be able to diagnose the position of an ulcer in the stomach by the time at which the pain began. I do not know if they do so still, but I expect they do, for if a positive statement, right or wrong, once gets printed in a book it apparently becomes immortal. As an effort of the imagination these suggestions are decidedly not without merit, but that is the best that can be said of them. There is not the slightest foundation for them. They are pure assumption. In the quietest possible way they presuppose the existence of an ulcer. They do not prove it, or attempt to prove it. And then, not satisfied with this, they presuppose that if there is an ulcer the effect of acid upon it would be the same as the effect of acid upon a sore place on the hand. As a matter of fact, ulcers of the stomach or duodenum may exist for months exposed to acid all the time without the patient suffering any inconvenience; and patients with proved (not supposed) gastric ulcer may swallow acid of far greater strength than is ever secreted in the stomach without experiencing so much as an unpleasant sensation. Lennander, too, has shown, and it has been confirmed by surgeons times without number, that the walls of the stomach and intestine, whether there is an ulcer or not, are entirely devoid of sensibility to stimuli of this kind. They may be cut with scissors or cauterised, or burnt with strong acids without the patient being so much as aware that anything is being done. All this, therefore, about the effect of acid causing pain in this way is manifestly pure imagination.

It is often said in opposition to this that all the same there must be something in it because alkalies relieve pain, and alkalies neutralise acids. I have no quarrel with the facts. Alkalies neutralise acids. They also relieve pain. So do food, and carminatives, and even alcohol, when judiciously taken, but none of these neutralise acids. And there is another difficulty—in the rapidity with which relief follows. It is impossible to think that in the case of a duodenal ulcer the dose of soda has had time to pass through a stomach half-filled with semi-digested food and neutralise the contents of the duodenum beyond. No; there is no help to be got from alkalies—no help for the theory, at any rate, however useful they may be in practice; and the idea that pain is due to the direct action of the acid gastric juice upon an ulcerated surface, and that there must be an ulcer because there is pain, must be altogether given up.

As a matter of fact, the real explanation for this pain is quite different. The immediate cause, until, that is to say, the stage is reached when the peritoneum becomes involved and another factor is introduced, is nothing more nor less than muscular cramp, violent spasmodic contraction of the unstriped muscular fibre at and near the pylorus. If the contraction is comparatively moderate, so as merely to cause a certain degree of tension, there is only the sensation of fulness. When it is more severe the sensation becomes pain, which is described as bursting—a phrase, it may be noted, patients are very fond of using. It describes literally what they feel. In the worst cases this pain becomes almost unbearable, and leaves behind it when it subsides a feeling of soreness and tenderness that may last for days. If there is any mechanical obstruction the contraction comes on in waves, one succeeding another in regular sequence; but if the passage is free, except for spasm, and the stimulus is continuous, the contraction is maintained without intermission, until at last it gives way either because the muscular fibres are tired out or the nerve centre is exhausted.

The immediate stimulus that starts this contraction is probably always the food as it leaves the stomach. At the beginning of digestion, as is well known, muscular action is comparatively slight. Later it increases in vigour as the stomach becomes empty, perhaps caused in some measure by the increased acidity of the contents. So long as the mucous membrane is normal and healthy, and there is no obstruction, spasmodic or mechanical, the contraction is not felt. It is absolutely imperceptible. But if from any cause the responsiveness of the mucous membrane to stimuli becomes abnormally raised, at once irregular spasmodic contraction sets in, in place of muscular action in orderly sequence, and with it, as its inevitable attendant, pain. There may be an ulcer or there may not. The presence of an ulcer is certainly not necessary. Muscular spasm may occur in its worst and most painful form without anything of the kind. All that the pain really indicates is that there is an irritable, hyper-responsive condition of the mucous membrane, so that a stimulus which in ordinary circumstances would produce only a normal result calls into play a reaction which is not only excessive in amount, but which persists and continues so long as this condition is present. If this goes on, if the spasm and contraction are kept up, it ends in the establishment of a typical vicious circle, the increased responsiveness of the mucous membrane intensifying the muscular spasm and the increased muscular spasm irritating the mucous membrane still more by crushing the tender surfaces together. It is the formation of this vicious circle that holds the secret not only of the symptoms that are present in what is commonly known as duodenal ulcer, but of the reason why they are relieved with such certainty and success by the operation of gastro-enterostomy when all else has failed.

Nor does this rest upon mere conjecture. The occurrence of this muscular spasm has been actually seen and watched, not only in cases in which there is pyloric stenosis, in which, of course, it is well known, but also in those in which there is no obstruction nor ever has been. There are many cases recorded now in which the abdomen has been opened under local anæsthesia and the contraction of the muscle about the pylorus has been watched from start to finish, the muscle slowly swelling up and becoming hard under the influence of some distant stimulus, and the patient simultaneously complaining of the characteristic pain. That this is the true cause of the pain, and not the irritation of the surface of an ulcer by the acid gastric juice, may be regarded as certain, and it is no less certain that the pain may occur, and occur with the greatest severity, in cases in which there is no ulcer, and in which there never has been one.

The late onset of the pain when the duodenum is involved, as compared with its early beginning in the case of the stomach, presents no difficulty. It is simply due to the fact that the vicious circle is not started so soon. A certain vigour of contraction is required for it, and it is well known that the movements of the stomach increase in intensity as it becomes empty. It is not due, as is so often stated, to the lateness with which food enters the duodenum. This is simply another product of the imagination. Barclay and Hertz[2] have both of them shown as a result of X ray work that bismuth, at any rate, and therefore presumably the food that is mixed with it, begins to pass through the pylorus almost at once, long before the pain commences. And the relief experienced when food is taken, which has gained for this pain the name of hunger pain, is simply due to the fact that food entering the stomach engages for the moment the whole attention of the local nerve centres, and so cuts the vicious circle across for the time being. Unfortunately, the effect does not last long. Something more is required if the circle is to be permanently broken.

Hæmorrhage.

The second symptom, or supposed symptom, of duodenal ulcer to which I wish to call your attention is hæmorrhage. It is of very frequent occurrence, much more frequent than is usually believed, but unless it is profuse it is no proof of the presence of an ulcer and cannot be accepted as evidence that there is one. Profuse hæmorrhage coming from the

[2] THE LANCET, May 6th, 1911, p. 1189.

duodenum, which fortunately is of rare occurrence, is another matter. This is probably always due to an ulcer that has eaten its way into the wall of an artery, and demands immediate operation. But what are commonly called occult hæmorrhages, small quantities of blood occurring in the fæces, so small that they can only be detected by chemical analysis, the hæmorrhages that are usually met with in cases of this kind, do not mean anything of the sort. All that they mean is that there is great congestion of the mucous membrane, so that the blood pours out from the capillaries that have given way and escapes between the epithelial cells. They do not mean that there is any such thing as an ulcer, or even a breach of the surface visible to the naked eye. I admit this is difficult to prove of the duodenum, for the duodenum is seldom opened and inspected during life; but it is so certain in the case of the stomach that it can hardly be doubted as equally true of that portion of the duodenum which, geneticallv and anatomically, is so much more closely related to the stomach than it is to the rest of the intestine. This is the condition which Hale White described in connexion with the stomach as gastrostaxis.[3] There is no ulcer. The surface of the mucous membrane is unbroken, but the blood pours from it. I have on three occasions opened the stomach for hæmatemesis expecting to find a gastric ulcer, as all the classic signs of gastric ulcer were present, without being able to find one. I admit that in such circumstances an ulcer may easily be overlooked. During life such an ulcer often appears as a fine linear fissure, out of which the blood trickles slowly in a continuous stream, and I have myself pointed out how easy it is to overlook a minute opening in the wall of an arteriole; but the blood in these cases did not come from any single spot but from a surface which was to all appearance unbroken, and there are at least four cases on record in which an operation of this kind having terminated fatally, the most minute and searching examination post mortem failed to reveal the presence of any ulcer.

Moreover, it is well known that severe and even fatal hæmorrhage may take place from the stomach and intestine after abdominal operations, without any evidence of ulceration being found post mortem. I have known this occur after such a simple operation as ligature and removal of a small portion of omentum. There can, therefore, be no doubt that hæmorrhage may, and often does, take place from the stomach without any such thing as ulceration, and if this is true of the stomach it is almost certainly equally true of the duodenum. Melæna, in short, where all the other symptoms point to the presence of an ulcer in the duodenum, may be regarded as confirmatory evidence; if it is in large amount, as strong confirmary evidence; but there can be no question that ulceration of the duodenum may and does occur without melæna, and that conversely small hæmorrhages from the duodenum are equally common without ulcer.

Hyperchlorhydria.

The third symptom which I should like to discuss because of the frequency of its presence in cases of supposed ulcer of the duodenum is what is known as hyperchlorhydria. I am not quite sure that I understand all that is implied by this word, or that physicians who make use of the word are agreed among themselves as to its exact significance. Etymologically I have no doubt, from the high authorities that use it, it is quite correct, and there is no doubt that any layman who is told that he is suffering from a complaint with such a name must be duly impressed thereby. But I cannot free myself from the uneasy suspicion that this is one of those long and impressive words that are coined from time to time, if not for the actual purpose of concealing what we do not know, at any rate possessing that effect. It does not matter so very much, perhaps, if it only hides our ignorance from our patients. The days of the early Victorian physician have not gone by yet, and faith, or what we term suggestion, still plays a great part in treatment. But it does matter a very great deal if it conceals our ignorance from ourselves, and of that I am afraid there is some danger.

The general view appears to be that hyperchlorhydria implies nothing more than a morbid excess of free hydrochloric acid in the contents of the stomach. Employed in this sense the word is harmless, but inasmuch as an excess of this kind may be produced in more ways than one, and may mean many different things, it must be clearly understood that the word merely connotes the symptom and not the cause, whatever it may be, that underlies that symptom. In one respect I admit hyperchlorhydria is more closely associated with duodenal ulcer than either hunger-pain or hæmorrhage, for an excess of hydrochloric acid undoubtedly assists the process of ulceration. Ulcers occur chiefly—in fact, almost entirely—in those portions of the stomach and duodenum that come most closely into contact with acid, and when the acid is in excess the digestion and disappearance of any portion of mucous membrane the vitality of which has been already lowered by thrombosis or bruising naturally take place more easily. But though hyperchlorhydria is present in about 60 per cent. of cases diagnosed as duodenal ulcer, and though when present it may help in the actual production of the ulcer, its presence even in an exaggerated form is not evidence of the existence of an ulcer.

The simplest explanation for the presence of an excess of free hydrochloric acid in the stomach is that there is an excessive amount secreted. For some reason or other that portion of the mucous membrane which is concerned with the secretion of acid has been rendered unduly responsive to the stimuli it receives. Just as the increased responsiveness of the mucous membrane of the duodenum leads to pyloric spasm and hunger-pain, so that of the mucous membrane of the acid-secreting portion of the stomach leads to hyperchlorhydria. It is not surprising, therefore, that these two should occur together with such frequency, but neither the one nor the other is proof of the presence of an ulcer. There may be an ulcer or there may not. If there is one it usually makes all the symptoms worse; but when it does occur it is an addition and more or less an accident.

Causation.

But what, then, is the real significance of these symptoms? What is the condition of the stomach and duodenum that underlies them all? And why do hunger-pain, pyloric spasm, occult hæmorrhages, gastrostaxis, and hyperchlorhydria occur in this association? For myself, I am convinced that the solution is to be found in the intensely hyperæmic and hyperæsthetic state of the mucous membrane present in these cases. This, to my mind, is quite sufficient to account for the whole. The mucous and submucous layers of the bowel are swollen and thickened. All the interstices in the adenoid tissue that is so abundant are choked with lymph. The lymphatic follicles themselves are so much enlarged that they project above the surface, where they are in constant danger of breaking down. The blood-vessels are distended to such a degree that the slightest pressure is sufficient to make them give way, and if the extravasation is near the surface and there is an excess of free hydrochloric acid ulceration is almost certain to follow. Of all this there can be no doubt, and it is enough, and more than enough, to account for the symptoms; but because almost the whole of this disappears with the life of the patient, little or no attention has hitherto been paid to it. After death, when the blood pressure has fallen to zero, there is little or nothing to be seen but the staining of old and recent extravasations and a few enlarged follicles. This is enough if the signs are read aright—they tell the tale quite clearly of what has been going on; but if an ulcer happens to have formed, though it may be quite late in the day and though it may have healed already, it stands out as such a prominent feature that it gets the blame for the whole. The primary cause is overlooked.

This rests mainly upon clinical evidence it is true. In operating in cases of duodenal ulcer the duodenum is seldom opened sufficiently for the interior to be inspected. But it is thoroughly borne out by what has been seen times without number in the case of the stomach. It is curious how the old observations made of the interior of the stomach of Alexis St. Martin appear to have become forgotten, obliterated, I suppose, by more complicated methods of inquiry. Very few, I imagine, except operating surgeons, ever have the chance nowadays of seeing the mucous membrane of the stomach during life and noting the extraordinary difference in its appearance from that which it presents after death. On the post-mortem table the mucous membrane of the stomach is a thin, pale grey structure that falls into irregular folds and wrinkles according to the way in which it is handled. During life, when it is full of circulating blood and lymph, it is soft and thick. It keeps its own shape and its colour is a brilliant red. During active digestion, when the amount of blood circulating through it is very much larger, the difference is greater still. And when, from some pathological

[3] THE LANCET, Nov. 3rd, 1906, p. 1189.

cause, the hyperæmia is so intense that the surface actually weeps blood, all resemblance disappears. It is difficult to realise that the two structures are the same. This is the condition that precedes ulceration and gives rise to the symptoms for which the ulcer, when there is one, always gets the blame, and which apparently are so inexplicable when no ulcer, or only a trivial scar, can be found.

Hyperæmia such as this may be caused in many different ways. Exposure to cold is one of the most common. It is notorious how prone this is to bring back all the symptoms of duodenal ulcer, even after many years of absolute freedom, not, as is usually stated, because the ulcer has been lying latent all that time and suddenly springs into life again, but because exposure to cold is one of the most frequent causes of internal congestion, and in any given individual nearly always affects the same part of the body time after time, so that if the duodenum was involved once it will become involved again. Jaundice, it is well known, may be caused in this way if the congestion involves that part of the duodenum into which the bile-duct opens. If the congestion is only slight the symptoms soon disappear, and it is said to have been an attack of acid dyspepsia, which has been cured by alkalies or by starvation. If it is more severe and the mucous membrane becomes over-responsive and irritable, so that the passage of food excites an attack of muscular spasm, a vicious circle is set up; the symptoms persist and grow more and more severe, and the patient is said to be suffering from duodenal ulcer.

Septic poisoning, such, for example, as that which occurs in so many cases of chronic appendicitis and gall-stones leading to persistent ill-health without anything definitely wrong, is, I believe, still more common as a cause. The influence that septic poisons exert upon the mucous membrane of the stomach and first part of the duodenum seems to me to be scarcely sufficiently appreciated. The gastric ulcer of young women, in whom there is often no ulcer at all, but merely hyperchlorhydria and gastrostaxis, is notoriously due in a very large proportion of cases to the persistent swallowing of septic poisons from the mouth. I have cured many such by sending them to the dentist. In these the septic poison exerts its action directly on the mucous membrane of the stomach. It does not pass the pylorus. But it is no less efficacious when it is brought through the blood stream, and then it affects stomach and duodenum indiscriminately. Hæmorrhage into the stomach, the result of intense congestion leading to coffee-ground vomiting, is among the commonest incidents of the later stages of all forms of acute septic poisoning. Real duodenal ulcers, it is well known, are not infrequent complications of septic burns, and there can be very little doubt that for every case in which an ulcer occurs there are many more in which the congestion and swelling of the mucous membrane of the duodenum go no farther. And now that attention has been called to it there are many cases on record in which violent hæmatemesis has occurred after operations in septic cases of appendicitis and other similar troubles Septic poison, in short, either brought into contact with the mucous membrane of the stomach, or carried by the circulation into its vessels, will cause intense congestion, hypersecretion, hæmorrhages, and even ulceration. When the poison is generated in the mouth and is swallowed, the stomach chiefly is involved, and gastrostaxis, hyperchlorhydria, and ulceration follow. Possibly the excess of acid may neutralise the poison more or less and prevent its extending farther, and this may even be protective on the part of the stomach. When it is brought by the blood stream the duodenum is often affected as much as the stomach, sometimes a great deal more, and hyperæmia with intense irritability, pyloric spasm, and hunger-pain result. In the worst cases, those especially in which the stomach is affected as well, so that there is a great excess of free acid, ulceration is very likely to occur too, but the ulcer is the consequence, not the cause. It is an addition, which aggravates all the symptoms and makes them more persistent, but it is not the primary agent.

Exposure to cold and septic poisoning, however, by no means exhaust the list of possible causes. In some people this part of the digestive tract is so sensitive that even trivial injuries lead to a serious degree of congestion with its consequences. Not so long since I was consulted by a young man for a trivial attack of traumatic synovitis of the knee. He seemed to me to attach an undue amount of importance to a simple sprain; but when I asked him about it, he said at once: "You do not know why; I shall get jaundice; I always do if I hurt myself like this." And it was quite true; he did.

As a matter of fact, we know as yet very little of the mechanism that controls the vascular and nervous supply of the pyloric region of the stomach and duodenum. It is evidently extraordinarily complex and delicate, and liable to be upset in many different ways. And we know still less of the extent of the powers which these parts of the body possess of excreting poisons from the blood though they must be very considerable. But that the symptoms which are usually grouped together as indicative of duodenal ulcer do not prove in any way the presence of an ulcer, but are accounted for equally well by attacks of congestion and hyperæmia, and the establishment of a vicious circle, started by something that irritates the exceedingly sensitive surface of the mucous membrane, seems to me not to admit of doubt. If the symptoms are recent and slight, drugs and diet effect a cure, and the case is said to have been one of acid dyspepsia or hyperchlorhydria, because after some kind of test meal an excess of free hydrochloric acid is sometimes, but by no means always, found. In cases that have lasted longer, in which a vicious circle, such as I have described, has already been established, the same good result may follow; but as a rule much longer treatment, combined with rest in bed, is required, and after all the symptoms have disappeared recurrence is very likely to take place on the most trivial provocation, such as exposure to cold. In the worst the only means of breaking the circle is an operation—gastro-enterostomy—and that fortunately is safe, effectual, and final. There is no recurrence after gastro-enterostomy. Whether there really is ulceration or not in such a case is perfectly immaterial. So far as treatment is concerned it does not enter into the question. Operation, of course, is compulsory if there is serious hæmorrhage, for this in the case of a duodenal ulcer rarely occurs unless an artery has been eroded, or if the severity of the local symptoms causes even a suspicion that perforation may possibly occur. But it is no less necessary in cases in which, from the persistence or obstinate recurrence of the symptoms in spite of medical treatment, it is evident that something more thorough is required. In many of these cases there may be one or more ulcers, and in many more there are white patches on the serous coat of the duodenum which possibly may be the scars of old ulcers; but the symptoms are not due to the ulcers, though they may be made worse by them, and they are certainly not caused by the white patches, whether they are scars or whether they are not.

Wimpole-street, W.

THE DIFFERENTIAL DIAGNOSIS OF CERTAIN INFECTIOUS DISEASES.[1]

BY FREDERIC THOMSON, M.B., C.M. ABERD., D.P.H.,
MEDICAL SUPERINTENDENT, NORTH EASTERN FEVER HOSPITAL.

I FELT much honoured when I was asked to open a discussion at the Æsculapian Society, and as your President suggested to me that some remarks on the differential diagnosis of infectious diseases might be acceptable I decided to take his kindly advice. In the time at my disposal I can only do this in a limited way, and, accordingly, I will only attempt to discuss the diagnosis between a few of them.

Without doubt, it will interest you to know what certain of the error rates approximately are. For the purpose of showing this in scarlet fever and diphtheria I have taken the admissions to my hospital for the years 1906 to 1910 inclusive. In rough figures during these five years 13,000 patients were admitted certified to be suffering from scarlet fever, and of these, in my opinion, 8 per cent. were not so suffering. During the same period about 3000 cases certified to be suffering from diphtheria were admitted, and of these 22 per cent. were suffering, not from diphtheria, but from other diseases. I must, of course, admit that these percentages cannot be accurate because I myself make wrong diagnoses, and the frequency with which I do so I cannot estimate in the least.

In the year 1902, when small-pox was epidemic in London, some 8000 patients were admitted into the institutions of the Metropolitan Asylums Board so certified, and of

[1] A paper read before the Æsculapian Society on Feb. 2nd, 1912.

these 7·7 per cent. were mis-diagnoses. In the year 1903, when the epidemic was over, roughly 400 cases were admitted certified to be suffering from small-pox, and of these 18·2 per cent. were not so suffering. Of the 7·7 per cent. error-rate of 1902, 2·5 was due to mistaking chicken-pox for small-pox, while of the 18·2 error-rate of 1903 8·7 was due to the same cause.

When one considers the difficulties with which the practitioner is beset, such as indifferent light, uncleanly skin, the anxiety for several reasons to come to a definite diagnosis, and so on, should one consider these error-rates high or low? When I consider the high proportion of mild and ill-marked attacks of scarlet fever in recent years I must regard the percentage error as low. I do not think the diphtheria error-rate can be called low, and I imagine it is partly accounted for by the natural desire of the physician to send the sufferer to hospital in order that there may be as little delay as possible in the administration of antitoxin.

I must say, however, that I think the small-pox error higher than it should be in non-epidemic times; and chicken-pox should not be mistaken for small-pox to anything approaching the error-rate. I have often been told and often heard it said that medical men so seldom if at all get the opportunity of seeing small-pox. I have seen many a case of typical chicken-pox mistaken for small-pox, and I have been driven to the conclusion that this is not so much due to want of experience of small-pox as to the neglect of the study of chicken-pox. It is well known that great difficulty may occur in distinguishing between these two diseases, but the difficulty is rare and the error common. Some may think I strain this point, but I wish to emphasise the fact that though the medical man may have little chance of studying small-pox clinically, yet he will go a long way to minimise that difficulty if he studies chicken-pox closely.

Before I come to the diagnosis between the few diseases I purpose attempting to-night I wish to say that in no class of disease is careful and thorough examination more necessary than in the infectious diseases. It is essential to examine the whole skin surface, and the mouth and throat must be examined minutely in as good a light as possible.

Scarlet Fever and German Measles.

If the attack of either scarlet fever or German measles is well marked it is well-nigh impossible to mistake the one for the other if the observer is fairly well acquainted with each disease. Often, however, the attack is ill-marked, and to distinguish between an ill-marked attack of scarlet fever and a case of German measles which mimics the rash of that disease requires minute examination, a sound knowledge of both diseases and a high colour sense. Even then errors will occur with our present limited knowledge.

The onset of scarlet fever is often sudden and the sufferer feels really ill. The onset in German measles is seldom sudden; the sufferer usually has but little malaise, and the eruption is often the first evidence of the disease. The manner of onset seldom helps one when distinguishing between doubtful examples of these two diseases, for in many mild attacks of scarlet fever the onset is ill-marked and the rash may be the first evidence. On the other hand, though it is not common, the individual who is the subject of an attack of German measles may, comparatively suddenly, feel really ill, and I think this is rather more common when the adult is attacked by this disease.

I cannot say that I place much reliance upon the enlargement of certain glands in German measles from a diagnostic point of view, but it will be in favour of German measles if the post-auricular and occipital glands are much enlarged provided the head is not verminous. It is common for these glands to be enlarged, at all events amongst the poorer classes, from that cause. I may say that well over 90 per cent. of the female patients admitted to my hospital have either pediculi capitis and nits or nits alone. The percentage in the male sex is, of course, much less. Stiffness of the back of the neck and marked enlargement of the cervical glands for a day or two before the rash comes out are somewhat in favour of German measles.

Vomiting or pronounced nausea is frequent before the advent of the scarlet fever rash in children, and even in mild attacks is comparatively common, whereas in German measles it is rare. Of course, incidental vomiting may occur before the appearance of the German measles rash due to such common causes as errors in diet, hot weather, &c., and no doubt the disease may increase the chance. Nevertheless, the fact remains that vomiting in the invasion stage is highly in favour of scarlet fever, but it is to be remembered that vomiting or pronounced nausea is much less common when an adult is attacked.

Evidence of catarrh may help one in the invasion stage and for a day or so after the rash comes out, but only, I think, in so far as the ocular conjunctivæ are concerned. In a sharp attack of scarlet fever the ocular conjunctivæ may be considerably injected, but we are not concerned with well-marked attacks. In mild cases of scarlet fever the ocular conjunctivæ are rarely much injected, and are, indeed, commonly quite clear, whereas the condition is quite usual in German measles. On the other hand, it must not be forgotten that the ocular conjunctivæ may be quite free from injection in German measles, and even in quite mild attacks of scarlet fever some injection is occasionally seen.

The condition of the fauces is sometimes a help when one is in difficulty, but I must admit it is seldom so. The injection in German measles is diffuse, while in scarlet fever it is usually more pronounced on the uvula and along the free edge of the soft palate than on its surface. In many cases, however, this is of no help, and, in fact, in a good many very mild attacks of scarlet fever little, and in some no, injection is to be seen.

It may be easy to distinguish between the rashes of scarlet fever and German measles or it may be difficult or even impossible. If the rash of German measles is seen when it first comes out it is almost always quite easy to diagnose the case, for the light pink macules cannot well be mistaken for the rash of scarlet fever. However, in a few hours after the advent of the German measles rash it may, and does with considerable frequency, lose its original character and becomes diffuse. When this change takes place the rash may be more or less like scarlet fever; in some cases it is still comparatively easy to distinguish, in some difficult, and in others quite impossible. In a proportion of these cases, I think in a considerable majority, the macules and papules comprising the rash are not so well defined as in the rash of scarlet fever; in some they are exceedingly ill-defined. Occasionally, however, the mimicry of an ill-defined rash of scarlet fever is complete.

The colour of these rashes is a point of the first importance, and I wish I could describe this, for when these two diseases come to resemble each other the colour of the rash is often a great aid to diagnosis. The light pink of the early German measles macule is often greatly lost when the rash becomes diffuse, but, I think, almost always a tinge of pink is to be seen, and that tinge of pink is very rarely seen in scarlet fever. Here a high colour sense is necessary for the diagnostician and we have not all got that.

The distribution of these rashes is often of assistance in coming to a diagnosis. When the German measles macules first appear on the face and show in the circumoral region no error is likely to be made; but even when the German measles rash has become diffuse help is often to be found. The macular and papular rash of scarlet fever when profuse does not show the same niceties of distribution as when it is sparse or limited; but whatever the amount of the rash may be it very rarely occurs in the circumoral area or close by the side of the nose. This, however, is not of great assistance, seeing that when the rash of German measles has become diffuse it has often faded from the circumoral region, but if it has not completely done so the point is very useful. It is to be remembered that on rare occasions in German measles the rash does not affect the face at all, and that in scarlet fever a simple erythema or flush is not uncommon in the circumoral region. Further, in scarlet fever if there is a catarrhal condition of the nose some points of irritation may show in this region; this is not rare, and I have seen it cause doubt to a good diagnostician more than once. The presence or absence of the rash on the palms and soles does not help one very much, for there is often no rash on them in German measles, while a flush on the palms and soles is not uncommon in scarlet fever, and the macular rash is seen there in a small percentage of the cases. When the rash of scarlet fever is not profuse or is sparse or limited, much more rash will usually be found on the inner aspect of the thighs than on the outer, particularly at the upper part. In fact, in many cases this is so marked that a triangle of rash density having for its base a line near Poupart's ligament is graphically

shown. The same distribution applies to the arms, though usually it is not so marked as in the case of the thighs. The rash of scarlet fever is also often to be found in greater profusion on the side of the trunk than at and near the centre line of the chest and abdomen. The diffuse rash of German measles rarely imitates the distribution I have mentioned; and, indeed, the rash will usually be found in greater profusion on the outer than on the inner side of the thighs. Naturally there are exceptions to these points, and I have seen the rash of scarlet fever much more profuse on the outer than on the inner sides of the thighs; likewise I have seen the rash of German measles more plentiful on the inner sides. This distribution of the rash on the thighs is much less constant in German measles than in scarlet fever.

In some cases of scarlet fever a few tiny brick-red petechiæ are to be found intermingled at certain places with the macular and papular rash. Unfortunately for our purpose of diagnosis these petechiæ occur much more frequently in intense eruptions, but they are to be seen occasionally in sparse and limited eruptions. They may occur in most parts of the skin surface, but they particularly affect certain flexures and are most commonly to be found in the flexures of the elbow-joints, and perhaps above and below the clavicles. If these are found the diagnosis is much in favour of scarlet fever as opposed to German measles.

It must never be forgotten that though the rash of German measles may have become diffuse it may not yet have done so in its entirety, and a few light pink macules may remain in their original form. If there are any left they will usually be found on the buttocks or the back of the feet.

If the rash persists for four or five days it is strong evidence in favour of scarlet fever, for the rash of German measles rarely persists for three full days. This point, though not of much value, may occasionally be of some slight assistance.

Before leaving this subject it is well to remember that the rash of German measles sometimes appears first on the trunk and may not affect the face at all; and that the macular rash of scarlet fever does rarely occur in the circumoral area.

The condition of the tongue is often of great assistance in distinguishing between scarlet fever and German measles. The tongue in German measles is usually comparatively clean or slightly furred. In scarlet fever it often becomes rapidly covered with a thick creamy white fur, through which the bright red, elongated, and swollen papillæ show as red points, the extreme tip and edges of the tongue remaining unfurred and bright red. This condition usually persists for the first two days of the disease, and then on the third day the fur commences to peel off, starting near the tip and edges, though exceptionally the peeling starts at the centre of the dorsum. In the course of 24 to 36 hours, sometimes longer, the fur has completely separated from the dorsum, except perhaps towards the base. The tongue is then quite devoid of fur, except, as I have already stated, there may be some remaining towards the base, bright red, and dotted thickly over with protruding fungiform papillæ of a similar colour. From the point of view of diagnosis the most important of these stages is the second—the peeling tongue; the first—thickly furred stage—and the third—clean stage—also have their importance, but not to the same degree. Any of these conditions common to the scarlet fever tongue may be seen in German measles, but they are uncommon, and the rarest is the peeling of the tongue. One must not forget that in many cases of scarlet fever this peculiar condition of the tongue is not seen, and the less severe the faucial affection the less likely is it to be found, but intermediate conditions between a negative tongue and the scarlet fever tongue occur with comparative frequency and may be of assistance.

The pulse-rate in German measles usually corresponds to the temperature height, but in scarlet fever for at least the first two days of the disease it is much more rapid than is to be expected from the temperature. This point may be helpful, but in dealing with children it is not easy, owing to their excitability, to get their pulse-rate unless considerable time is first spent in making friends with them.

Should articular rheumatism occur about the sixth or seventh day of the disease it is very strong evidence of scarlet fever, but, as a matter of fact, in the class of case under discussion it seldom arises.

The pinhole desquamation of scarlet fever is often sufficiently pronounced to settle the diagnosis, whereas any desquamation that takes place in German measles is seldom more than powdering. In scarlet fever some slight powdering commences on the face about the third day of the disease, but pinholing is exceptionally seen. Then on the fifth, sixth, or seventh day or thereby pinhole desquamation commences about the lower neck, upper chest, or pubis, and should this desquamation become well marked the diagnosis is settled. It must not be assumed that a few pinholes scattered here and there are sufficient to found a diagnosis upon. Occasional ones may sometimes be seen in German measles and other conditions—for example, counter irritation may produce them; and, indeed, limited pinholing may be occasionally seen on an apparently normal skin. To warrant a diagnosis they must cover a fair area of skin and be numerous. Unfortunately a goodly number of cases of scarlet fever, and particularly the mild ones, do not show pinholing; and, indeed, in some no apparent desquamation occurs at all. The desquamation that occurs on the hands and feet in scarlet fever comes somewhat late to be of much value, yet it serves in helping to clear up the case, but this desquamation may be due to some other cause, particularly on the feet. Nephritis arising from the seventeenth to twenty-fourth day of the disease, or thereabout, will make the diagnosis of scarlet fever clear, especially if associated with desquamation on the hands and feet.

Measles and Scarlet Fever.

There is seldom much difficulty in distinguishing between scarlet fever and measles, and when doubt arises it is nearly always in the invasion stage of measles, especially when the case presents a scarlatiniform prodromal rash.

The onset of measles is usually gradual; there is seldom vomiting; no sore throat except perhaps a scrapy and dry feeling; there are catarrhal symptoms, cough, injection of the ocular conjunctivæ, possibly sneezing, and there is a varying degree of œdema of the skin of the face. These catarrhal symptoms become gradually more pronounced hour by hour in the invasion stage. In scarlet fever the onset is often sudden; there is usually vomiting, sore throat, and no catarrhal symptoms worthy of note. Occasionally a scarlatiniform prodromal rash appears in the invasion stage of measles; this is usually short lived, and the maculation is very indefinite, but it is usually accompanied by the aforementioned symptoms of measles which rule scarlet fever out of court.

It is true that sometimes a case of measles will be met with which has none of the usual symptoms and has a scarlatiniform prodromal rash; but even then Koplik's spots will almost certainly be present and will clinch the diagnosis. They are usually to be seen two or three days before the true measles eruption appears, and they neither occur in scarlet fever nor, I believe, in any other disease. They may appear four days or more prior to the measles rash, but occasionally only the day before, and provided careful examination be exercised they can practically always, if not always, be found. When looking for these spots it is essential, in most instances, to have a good light shining on the point under observation, and it is often necessary to raise and depress the point of the tongue depressor so as to move the mucous membrane and thus get the glint of light necessary to cause the bluish-white dots to be seen more readily.

When first seen the spot consists of an irregularly rounded small patch of a bright red colour showing on its centre a bluish-white dot. Usually these rapidly increase in number, and the red areolæ round each dot joins other areolæ until the mucous membrane is for the most part, or entirely, brightly injected, and shows scattered over it innumerable bluish-white dots. Occasionally, however, the mucous membrane will be found brightly injected all over when first seen and no bluish-white dots visible; but a second examination in a few hours, at most 24, will disclose them. When they are so numerous as I have suggested they are usually readily seen in a good light unless they are exceptionally tiny; but though they are ordinarily numerous they are not always so and occasionally only a very few are to be found. If few in number, the most likely place to find them is on the buccal mucous membrane opposite the molar teeth, but should they not be found there a lengthy search is often necessary.

I sometimes find that an exaggerated idea of the size of these bluish-white dots exists. A large size would correspond to the head of a small pin, provided there has been no

coalescence, a small to the point of the same, and naturally intermediate sizes are more usual. I have not found them on the gums, the tongue, or on the hard palate, but on a few occasions I have seen them on the soft palate. If a very large crop of them is present on the buccal and labial mucous membrane it is not uncommon for some to coalesce and thus form larger spots; but, even then, if one is well acquainted with the Koplik spot, there is no possibility of confusing it with any other condition.

When the measles rash has commenced to appear, or is fairly well developed, confusion with scarlet fever is most improbable. The character of the measles rash, its appearance in the circumoral area, behind the ears, on the forehead near the roots of the hair, &c.; the absence of sore throat; the catarrh and Koplik's spots all make the diagnosis easy. It is true that Koplik's spots often disappear soon after the measles rash appears, but they are usually present for the following 24 hours, and I have seen them persist for four days after the appearance of the rash.

Occasionally a case of scarlet fever is mistaken for measles owing to a patchy eruption of the extremities, particularly on the arms. This is an error that should scarcely be made since the normal rash of scarlet fever will be present on the trunk and other symptoms will almost certainly be found, for these are usually well-defined cases.

In scarlet fever about the eighth day or later a morbilliform rash may appear, but this is a septic rash occurring in certain cases of scarlatina anginosa. It often affects the face and entensor surfaces of the extremities, particularly the elbow and knee-joints, though it may be general. It is commonly of a deeper red colour than the rash of measles, though by no means always so. But apart from that the condition of the throat, the nasal discharge, the swollen condition of the glands of the neck, and the knowledge that such an eruption in this class of case is common puts measles out of the question.

Small-pox and Chicken-pox.

In distinguishing between the early eruptions of small-pox and chicken-pox, great difficulty may be experienced, but this is seldom so, for these two diseases show marked points of difference all of which rarely fail one.

I am tempted to think that too great reliance is sometimes placed upon the less important differences to the great detriment of the all-important ones. Nowadays, small-pox is mostly a disease of adults, chicken-pox of children, and consequently if the eruption is on an adult, a suspicion that it may be small-pox sometimes crosses the observer's mind, and may mislead him. Occasionally, a medical man meets with a very abundant eruption of chicken-pox, and that fact may suggest to him that after all the case is possibly small-pox; and this is particularly so if it happens that a few of the lesions run into others. Confluent chicken-pox, as understood, is rare, but that an occasional lesion should join another is not. Again, in adults suffering from chicken-pox, headache and backache are sometimes complained of, and this appears to be an occasional cause of error; but it is not uncommon for the adult who contracts chicken-pox to suffer from headache and backache. Also an initial erythema may accompany or precede the eruption of chicken-pox, but the character of the initial erythemas of chicken-pox should not lead one astray.

No one of these lesser points I have mentioned is of very much importance, and while noting them the observer ought not to balance them against better evidence.

The most important diagnostic point is the distribution of these eruptions, and, though not infallible, it is of such value that too much stress cannot be laid upon it; for the exceptions that occur are almost always partial. I cannot now go into the detailed distribution of the small-pox eruptions which Ricketts, in that admirable text-book on the diagnosis of small-pox by himself and Byles, so ably sets forth. The lesions are most numerous on the face, next on the upper extremities, then on the lower extremities or back. They are more numerous on the forearms than on the arms, and still more so on the hands, and in a lesser degree the same rule holds good for the lower extremities. They are more numerous on the back of the trunk than on the front and over the upper part of it than on the lower. The eruption prefers the extensor surfaces to the flexor and the prominences to the hollows and shallows.

The lesions of chicken-pox particularly affect the trunk, next the face, then the extremities, and on the extremities they become less numerous the more distal. It is true the eruption is usually more dense on the back of the trunk than on the front, but it shows no preference for the upper part of the trunk as compared with the lower. It shows no preference for the extensor surfaces as compared with the flexor, and it does not shun the shallows and hollows; indeed, in a limited eruption it is rare not to find lesions in the axillæ.

The lesions of small-pox are deep-seated, those of chicken-pox very superficial, as may be best demonstrated by picking up individual lesions between the finger and thumb where the skin is soft and loose. It is undesirable to draw the fingers across the forehead to feel for a shotty eruption, for this is not unusual in chicken-pox. In modified small-pox the lesions may be less deep-seated; and rarely the lesions of chicken-pox are not superficial, but superficial lesions will almost certainly be found somewhere. The vesicles of small-pox are usually circular, those of chicken-pox vary in shape, some being round, some irregularly elongated with the skin crease, some irregularly rounded, and even jagged. On the hands and feet the chicken-pox vesicles, if present, are very often small and round and ill-developed, whereas the lesions of small-pox are better developed on the hands than elsewhere.

The lesions of small-pox are comparatively slow in development, those of chicken-pox rapid. In small-pox they usually appear first on the face or on the backs of the hands or wrists; their appearance on the legs may be a day later, and at any given part some will be behind their fellows, but the development of all being equal, the late comers will keep their relative stage. The chicken-pox lesions usually appear first on the trunk and others follow for the first few hours. The macular stage is short-lived, and a papule is formed upon which a vesicle soon commences and is fully developed in from 6 to 24 hours, whereas even in modified small-pox vesiculation will not usually have commenced by the end of 24 hours. In chicken-pox so quickly do some of the vesicles appear that they are seen practically as soon as the macule becomes a papule, and so delicate is the covering of many of them that they quickly become ruptured by one means or another and scabs form. Since some of the macules and papules abort and some of the vesicles are arrested in their development the chicken-pox eruption in a few hours from its commencement will show the presence of lesions in most stages except the pustular. Several crops of chicken-pox eruptions may occur, but there is nearly always a second, and it usually appears about 24 hours after the original eruption, when most probably macules, papules, vesicles, their abortions, pustules, and scabs will all be present.

If a small-pox vesicle be pricked and pressed only a portion of the contents usually escapes, and it does not collapse, but in chicken-pox it commonly does; yet too much stress must not be laid upon this, for sometimes the small-pox lesions will collapse and the chicken-pox will not.

A proportion of the vesicles in small-pox are usually umbilicated, whereas in chicken-pox they are mostly dome-shaped, but sometimes in small-pox none are umbilicated, and occasionally a false umbilication of the chicken-pox vesicle is seen. Further, flat-topped vesicles are occasionally seen in both diseases.

Tottenham, N.

THE ROYAL SANITARY INSTITUTE.—A provincial sessional meeting of this society will be held at Manchester on March 8th and 9th. The meeting on Friday, March 8th, will be held in the Municipal School of Technology, Sackville-street, Manchester, at 7.30 P.M., when discussions will take place on the Application of the Housing and Town Planning Act to the Re-development of Suburban Areas now in Process of Transition, to be opened by Mr. F. W. Platt, the building surveyor of Salford; and the Quantity of Water Available from Upland Drainage Areas, to be opened by Professor J. Radcliffe. On Saturday, March 9th, the new service reservoir at Heaton Park and the new lake will be inspected under the guidance of the resident engineer. Those wishing to be present at the discussions or visits should send their names to Professor J. Radcliffe, M.Sc., Municipal School of Technology, Sackville-street, Manchester, or the secretary of the institute, not later than March 5th.

CYSTITIS: ITS CAUSES AND ITS TREATMENT.

BY DAVID NEWMAN, M.D. GLASG., F.R.F.P.S. GLASG.,
SURGEON TO GLASGOW ROYAL INFIRMARY.

(*Concluded from p. 496.*)

Treatment.

IT is very evident that, cystitis being due to so many different causes, the treatment must be regulated by a careful consideration of all the etiological factors involved. A cystitis resulting from a descending infection from the kidney cannot be remedied before the renal affection is cured. The removal of a stone, the dilatation of a stricture, or the excision of an obstructing prostate may be all that is required to deal successfully with a secondary cystitis. But when the cystitis is the cause of all the trouble, or the primary factor has been removed or dealt with, certain measures may be adopted according to the nature of the infection, the symptoms which present themselves, and the stage of the disease.

I. *Mild Bacillus Coli Infection.*

Mild bacillus coli infection of the bladder leading to juvenile incontinence or involuntary nocturnal micturition in children, and the cystitis so commonly met with during and after pregnancy, may be first considered.

When the case comes under observation at the onset, and the condition is fully recognised, the treatment is usually successful.

(*a*) *Internal medication* has for its objects to lessen the irritation of the vesical mucous membrane as rapidly and effectively as possible, to hinder the propagation of the infective organisms, and to clear them out of the bladder, for if this is not effectively done there is always liability to recurrence.

The first object is accomplished by rest, hot applications, and by rendering the urine as bland and dilute as possible. Large quantities of fluids are taken: barley water, flaxseed tea, and drinks containing acetate and citrate of potash. To allay pain and spasm the hips should be well raised on a hard pillow, in order that the abdominal viscera and the contents of the bladder may gravitate so as to relieve pressure on the neck of the bladder as much as possible, and the rectum should be kept empty by giving confection of sulphur and confection of senna in equal parts as a laxative. Phenacetin and extract of hyoscyamus may be given internally in 5 grain doses, and if the pain is very acute and vesical tenesmus is present a rectal injection of two teaspoonfuls of starch containing antipyrin and laudanum may be administered. Urinary antiseptics should not be employed in the acute stage as they are too irritating.

(*b*) The administration of *urinary antiseptics* by the mouth and local applications to the bladder are not suitable during the acute stage, but as the inflammation declines treatment should be directed to reducing the activity and power of propagation of the micro-organisms, and in the end rendering the urine aseptic.

For this purpose the administration of boric acid is most useful when the inflammation is limited to the bladder, but when the kidneys are also involved the drug is not tolerated—it at once upsets digestion. Helmitol is better than urotropine, but the action of both must be carefully watched as their action varies greatly in different cases. Sometimes they suit admirably for a time, and then suddenly they act as irritants. The ammonia salts of formaldehyde, if administered for a length of time, are liable to act in this way. In cases where the urine is acid, as in bacillus coli infections, formalin is liberated from these preparations and creates irritation, but if the urine be rendered neutral or alkaline by potash or lithia salts this difficulty is overcome.

(*c*) *Local applications* in these milder forms of infection are as necessary as in the more virulent diseases, but less powerful methods are called for. If employed within a short time of the onset of the infection irrigation with boric acid solution, quarter strength, that is to say, one part of saturated solution to three of sterile water, is most useful if the washing out is thorough. The bladder should be fully but not overdistended four times at each washing, and this should be repeated every second day till the urine passed on the second day fails to give growths on cultivation or infection by inoculation of animals. Unless these tests are applied we have no guarantee that the patient is safe.

In cases which have become chronic, as in children who suffer from involuntary nocturnal micturition, and women who complain of frequent and painful micturition as a consequence of inflammation of the neck of the bladder or the urethra, local treatment is required over and above what has been described.

In involuntary nocturnal micturition not due to extrinsic causes, the neck of the bladder or the urethra is usually congested. This may be cured by careful instillations of nitrate of silver 1–2 grains to the ounce, after washing out the bladder with sterile water and emptying it. In a child 3 ounces may be injected and left in the bladder. As soon as urine flows into the bladder the silver salt becomes combined with chlorides and forms an insoluble salt.

When the vesical end of the urethra or the mucous membrane of the canal is involved the duct should be dilated freely, a speculum introduced, and the whole passage swabbed with pure phenol, and immediately washed with a solution of bicarbonate of soda to check the action of the carbolic acid. The pain that follows is sometimes severe for the first few days, but is easily relieved by cocaine bougies or morphine, and generally in a week or ten days all the old troublesome symptoms have disappeared.

II. *Acute Cystitis.*

The treatment of the severer forms of acute cystitis due to pneumococcus, streptococcus, gonococcus, or tubercle bacillus is constitutional and local. At first pain, frequent desire to pass urine, and tenesmus are the symptoms which require immediate attention. The patient must remain in bed, and the symptoms may be relieved by warm baths and sitz baths with aromatic herbs, or hot moist compresses may be kept on the abdomen. Diet should be plain and the quantity limited, and, as indicated above, bland fluids should be given in considerable quantity. The drugs given must depend upon the reaction of the urine, but in all cases phenacetin and extract of hyoscyamus—for an adult 5 grains of each three times daily—should be taken. Opium should be avoided, but morphine may be given hypodermically if demanded on account of the pain. The bowels must be kept free but not purged, except once at the onset, with calomel, followed by a saline.

The reaction of the urine determines the other drugs prescribed. The excretion should be kept as nearly neutral and as dilute as possible. Great quantity of fluid does not lessen the frequency of urination, but it lessens the pain and washes out the bladder from above, when washing out from below is inadvisable. The more frequently the contents of the bladder are changed the less toxic the urine is rendered. It is when the excretion suddenly diminishes that dangers of sepsis may be looked for.

As early as possible the organisms producing the attack should be isolated and a vaccine prepared from them and administered as soon as convenient. If they are found to be urea-decomposing organisms every endeavour should be made to keep the urine acid, but if they are pure cultures of bacillus coli, tubercle bacillus, or streptococcus pyogenes, alkalies or salts, which reduce the acidity of the urine, may be freely given.

A few words may be said in regard to the use of *vaccines* in cystitis, but, while admitting the value of this treatment, it must not be employed to the neglect of other general and local remedies. The preparation of vaccines and the mode of determining the opsonic index cannot be considered here. The vaccines are standardised emulsions of microbes, sterilised, in 1 per cent. saline solution, and when injected subcutaneously produce active phagocytosis and an antimicrobic substance which induces a process of immunisation which may be gauged by what has been called the "opsonic index." This term, introduced by Wright, is very convenient for expressing the phagocytic activity of leucocytes in an infected individual as compared with a normal man, but the process is so complicated and the danger of error so considerable that it is very doubtful if these estimations are of the value placed upon them by their author, perhaps with the exception of observations in tuberculosis.

Not infrequently, while waiting for the vaccine to be prepared, marked progress towards recovery may be obtained by the older therapeutic methods Having adopted the general instructions referred to, doubtlessly they may be aided greatly by giving auto-vaccines procured from cultures

of the organisms giving rise to the cystitis. But as the preparation of the auto-vaccine involves a delay of five to six or seven days, it is well to discover as early as possible the nature of the organism present, and use a stock vaccine until the auto-vaccine is ready. Stock bacillus coli vaccine is not a good substitute for an autogenous vaccine. Coliform bacteria are a family, and the number of different strains met with are so considerable that it is necessary to have special vaccines prepared to meet each individual case; in gonococcus, streptococcus, pneumococcus, and staphylococcus infections stock vaccines are satisfactory temporary substitutes for the autogenous vaccine.

Vaccines are of special value in acute cases, and should be used at once. A few years ago it was regarded as necessary to regulate the dosage by the opsonic index, but now the practical surgeon can not only look upon, but he may call the opsonic index a bogie, without being dubbed a heretic. The dose of vaccine and the frequency of administration, like any other therapeutic measures, must be regulated by the individual case. Small doses—5,000,000 or less—at one time and repeated every three or four days in acute cases give the best results. In chronic cases, to begin with, the same doses may be given, and gradually as time passes the dose may be increased and the intervals prolonged until 40,000,000 or 50,000,000 are being given once a fortnight. The vaccine should be continued until the urine is sterile, as proved by cultures and inoculation. The cure must not be judged by the disappearance of symptoms only; if it is, a relapse is likely to occur. In tuberculosis the opsonic index is of value, and when possible should be employed in treatment by tuberculin, but not having means to ascertain the opsonic index should not prevent the surgeon giving the patient the advantage of this treatment. Of tuberculin R., the strength of which is such that 1 c.c. represents 10 mgm. of dried bacilli, a small dose should be given at first—e.g., 0·00001–0·00002 mgm. of dried bacillary substance, and this may be gradually increased to ten times the amount according to circumstances.

As regards *local treatment*, what has been said in respect to the treatment of bacillus coli infection applies here—only stronger remedies are demanded. The idea in using germicides in cystitis is not to kill all the organisms at once but to reduce their virulence, and as far as possible their power of multiplication. To use drugs of sufficient strength to destroy the cocci would seriously injure the living tissues. The following remarks apply to all infections other than tuberculous—it will be considered separately.

In acute cystitis the local treatment consists of *irrigation* and *instillations*. Both are employed with the purpose of getting rid of the organisms that have gained access to the bladder, the former by washing them out, the latter by destroying the infective matter and acting as a remedial agent to the mucous membrane. In all cases of infection of the bladder what we aim at in employing irrigation is thorough cleansing with a mild germicidal drug such as permanganate of potash, protargol, or argyrol in order to lessen the activity of micro-organisms. It is impossible by means of local applications to sterilise the bladder, as the agents to do this would require to be so powerful that they would irritate and injure the mucous membrane and do harm instead of good. The bladder should be emptied and for the first two or three irrigations washed simply with warm sterilised water, then gradually solutions containing one of the drugs mentioned may be employed—permanganate of potassium (1–2000), protargol or argyrol (3 to 5 per cent. solutions), boroglyceride (5 per cent.)

For instillations in recovery from acute cystitis weak solutions of nitrate of silver are the best, 1/10 grain to the ounce, gradually increased to ½ grain to the ounce; later oxycyanide of mercury in weak solutions, 1-4000, will be found of great value. Local treatment will be referred to later when considering the question of chronic cystitis, but here it may be stated that irrigations or instillations must be continued so long as any organisms are found in the urine, otherwise recurrences are liable to occur or a chronic catarrh become established.

When acute cystitis comes on in the course of a chronic affection of the bladder or in a weak elderly patient arising from any cause, but especially when there is urinary obstruction due to tumour, calculus, enlarged prostate, or urethral stricture, the condition may become very serious suddenly, and require prompt treatment to avoid general sepsis. Clearly the first indication is to relieve the obstruction and give free exit to the urine, and this should be at once done by establishing a suprapubic drain. The acute inflammation of the bladder must be allowed to subside before any attempt is made to deal with the other conditions present. Suprapubic cystostomy when performed early is such a safe operation, and so immediately followed by relief of symptoms and release from danger, that in such cases there should be no hesitation in resorting to it.

Chronic Cystitis.

Chronic cystitis is generally associated with incomplete evacuation of the bladder, so the first essential point to attend to is to see that its contents are emptied at regular intervals and that the source of obstruction is removed.

The whole condition of the individual case must be carefully considered. In some instances a cure may be effected by prolonged constitutional and mild local treatment, in others the sooner a suprapubic drain is established the better. In the former the whole life of the patient must be carefully regulated. Diet must be simple and moderate in amount, exposure to cold and wet, travelling, riding, cycling, or much active exercise must be avoided. Fluids should be taken in good quantity and milk diet adhered to three days a week, and stimulants, unless in exceptional cases, are not admissible. Saline and sulphur baths are useful, and the administration of infusions of uva ursi, pareira brava, or triticum repens, in doses of 8 ounces three times daily, so long as the digestion is not disturbed is advisable.

Internal remedies are not of much service if we except boric acid and helmitol, or a combination of boric acid and benzoate of soda. When the urine is acid alkalines and alkaline salts are indicated, but when it is alkaline the administration of drugs has no influence upon its reaction, which is due to decomposition of urea in the bladder.

A cystoscopic examination having demonstrated the lesion present, suitable local treatment must be employed in combination with the general treatment above indicated.

(*a*) Cases of uncomplicated chronic cystitis due to an *organism which does not decompose urea* are best treated by regular irrigation; simple withdrawal of the urine is not sufficient. In infection by bacillus coli frequently the bladder wall is coated with flaky mucus which adheres firmly to the mucous membrane, and this must be washed away by irrigating the bladder very freely morning and evening *regularly*. Regularly, because if the irrigation be interrupted before the bladder is thoroughly cleansed the bacilli have an opportunity of reasserting themselves. Distend the bladder as fully as possible short of producing pain, and empty it from four to six times at each sitting. This must be done by the surgeon, not by the patient, however practised he may be in the use of the catheter, and with a syphon arrangement. Syringes are no use.

If a patient is lying upon his back or even standing, and say 12 ounces of fluid is introduced by a syringe and the fluid allowed to escape through the catheter, not nearly the whole of the fluid may come away; but if the catheter is continuous with a syphon tube with a 2-foot fall, not only will the bladder be completely emptied but the solution will be withdrawn rapidly and with suction, and the cleansing thereby rendered more thorough. Besides, by using a syphon the pressure employed is known; with a syringe it is impossible to judge the force employed.

The simplest plan is to have the first limb of a T-tube fixed to a gum-elastic catheter; from the second limb of the T have a clipped rubber tube leading from an irrigator elevated 2 feet above the bed to give ingress pressure; and to the third limb have a clipped rubber tube falling to a vessel on the floor, which will give an egress suction of a 2-foot fall. Fill the tubing and catheter with solution, close the ingress tube with a clip, and then, having introduced the catheter into the bladder, open the clip which allows the contents to escape, but do not empty the bladder, as it is liable to cause irritation. Then close this clip and open the ingress tube, distending the bladder till the patient complains; then allow the solution to flow out into a glass vessel, and repeat the irrigation until the fluid escapes perfectly clear. This is repeated morning and evening until the urine passed naturally is sterile.

A cystoscopic examination should then be made, and if irritation be noticed at the neck of the bladder one or two instillations of nitrate of silver by means of Guyon's catheter may be given. The bulb of the catheter is passed beyond the grasp of the compressor urethræ, and a 1 per cent. solution of nitrate of silver is slowly passed in until 20 to 30 drops have been injected. They are allowed to remain, and their action is soon neutralised by the salt in the urine.

(*b*) When the cystitis is due to *organisms which decompose urea* the carbonate of ammonia formed renders the urine very irritating and offensive, so that the bladder and urethra are less able to tolerate active local treatment than in the cases above described. Consequently great care is required in the selection of the agents to employ, in fear that the irrigation in place of relieving the condition may aggravate it. Probably the best agent to use to begin with is permanganate of potash 0·025 per cent., and gradually increasing to 0·1 per cent. solutions. At first the bladder may only admit a small quantity. In such instances continuous irrigation for ten minutes through a double catheter is most useful, the ingress irrigation being raised to 2½ feet and the egress vessel to 1½ feet, so that the fluid within the bladder is submitted to a constant pressure of a little over 1½ feet column of fluid. This may be repeated daily.

When the urine is alkaline after irrigating an instillation of pure lactic bacillus cultures in milk whey or the filtrate of saurine may be employed with great advantage. By setting up an acid fermentation the urea-decomposing organisms are weakened or destroyed and the phosphates dissolved.

If irrigation improves the condition of matters, the micturition becoming less frequent, the urine less purulent and offensive, and the general health of the patient more satisfactory, then other agents, such as boric acid, acetate of lead (1–2000), or nitrate of silver 1/12th grain to the ounce, may be used with advantage, and finally instillations of a stronger solution may be employed.

Notwithstanding careful local and general treatment, a certain number of cases of chronic cystitis persist, especially in those in which there is residual urine, or in which the kidneys are involved in the infection. In these, continuous drainage by tying in a catheter has been recommended by some surgeons, with the precaution that a soft rubber instrument should be used, removed daily and sterilised and reintroduced. Beneficial results are sometimes obtained, but more commonly the urethra becomes intolerant of the catheter and the treatment is discontinued.

Often in these patients the cystitis has led to an inflammatory enlargement of the prostate, and the contents of the bladder are found to be so viscid that they will not flow through the catheter or wash out with the irrigator. When this is so, or when there is hypertrophy of a muscular coat and sacculation, stone or tumour, a *suprapubic drain* must be established to give free exit to the contents of the bladder and allow of thorough cleansing. A temporary drain of this kind is by far the most effective treatment of chronic cystitis, and even in the most persistent and intractable cases astonishing results are obtained. Not only does the urine become healthy and the mucous membrane normal, but large, inflamed, softened prostates subside, and in a few weeks the wound may be allowed to close. In many cases this inflammatory enlargement is liable to be mistaken for hypertrophy of the prostate, and the danger is that the prostate may be excised when a cure might be effected by drainage alone. The drainage employed is by syphoning the urine into a suitable vessel so as to permit the patient to go about with freedom. The method used for the last nine years[1] is easily carried out and has been very successful.

In cases in which it is necessary to drain the bladder for a considerable period it is a great comfort to the patient to be able to move about unhampered by bulky and often soaked dressings. When such dressings are used the patient is not only hindered from following his occupation, but on account of the offensive odour necessarily connected with them he is precluded from associating with his fellows. Direct drainage by syphoning the urine into a suitable vessel permits the patient to go about with freedom, the skin and clothing are kept dry, the patient is not incommoded by the constant changing of dressings, and considerable expense is saved.

Take, for example, a case in which for chronic cystitis from infection with staphylococcus pyogenes aureus suprapubic cystotomy has been performed. At the operation a large drainage-tube in inserted through the wound into the bladder. The following day to the outer end of the rubber tube a glass T-tube is fixed and kept in position by a shield of block tin. To protect the skin a fold of gauze is placed below the shield, and over it a firm belt or bandage to keep it in position. To the upper limb of the T-tube a short length of rubber tubing is attached and to the lower limb a tube about 3 feet long. This tube is carried to a glass tube, which passes through a rubber cork to the bottom of a small wash-out cistern which has been nearly filled with boric solution. By fixing an empty syringe to the short length of rubber tubing and exhausting, the fluid from the cistern is drawn up to fill the rubber tubing, when the short tube is clipped. The cistern is fixed to the side of the bed, giving the fluid a fall of about 14 inches. When the cistern is filled above a certain level the syphon action comes into play, and the cistern empties its contents through a tube into a vessel placed on the floor. For the first week a small dressing is required, and may be changed once daily if soiled. When the wound has healed and the patient is able to be out of bed the wash-out cistern should be replaced by a flask.

An "Alexandra" baby's feeding-bottle with a rubber stopper answers admirably. The lower tube is fitted to the tube in the flask, which is turned up at the lower end so as to prevent air entering and the tubing becoming empty, when it is withdrawn from the flask. When the patient is going about the flask may be carried in a hip-pocket, or if this is inconvenient its place may be taken by a rubber urinal.

This drainage must be supplemented by careful irrigation, and if the urine is alkaline, or contains alkaline phosphates after irrigating, an instillation of lactic bacillus cultures should be given. Milk whey containing pure lactic bacillus not only destroys the septic organisms in the bladder but also dissolves phosphatic crusts adhering to the bladder or the wound. The filtrate of saurine does admirably and may be used with advantage in all purulent conditions. A suppurating sac or a granulating surface thoroughly washed regularly with it cleans up rapidly; it acts more satisfactorily than any chemical antiseptic, and the lactic acid bacillus not being a pathogenic organism does no harm. In some cases quite remarkable results have been obtained.

In very contracted bladder it is difficult to expose the organ, and a considerable thickness of wall requires to be cut through before the cavity is reached. But when the source of irritation is removed and free exit given to the urine it is astonishing how soon the bladder becomes capable of distension. In cases where with the finger through the suprapubic wound the bladder felt like a hard ball with a cavity of the size of a walnut, the patient has ultimately been able to retain from 12 to 15 ounces of urine, and micturated not more than four or five times in 24 hours.

(*c*) Cystitis consequent on *infection by tubercle bacillus* is in almost all cases secondary to tuberculous nephritis, and so long as the kidney is excreting infected urine into the bladder no treatment of that organ is of any avail. First to be considered are those cases where both kidneys are involved or where the affected kidney cannot be removed; secondly, cases in which nephrectomy can be done; and thirdly, those rare cases of primary vesical tuberculosis.

The first category are very hopeless, and all we can do is to alleviate suffering. So long as the infection is pure the symptoms are not very severe, but when it becomes mixed—namely, both tuberculous and septic—general cystitis is set up, and adds greatly to the seriousness of the disease and the suffering of the patient. Hence the employment of the catheter must be undertaken with a full sense of the responsibility involved in keeping the bladder thoroughly aseptic. These cases are unusually liable to infection, and it is very questionable if benefit should be sought from local treatment so long as the urine remains acid.

For the relief of pain morphine or belladonna suppositories are useful, and phenacetin and hyoscyamus given internally are most effectual. In those hopeless cases of general cystitis caused by mixed infections often the continual pain and constant desire to micturate can only be relieved by cystotomy and drainage. Of course, in such instances no attempt can be made to remove the disease.

[1] A Method of Draining the Kidney and Bladder, Glasgow Medical Journal, September, 1907.

In tuberculous cystitis secondary to unilateral renal infection, after nephrectomy the bladder condition may heal spontaneously. At all events, in such cases the primary affection must be dealt with first. Supposing the kidney has been removed and some months have been allowed to pass but still the bladder condition remains troublesome, and the cystoscope shows little or no improvement in the appearances, what should be done? It is taken for granted that general constitutional treatment has been carried out: tuberculin R used, regulated by the opsonic index, tonics, iron, strychnine, cod-liver oil, and urinary antiseptics have been prescribed; the patient has had the advantage of open-air treatment and regular dieting. Instillations and irrigation have not given encouraging results and often do harm.

The perchloride of mercury has certainly done good in some cases, but in the majority the effect has been harmful. Lactic acid, pyrogallic acid, creosote, and nitrate of silver are of no value as remedies. Guaiacol along with iodoform mixed in oil, 2 to 3 per cent., is most useful of any, but probably the best results are got by introducing four ounces of sterilised olive oil, or an emulsion of iodoform in olive oil, and instructing the patient to micturate standing until he notices the oil coming away, and then to stop. Some of the oil remains in the bladder, generally for 12 or 18 hours, and certainly helps the healing process. The injection may be repeated every day, and the bladder should be well washed out prior to the introduction of the oil.

Rovsing has reported good results from the injection of 100 c.c. of a 0 5 per cent. solution of carbolic acid in water. He allows it to remain in for five minutes, then draws it off through the catheter. The writer also has had good results from this treatment, better probably than from any other. But it must be combined with complete rest in bed.

Should time pass and still cure be delayed, four courses are open: (1) Instillations of perchloride of mercury; (2) curetting the bladder, in the female per urethram, in the male through a suprapubic opening; (3) injection of 2 per cent. thallin sulphate; and (4) suprapubic drain.

There is no doubt perchloride of mercury 1–20,000 to 1–10,000 parts of sterilised water produces a very beneficial result, and certainly warrants a fair trial. But as it occasions considerable pain the patient is often unwilling to give the treatment a chance. To use cocaine or other local anæsthetic before the instillation is inadvisable, but a subcutaneous injection of morphine or a general anæsthetic may be used. The instillation of half an ounce of the solution should be administered every third day on three occasions, then discontinued for a fortnight, the patient being kept at rest but not in bed. Nitrate of silver instillations should never be used.

Curetting the tuberculous ulcers or nodules through the urethra in the female, or a suprapubic wound in the male, often helps matters very much, and the establishment of a suprapubic drain gives the bladder rest and free exit to the urine, and at the same time the viscus can be carefully and regularly douched, either with weak boric acid solution, 0·5 per cent. solution of carbolic acid, or 2 per cent. thallin, and the ulcers may be swabbed with pure phenol through a speculum, and the action of the agent checked by washing afterwards with a solution of bicarbonate of soda.

The following statistics collected by Walker are of interest[2]:—

Summary of Walker's Statistics.

—	Cases.	Cured.	Deaths.	Improved.	Not improved.	Worse.
Nephrectomies	16	9	5	2	—	—
Nephrotomies	2	—	2	—	—	—
Suprapubic cystotomy, curetting	121	9	28	48	34	—
Curetting *vid* female urethra	17	2	0	5	10	—
Perineal section	21	0	10	5	3	3
Vesico-vaginal incision	5	0	1	4	—	—
Total	182	20	46	64	47	3

[2] Watson and Cunningham: Diseases and Surgery of the Genito-Urinary System, vol. ii., p. 414.

Non-operative Methods.

—	Cases.	Cured.	Deaths.	Improved.	Not improved.	Worse.
Injections of iodoform	31	1	—	23	7	—
Of sublimate	38	2	—	18	15	3
Of guaiacol	2	—	—	—	2	—
Gemol	2	—	—	1	—	1
Tuberculin	4	—	—	—	2	2
Climatic or medical	18	6	—	12	—	—
Total	95	9	—	54	26	6

The above statistics date from 1907, and hence do not give the best results now obtainable. The diagnosis can now be made at the beginning of the disease, and the primary focus of infection in the kidney can be removed at an early date in the history of the malady. If this be done, followed by free drainage and complete rest of the viscus for several weeks, together with the administration of tuberculin R., with the dosage regulated by the opsonic index, there is some hope that vesical surgery will be elevated out of the pitiful position it not long ago occupied in relation to tuberculosis of the bladder. Until five years ago cystostomy was employed in the late stages of the disease only, when the patient was tortured by pain and frequent micturition. While in such cases it undoubtedly gave marked relief of the symptoms, from the very nature of the conditions present the operation could not be expected to be a curative one. Now, when attacked early—namely, while the mucous membrane alone is involved, as demonstrated by the cystoscope—cures may be obtained. The writer intends publishing at an early date cases in which perfect healing has taken place, and the patients are now alive and well.

Glasgow.

TWO CASES OF

VOLVULUS COINCIDENT WITH STRANGULATED HERNIA.

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CASE 1.—The patient was 55 years of age and had for years been the subject of a large inguinal hernia. After a hearty supper on the evening of March 13th, 1910, he had sudden pain in his abdomen and vomited several times. The vomiting brought down the hernia, and he was unable to get it back. During the night he had violent diarrhœa and more vomiting, and early next morning he was admitted to the Royal United Hospital.

When I saw the patient there he was complaining of severe abdominal pain, and was constantly vomiting bile-stained fluid without fæculent odour. He looked pinched and ill, his pulse was weak (100 to the minute), and his temperature 99·2° F. There was present a very large right scrotal hernia, obviously strangulated. His abdomen was moderately distended, tender, and rigid, but no swelling could be felt.

Operation was performed 14 hours after the onset of the symptoms. An incision was made over the sac, which contained much dark-brown foul-smelling fluid. The bowel was dark and ecchymosed. A constriction at the neck of the sac was divided, and on pulling down the intestine its condition above the site of strangulation was found to be no better than that below. Coil after coil of black swollen bowel was pulled down, till the origin of the trouble was found to be in a twist which had occurred 3 inches from the ileo-cæcal valve. At this situation a loop of ileum had formed a half-turn on itself from left to right, and here both limbs of the loop were completely gangrenous. The peritoneal cavity contained a large quantity of blood-stained fluid. It was felt that the only chance of recovery lay in the complete removal of the volvulus, so the wound was enlarged upwards and the whole resected. The method used was that which has been described by Barker, the divided distal end of the portion

of bowel about to be removed being allowed to hang over the side of the table and syphon off its contents into a pail while the mesentery was being ligatured off. The divided ends were then closed and a lateral anastomosis was made between the remains of the ileum and the cæcum. A drain was left in the neighbourhood of the junction and the wound was closed. Three pints of saline solution were infused into a vein while the operation was in progress. The portion of ileum resected was found to measure 7 feet in length.

The patient made an uninterrupted recovery, the bowels acting naturally on the third day. During his stay in the hospital he generally had one loose action of the bowels every day, and the restoration of his strength did not appear to be in any way retarded by the loss of so large an area of absorbent surface.

CASE 2.—The patient, a woman, 74 years of age, was admitted to the Royal United Hospital in February, 1911, with a history of complete intestinal obstruction and abdominal pain for eight days, and of vomiting for two days before admission. About a year before she had suffered from an abscess in the right groin, which healed up after being opened.

On admission the patient was drowsy and flushed, with a pulse of 96 and subnormal temperature. She was vomiting fæcal-smelling liquid. Her abdomen was much distended, and visible peristalsis was present. Nothing could be felt per rectum. There was a scar in the right groin, with a soft indefinite swelling under it, which was not particularly tender and did not give one the impression of being a hernia.

The diagnosis was intestinal obstruction, probably due to growth. The abdomen having been opened in the middle line, the small intestine was found to be distended, and the cæcum and colon collapsed. A coil of distended ileum was traced down to the neighbourhood of the right femoral canal, close to which it was found to be twisted on itself and to be the site of obstruction. The extremity of the coil protruded into the femoral canal, where it was strangulated in part of its circumference. A second incision was made over the femoral ring and the sac of a hernia opened. The strangulated coil was freed and returned to the abdomen, where it was untwisted and wrapped in gauze. The hernial sac also contained a densely adherent appendix vermiformis, which on being removed was found to have its lumen obliterated. In all probability the history of "bubo" was to be explained by the occurrence of an appendicular abscess in the sac of the hernia. After radical cure of the hernia, on returning to the abdomen it was found that a patch of gangrene was present where the bowel had been caught by the femoral ring. This patch was inverted, and, the rest of the intestine being in good condition, the wounds were closed.

This patient also made a satisfactory recovery, save that after the stitches had been removed on the tenth day she extruded her intestines through the wound during a fit of coughing. The extruded coils were at once cleansed and returned and the wound re-sutured, and she appeared to be little the worse for the accident.

Remarks.—These two cases are examples of the combination of volvulus with strangulated hernia, to which attention has been called in recent years by several writers, notably Knaggs,[1] Dobson,[2] and Miller.[3] They form a very marked contrast in the severity of the symptoms which may be met with in cases of this kind, where conditions exist which, though anatomically alike, differ both in degree and in mode of production.

In the first case it is, I think, clear from the history that the volvulus was the primary trouble, and that the strangulation of the hernia was produced by the vomiting and by the swelling of the affected intestine consequent on this. The amount of intestine involved being very large, the mesenteric blood-vessels were immediately occluded by the twist, with the result that in little more than 12 hours after the onset of symptoms the intestine was reduced to a condition in which complete excision became necessary to save the patient's life.

In the second case, on the other hand, there can be little doubt that the pinching of part of the circumference of a loop of ileum in the femoral ring was the primary trouble. The strangulation not being very tight the vitality of the bowel was not immediately endangered, and probably owing to peristaltic movements and the fixation of the bowel at this point the volvulus occurred secondarily. As only quite a small loop was involved the blood-supply was not entirely cut off, but complete obstruction of the bowel was produced by the pressing together of the limbs of the loop at the point where the twist took place. The result was that after eight days' obstruction the condition of the second patient was better than that of the first at the end of 12 hours, and a simple operation was sufficient to remedy the trouble.

In neither case was a correct diagnosis made before operation. In the second case probably this was excusable, but in looking back on the first case one feels that the gravity of the patient's condition only 12 hours after the beginning of his illness ought to have suggested that behind the obviously strangulated hernia some further and more severe cause of trouble might be in existence.

With regard to the successful issue after so extensive a removal of intestine, I think one may attribute it in the first instance to the continuous intravenous infusion of saline throughout the operation, which was kindly carried out for me by colleagues at the hospital; and, in the second place, to the use of that most valuable device, described by Barker, of using the whole length of the intestine about to be removed as a syphon, whereby large quantities of septic fluid can be drained off from the obstructed bowels.

In the excision of inflamed or gangrenous intestine it appears to me that one of the most important points, and one to which sufficient attention is not given in text-books, is the treatment of the mesentery. This structure, in all cases of which I have personal experience, is enormously swollen and œdematous and its vessels are engorged with blood, with the result that severe hæmorrhage is apt to occur when the clamps are removed after it has been divided. Such loss of blood, in addition to the already grave shock associated with these operations, is, I believe, sufficient sometimes to turn the balance against recovery.

To avoid this hæmorrhage as far as possible the mesentery should, as recommended by Barker, be first folded on itself and clamped in its whole length, parallel to the long axis of the intestine to be removed, with long powerful clamps (pylorectomy clamps answer admirably). The bowel is then cut away from the mesentery, and while the divided lower end of the part to be removed is syphoning off its contents, the whole mesentery is ligatured off, distal to the clamps, by interlocking sutures, passed through both leaves and back again with a large straight needle carrying stout linen thread. In order to interlock the sutures the second must be passed before the first is tied, the third before the second is tied, and so on to the end.

Even after carefully ligaturing off the whole margin in this way bleeding may still be found to occur from a few points after removal of the clamps, owing either to the failure of the ligatures to sufficiently compress the large vessels in the swollen mass of tissue or to some of them having cut through portions of it. These points can, however, easily be tied separately.

The ordinary method of a simple running or blanket suture along the divided margin of the mesentery is useless in such cases, and if depended on will lead to severe loss of blood the moment the clamps are removed.

The interesting question as to how far nutrition suffers in persons who have lost a large portion of their small intestines is answered, in the case of my patient, by a letter received from him in January last—i.e., 1 year and 10 months after the operation. He states that his health and appetite are good, and that it makes no difference to him what kind of food he eats; that his bowels act regularly two or three times a day; and that he regularly does light work.

Except, therefore, for some looseness of the bowels this patient does not appear to be appreciably the worse for the removal of what in all probability amounted to more than half the length of his ileum.

Bath.

[1] Annals of Surgery, 1900; THE LANCET, June 16th, 1900 (p. 1726), and March 6th, 1909 (p. 676).
[2] THE LANCET, March 6th, 1909 (p. 679).
[3] Annals of Surgery, 1911.

A VAGINAL PESSARY RETAINED FOR TWENTY-NINE YEARS.

PERFORATION OF THE BLADDER AND FIXATION OF THE INSTRUMENT BY A LARGE PHOSPHATIC VESICAL CALCULUS; LITHOTRIPSY; RECOVERY.

BY A. C. BUTLER-SMYTHE, F.R.C.S. EDIN.,

SURGEON TO THE SAMARITAN FREE HOSPITAL FOR WOMEN, MARYLEBONE-ROAD, LONDON, AND TO THE GROSVENOR HOSPITAL FOR WOMEN AND CHILDREN, WESTMINSTER.

THE following case is of so uncommon a character that the notes of it will, I feel sure, be interesting to readers of THE LANCET.

The patient, a decrepit and emaciated old woman, aged 58, came under the notice of my colleague, Dr. J. A. Willett, in the out-patient department of the Samaritan Free Hospital for Women on Dec. 27th, 1911. She complained of the dribbling away of urine and of a slimy blood-stained discharge from the front passage, which she said had been going on for three weeks. On seeing that the patient had some sort of a pessary tightly fixed in the vagina Dr. Willett admitted her under my care. The following history was with difficulty elicited owing to the woman's exhausted condition. She had married at 25 years of age, and her only child had been born three years later, the labour being a bad one. The child, a girl, lived a few months. During the next few years the patient had four miscarriages at the third month or thereabouts. Some years later the womb dropped, and 29 years ago she went to a hospital and had a support inserted into the front passage. She had worn the same instrument ever since. About 14 years ago she had had it seen to, but the medical man did not remove it. She had used a Higginson's syringe regularly in order to keep the instrument clean. About two and a half years ago she had noticed that the urine was dribbling away, and that there was a blood-stained discharge from the front passage. These troubles continued for a time and then ceased. She kept on with her work until three weeks previously, when the dribbling and discharge came on again and she sought advice. Visual examination showed the vulva, the perineum, and the sacral region to be excoriated from contact with urine and discharge. Immoveably fixed in the vagina, and protruding from its orifice was seen a portion of a pessary encrusted with phosphatic deposit. The vaginal canal was so contracted that thorough examination by finger was impossible without the aid of an anæsthetic, and manipulation of the pessary failed to produce any appreciable movement of the impacted instrument.

On Jan. 3rd, 1912, an anæsthetic was administered by Dr. R. E. V. Hale, and assisted by the resident medical officer, Mr. D. W. Roy, I proceeded to dilate the vagina and remove the pessary. The vaginal tissues had overgrown the embedded sides of the instrument, and the granulations had to be dissected away. No amount of dragging on the pessary served to loosen it or draw it down; in fact, it seemed to be immoveably fixed in the upper part of the vagina, where a mass of granulations and phosphatic deposit could be made out, with a bar or limb of the instrument firmly fixed at that point. A sound was then introduced per urethram and a large calculus was detected filling the cavity of a contracted bladder. On pushing up the pessary, with the sound in the bladder, it was felt that the instrument had perforated that organ and was connected with, and probably embedded in, the calculus. It was obvious that with such a contracted bladder, no enlarging of the fistula or incising of the bladder per vaginam would allow of the extraction of such a large calculus, and the only method that could with safety be adopted was lithotripsy. A strong forceps was therefore passed alongside the limb of the pessary into the bladder and the lower portion of the stone broken up. The instrument then became loose and was extracted, free bleeding following its removal. The remaining portion of the calculus was then crushed and removed piecemeal by forceps and scoop and the débris washed out. On introducing the examining finger through the fistulous opening into the bladder it was felt that the walls were encrusted with thick phosphatic deposit which on being broken down left a granulating surface which bled profusely. The bladder was washed out again and again with hot boric solution without any effect on the hæmorrhage, but when a hot injection of hazeline was employed the bleeding promptly ceased. The vagina was then douched with iodine (℥ii. to 1 pint), and lightly plugged with iodoform gauze, and the patient removed to bed. The severity of the operative measures, which extended over an hour, must have been a great strain on the patient, and her condition at the close was not all that could be desired: However, she rallied well, and on the following morning, much to my surprise, was in a very fair condition and comparatively free from shock. With the exception of occasional hæmaturia and rises of temperature she made an excellent recovery from the operation. Later on I hope to repair the vesico-vaginal fistula.

The instrument removed was what is called Greenhalgh's bendable pessary. It is made of tough copper wire covered with rubber, and its ends are joined by soft rubber tubing. (In my opinion, it is one of the most atrocious instruments ever invented for the torture of womankind.) One limb of the pessary had perforated the anterior vaginal fornix on the left side of, and in front of, the cervix uteri, and had penetrated the bladder, the opening into that organ being large enough to admit a finger. The anterior vaginal fornix was also separately perforated, on the right side, but the pessary had not passed through the walls of the bladder. The calculus was composed of phosphates. It completely filled the bladder and was about the size of a small Tangerine orange. For how long the calculus had been in the process of formation must remain a matter of conjecture, but its commencement probably dated from two and a half years ago when the dribbling of urine and bloody discharge were first noticed by the patient. Presuming that the penetration of the limb of the pessary into the bladder occurred two and a half years ago, a curious feature in this case is the fact that the opening in that organ should have become blocked up and rendered almost watertight for such a length of time by the deposit of phosphates around the end of the pessary within the bladder, and the granulations and concretions on the vaginal surface. The caked condition of the interior of the bladder and its contracted state seemed to point to the fact that for some time dilatation and contraction of that organ must have been incomplete. Whatever happened to cause the unblocking of the fistula, and the recurrence of the dribbling of urine can only be surmised. Possibly, in sitting down, some unusual pressure was put on the protruding end of the pessary, pushing it upwards and thus partly dislodging the phosphatic deposits in the vaginal fornix and in the bladder. It is to be presumed that the individual who inserted the pessary had placed it in its correct position—that is to say, with its posterior end behind the neck of the uterus. Owing, however, to the rotting and parting of the rubber tubing the instrument had become displaced, its ends being carried forward in front of the cervix uteri, and these pressing upon the fornix eventually resulted in ulceration and perforation of the vaginal wall and of the bladder.

The pessary, together with the phosphatic débris of which the calculus was composed, are now in the museum of the Royal College of Surgeons of England.

Brook-street, W.

TWO CASES OF PNEUMONIA TREATED WITH PNEUMOCOCCUS VACCINE.

BY GRENVILLE P. JONES, M.R.C.S. ENG., L.R.C.P. LOND.

THE following notes may prove of some interest owing to the fact that the cases responded so readily to the injection of pneumococcus vaccine.

CASE 1.—The patient, a female child, aged 12, was seized with a severe rigor on Oct. 3rd, 1911, lasting for about half an hour. Previous to this she had suffered from a bad cold for the last ten days. On seeing the child for the first time on Oct. 4th her condition was as follows. Face flushed; respirations 30, short and catchy in character. Complained of pain in left side, and troublesome cough. Temperature 102° F. Physical examination showed impaired movement over the whole of the left side of the chest, together with increased vocal vibrations and moist râles. Just below the angle of the scapula was a small area of bronchial breathing, around which were some fine crepitations. The right side of the chest showed nothing abnormal. On the 6th the temperature was 103·6°, and the area of bronchial breathing had increased in size. On the 8th the temperature was 102°,

but the general condition of the patient had become much worse and the breathing was more laboured. The physical signs on the left side were unchanged, while on the right base the air entry was diminished and a small area of bronchial breathing was found just below the angle of the scapula. The child's condition remained much the same during the next few days. On the 13th the patient seemed very much worse, and at 11 P.M. 1 c.c. of pneumococcus vaccine (Parke, Davis, and Co.) was injected. On the 14th, at 8 A.M., all the acute symptoms had disappeared and the breathing was quiet and regular, the temperature having dropped to 98·6°. The patient continued to improve during the next few days. On the 20th the temperature rose to 100° and remained at this level for some days, but the general health of the patient continued to improve. On Nov. 6th an exploratory needle was inserted into the left side and pus was discovered. On the 7th I excised a portion of the sixth rib in the post-axillary line and let out about 6 oz. of very thick but non-offensive pus, the anæsthetic being administered by my partner, Mr. W. R. L. Drawbridge. From this date the patient made an uninterrupted recovery.

CASE 2.—The patient, a man aged 45, was seized on Jan. 8th, 1912, with a rigor and pain in the right side. When I first saw him on the 10th he appeared to be acutely ill. The face was cyanosed; there was a troublesome cough, with a quantity of rusty sputum; and sharp pain in the right side was complained of. The temperature was 101° F. The physical signs showed a diminution of air entry into the right lung, the percussion note being dull at the base, with a large area of bronchial breathing over the right base behind. At 11 P.M. on the same evening the patient's condition became very critical; the respirations became more laboured and there were increased cyanosis and a failing pulse. Pneumococcus vaccine (1 c.c.) was then injected. On the 11th, at 5 A.M., the patient was much improved; the respirations were quieter and easy, there was less cyanosis, the pulse was stronger, and the temperature was normal. The patient continued to improve daily.

From a careful observation of these two cases I cannot help thinking that the pneumococcus vaccine was largely instrumental in bring about a favourable result.

Ellesmere, Salop.

LITERARY INTELLIGENCE.—Messrs. Henry Frowde and Hodder and Stoughton announce for early publication in a very long list of works the following:—1. A new revised fifth edition of Cunningham's well-known "Manual of Anatomy," Vol. I., edited by Professor Arthur Robinson, professor of anatomy at the University of Edinburgh. Cunningham's work is so well known that there is no intention on the part of the professor who has revised it to alter it in any way except in accordance with the international terminology and where it has appeared that new colour illustrations are desirable or the method of dissection has to some extent been altered to suit surgical needs. In these parts of the work a very thorough revision has been made, and it is hoped that the work will remain a worthy memorial of its author. 2. A large "Practitioners' Encyclopædia," by many authors, comprising medicine in all its branches. Nearly 1000 pages. In one volume. Edited by J Keogh Murphy, F.R.C.S. 3. A third volume of Thomson and Miles's "Surgery," dealing with "Operative Surgery." Pp. 500. With very numerous illustrations. This is in the press. It will be as small and compact as possible, but of very wide scope and very fully illustrated. 4. "A Text-book of Nursing, both Surgical and Medical," by E. W. Hey Groves and J. W. Fortescue-Brickdale, comprising anatomy and physiology as well as the methods of surgical and medical nursing, and designed to be complete in itself for nurses. Royal 8vo, pp. 388. 205 figures in the text. Companion to Despard's "Text-book of Massage." 5. "Surgery of the Rectum for Practitioners." By Sir F. C. Wallis. With about 130 illustrations. 6. "Gonococcal Infection." By Major C. E. Pollock, R.A.M.C., and Major Harrison. Pp. 222 7. "Surgery of the Skull and Brain." A large monograph by L. B. Rawling, F.R.C.S. Pp. 252, 96 figures. 8. "Salvarsan in Syphilis and Allied Diseases." By J. E. R. McDonagh, F.R.C.S. About pp. 175. 9. "Kidney Diseases." By W. P. Herringham. A large practical work.

Medical Societies.

ROYAL SOCIETY OF MEDICINE.

MEDICAL SECTION, WITH SECTIONS OF SURGERY AND ANÆSTHETICS.

Exophthalmic Goitre.

A JOINT meeting of these sections was held on Feb. 27th, Dr. FREDERICK TAYLOR, the President of the Medical Section, being in the chair.

The discussion on Dr. T. P. Dunhill's paper entitled, "Partial Thyroidectomy under Local Anæsthesia, with Special Reference to Exophthalmic Goitre," which is published in full in THE LANCET of Feb. 17th, p. 422, was renewed.

Dr. HECTOR MACKENZIE said that he proposed first to make a few observations on the paper itself, next to say something about his own experience of the disease and its treatment, and finally, to attempt to arrive at a right conclusion as to what kind of treatment is best and safest. Dr. Dunhill had said that he had operated upon 230 cases of exophthalmic goitre with only four deaths, a result as remarkable as it was gratifying from the surgical point of view. He wished Dr. Dunhill had entered into more detail about his cases. Dr. Dunhill mentioned four types of the disease, but he did not tell them how many of his cases belonged to each class, so that he (Dr. Mackenzie) could form no idea as to how many of the 230 cases were acceptable as genuine examples of exophthalmic goitre. This made it difficult to judge his results. Dr. Dunhill said that in cases of the first class, with local anæsthesia and expert operating, the danger was *nil*, but he had made little use of general anæsthesia, and, therefore, his experience did not help much in deciding the comparative risks attending general and local anæsthesia. Sir Victor Horsley had used general anæsthesia, and had had only one death. His own experience had taught him that roughly about 25 per cent. of the cases make a complete recovery, under general medical treatment another 25 per cent. recover, but bear signs of their former illness, about 25 per cent. live on as chronic invalids, and 25 per cent. died from the disease. At St. Thomas's Hospital until 1908 few cases had been operated upon; since then the cases so treated numbered 19. Six had died, 4 had improved markedly, 4 showed some improvement, 3 were unchanged, 2 relapsed and were readmitted. Two other cases were not followed. Of the 6 fatal cases, 2 died shortly after the operation, 1 two days after, 1 four days after, 1 eight days after, and 1 a year after, following operation for adenoma. Ligation of the vessels had been performed in some, and thyroidectomy in others. During the last year 7 or 8 had been operated upon; 1 had died, the others expressed themselves as better, none were cured. Where Dr. Dunhill's paper failed to convince was that the cases had not been followed long enough, and it was impossible to say if they would relapse again. His own belief was that there was a certain type of case in which it was dangerous to operate, whether under local or general anæsthesia. These were examples of what is called lymphatism. He thought operation should never be employed as a last resource. He had for a long time been feeling his way towards the adoption of operative treatment, but his path had been beset with obstacles. There had been a relatively large proportion of deaths, and the results in those who had survived had been disappointing. Were it not for the risk to life from thyroidectomy he would not hesitate to recommend it as the most rational and practical method of treatment. There was a good prospect of recovery under medical treatment in the milder forms of the disease, and there did not seem to be so much better prospect after operation as to warrant incurring the risk. In acute and severe cases he did not consider the operation justifiable.

Dr. ALBERT KOCHER (Berne) read a paper on the Surgical Treatment of Graves's Disease. He said:—

Mr. President and Gentlemen,—It was with great pleasure that I accepted the very kind invitation of the secretary of your society to take part in to-night's debate on Exophthalmic Goitre. There are but few diseases on which more

has been written in medical papers than Graves's disease. I am pleased to say that there is to-day nearly unanimity as to the pathogenesis of the disease being a functional trouble of the thyroid gland. The very different features, degrees, and course of the malady have, however, made it difficult up to the present to fix the exact functional change in the gland. Some pioneers, of whom I will only mention Sir Victor Horsley, Moebius, and Rehn, have, according to their own observations on different lines, described the disease as dysthyreosis or hyperthyreosis. The latter view, however, has gained ground very much by the results of surgical treatment, and my father, Theodor Kocher, who has been operating for 30 years on the thyroid gland in Graves's disease, is the main advocate of the theory of hyperthyroidism, basing his opinion on his extensive operative experience, of which he spoke at the meeting of the British Medical Association in 1910. The operations for Graves's disease in the surgical clinic at Berne up to date amount to 865, performed on 669 patients. With my father's kind permission I will speak of the whole of these cases, and not merely of my own, as we have observed and operated together on the great majority of these cases. As already mentioned by some of those who have spoken in the debate, it is difficult to class all the cases under one head. Allow me, therefore, to tell you in a few words how the different features of the disease have to be explained according to our present knowledge. (A) First, the different kinds of Graves's disease according to the condition of the thyroid gland itself (the following views are based on histological and chemical investigations on 200 glands of Graves's disease which will be published shortly in *Virchow's Archiv*). 1. The change in the thyroid gland in Graves's disease consists in the more rapid and more abundant absorption of the material stored in the gland follicles. There is a considerable difference in the quantity and quality of the stored material present in the gland at the time of the outbreak of the disease. 2. There is a marked hypertrophy of the epithelium. Both these changes are connected with a hypervascularisation of the gland. 3. If the disease is progressive all the stored-up material is sooner or later absorbed, according to its quantity and the rapidity of progress, and under further progression there is no more storing of material in the gland follicles, but the proliferation of the epithelium is still progressive all through the gland, and degenerative changes of the epithelium can take place together with formation and proliferation of lymphatic tissue. (B) The different kind of Graves's disease as to etiology. In the outbreak of the disease we distinguish neurogenic causes which act through the vascular nerves, and toxic causes of chemical and infectious nature, acting through the blood. They can be acute or chronic, and they can also be combined.

I will not take up your time any longer with this complicated matter; you may judge from these few remarks that a large, if not *the* largest, part of the different features of the disease lies in the thyroid gland itself. I wish, however, to draw your attention to one more point. There are a great many cases, especially combined with nodular goitre, which present a few symptoms of Graves's disease, and only occasionally (especially after iodine treatment) show exacerbation or pronounced hyperthyreosis. Since surgical treatment of the disease has become more common a great many surgeons operate, and all *these cases* are apt to be registered as Graves's disease cured by operation. This is not quite right; we should always make the following distinction. (1) Cases with symptoms of hyperthyroidism presenting only occasionally pronounced hyperthyreosis, which, however, does not last and is not progressive, being usually the consequence of unlimited iodine treatment; (2) cases of steadily progressive, and (3) of periodically progressive Graves's disease. The first also come from sudden or very rapid and abundant absorption of the thyroid secretion stored in the gland follicles (thyroid-diarrhœa, as my father calls it), but when the cause of the outbreak has passed by the gland does not undergo further change—the disease is not progressive. In the cases of the second and third type this takes place, and after a certain time of duration degenerative changes may come on, not only in the thyroid gland itself, but also in other glands with internal secretion such as the adrenals, pancreas, thymus, spleen, liver, ovaries. In other organs also permanent changes are established, such as fatty degeneration of the muscles, especially of the heart muscle, also of the kidneys and of the liver. We can, therefore, before looking upon the results, presume that in progressive Graves's disease it is *most important at what period* of the disease we operate, whilst in simple hyperthyroidism we do not risk so much in postponing operation.

Amongst our list of 669 cases, 130 were of simple hyperthyroidism, mostly combined with nodular goitre of nearly every size, some presenting no extraordinary difficulty during the operation; some, however, partly or totally intrathoracic, and being combined with hyperthyreosis, very vascular and technically very difficult operations. These cases have *all been entirely cured* of their symptoms of hyperthyreosis after the operation, with the exception of two, who died from post-operative pneumonia. In these cases we remove the cause of the disease with the goitre, and, more than that, we remove with the goitre the reservoir of the poison. Histological and chemical researches have shown that the goitre removed contains a large quantity of rather liquid colloid, in which an unusual amount of iodine is present. These cases are all suitable for operation if they are not complicated with other serious pathological changes in the lungs, heart, or kidneys. But it is advisable also to prepare these patients for operation by a short course of treatment, keeping away every toxic and nervous influence, because it is to be borne in mind for the operation itself that we have to deal with very sensitive people who are poisoned by toxins.

539 cases have been operated upon for steadily or periodically progressive Graves's disease. We are collecting the ultimate results, but with such a number they cannot be obtained as quickly as we should wish. We can at present give the ultimate results of 360 patients operated upon for progressive Graves's disease. 160 of these, 45 per cent., are radically cured, so that there is at the present time not one symptom of the disease left, and the function of the rest of the thyroid gland is normal. These cures last up to 25 years after the operation. The patients are leading a normal life, some working hard. Several lady patients have given birth to one or more healthy children since. Not all of these cases have been early ones; more than half were very severe and of long duration. The latter have been cured only after some time, during which several (up to 5) operations have been performed on the same patient. The early cases have been cured a short time after *one* operation. 149 cases, 41 per cent., show at the present moment, months or years after the operation, a few symptoms of the disease, but have been greatly benefited by the operation, inasmuch as patients of the working class, for instance, can earn their living without any difficulty. (*a*) Amongst these 149 cases there is first of all a considerable number in which a more extensive—that is to say, a second operation—would give complete recovery. Most of these patients, however, feel so well that they are unwilling to submit to any further operation. (*b*) In a small number of cases the only symptom still present is the exophthalmos, but they are not cases in which the bulb was most protruded before the operation, but cases in which the exophthalmos underwent no more change. They were sometimes combined with paresis of the bulbar muscles. I must mention here that among the 160 cases radically cured, a very large number have had an extremely marked degree of exophthalmos; in one instance the bulb came quite out one day and had to be replaced. At the present time the eyes are normal. (*c*) A further group of cases show symptoms which had been present before the operation and were the result of the toxic influence on some of the organs, due to the severity and long duration of the disease, such as chronic myocarditis, chronic nephritis, and some degenerative trouble in other glands, such as diabetes, but all symptoms of Graves's disease have disappeared. (*d*) Some patients still show symptoms of functional trouble of the thyroid gland. There is no more progressive disease, but the part of the gland left does not seem able to adapt itself to the various demands. We sometimes find symptoms of hyperthyroidism and sometimes of hypothyreosis. The gland seems to be in a labile state. The cause of this is that the progressive changes in the gland, during the Graves's disease, had gone so far that it had lost its power of storing material in the gland follicles, and the part of the gland left after operation was not able to regain this power.

However, all these 149 patients are cured of the great majority of the symptoms of Graves's disease and are able to lead a normal life. If we add this 41 per cent. to the 45 per cent. of complete cures, we can say that in 86 per cent.

the ultimate result of operative treatment has been satisfactory. In 28 cases, 8 per cent., the ultimate result cannot be called a satisfactory one. (*a*) Amongst these we find cases in which the operative treatment has not been carried on so far as to obtain a satisfactory result. Some of these patients object to further operation, not having been benefited by the first one. In some, however, the disease has gone so far, and also the shock of the first operation, sometimes only ligation of one or two arteries, has been such that a more extensive operation seems too risky, and is therefore abandoned. (*b*) The remaining cases of this group are those who have had recurrence of the disease. There are about 5 per cent. in all. In none, however, has the second attack been as severe as in the first instance—that is, before the operation. Amongst the cases registered as cured there is a number in which a second operation has cured the recurrent disease. Most of those also who show symptoms of recurrence might in a similar way be benefited by a further operation. But we have to bear in mind that partial removal (resection) of the remaining lobe of the gland in a recurrent case is extremely difficult, and therefore dangerous. It is true that in a few cases an excellent result has been obtained with it, but naturally the small part of the gland left has more difficulty in resuming its normal function. 22 patients, 6 per cent., have died since from other diseases. Only in a few instances does the former Graves's disease seem to be connected with the ultimate death. Five patients died very suddenly from what is called heartstroke, after a fright or over-exertion, or in the course of an otherwise not dangerous (mostly infectious) disease. In all these cases Graves's disease had been of very long standing, and had caused degenerative symptoms; however, after the operation the pure symptoms of Graves had disappeared. One case died from diabetes. Whether this is in connexion with the degenerative influence of the severe Graves's disease on the pancreas remains doubtful.

This leads to the question *which cases are suitable for operation?* If we could operate in all cases within a short time, say half a year after the outbreak of the disease, and the sooner the more acute the outbreak is, I dare say *all* might be *cured* by operation. A short rest with avoidance of all the things likely to cause progression of the disease, such as nervous strain and toxic influences, combined with more or less vegetarian diet and internal phosphorus preparations, is the proper preparation of these cases for operation. During this time a careful examination of the patient should be made, and this is *the chief point* to decide—whether an operation should be done or not in severe cases and of such long duration of the disease. Special attention must be paid to the heart, kidneys, liver, adrenals, pancreas, lymphatic organs (thymus, spleen, lymph glands), and to the blood. A constantly irregular pulse, a lasting notable amount of albuminuria, very frequent fatty stools, distinct and constant, not only alimentary, glycosuria, low blood pressure, marked status lymphaticus (especially the one without the otherwise characteristic lymphocytosis of the blood), a very high lymphocytosis of the blood, combined with very marked leucopenia, very slow coagulation of the blood—are facts that *forbid* an operation unless they can be brought to disappear under proper treatment during the time of preparation for the operation.

The operation itself consists either in the reduction of functional gland tissue by partial thyroidectomy or in the reduction of arterial supply by ligation of arteries. In early cases this will bring cure. In slightly enlarged, but very vascular glands, ligation of two or three arteries should be done; in larger glands hemi-thyroidectomy may be preferable. But one cannot fix any scheme, the most suitable operation for each case has to be decided upon individually. In severe cases of long duration the combined—that is to say, the consecutive use—of both operations is the method of choice. The ligation of the superior artery is best done from a small collar incision across the upper part of the lateral lobe, between omohyoid and sternocleido-mastoid, the upper pole of the gland is set free and the artery tied or cut between two ligatures. The effect seems to be better if ligation of the thyroidal veins is omitted. In partial thyroidectomy the larger lobe with the middle part and pyramidal process should be removed. This is done with Kocher's symmetrical collar incision across the middle of both lobes. After dividing the straight muscles above the entrance of the nerve branches, the gland is carefully detached under exact hæmostasis of all the numerous accessory veins passing from the capsule to the gland. It is an advantage if the superior and inferior artery can be tied soon. Special care is to be taken at the back, where the recurrent laryngeal nerve and the upper parathyroid gland are adjacent. The best plan is to leave a sheath of gland tissue behind. Next with regard to ligation of the inferior artery. The ligation of the inferior artery alone is as a rule a very difficult procedure, as it can only be done on the main branch, when the lateral lobe of the thyroid gland is lifted up. We do not therefore consider it the best method to be chosen, although it is the one lately chosen by most French surgeons. It has exceptionally to be done in cases where one lobe has been removed and the upper artery of the other tied. It is the same with the *partial removal or resection of the second lobe.* It is only exceptionally necessary and on account of the difficulty of hæmostasis not a safe procedure. The removal of one lobe and the partial removal of the other *in one operation* is a procedure which should not be undertaken. In early cases it is not necessary, in severe cases it is frequently the cause of death. We are sure that most of the cases lost after this operation could have been saved by consecutive operations performed at the necessary intervals.

All operation *can* and *should* be done under local anæsthesia. In early cases, where no symptoms of degeneration in the organs are present, general anæsthesia, ether and oxygen, can be given, but it has always two disadvantages: the recurrent laryngeal nerve cannot be spared with certainty, and the sickness after the operation, considering the slow coagulation of the blood, makes the healing slow, and has a bad general influence. The local anæsthesia is done by injections of ½ and 1 per cent. novocain solution with 2 drops of 1 per cent. adrenalin solution for 10 grammes of novocain. This is injected under the skin at the place of the incision, in the muscles where they are to be cut, and in the periglandular tissue, especially at the upper pole. It is important to calm the patient before the operation, not so much with drugs such as veronal, medinal, codein, and valerian, but more by mental influence. I can assure you that during the above mentioned preparatory rest cure in the house, which lasts from two to several weeks, we nearly always influence the patient so far that he is anxious to have the operation and fears it no more. After most operations, even if not the slightest irregularity, not to speak of complication, takes place, when no antiseptics and no general anæsthetic have been employed, the patient shows a very severe reaction; the more so, the more severe the case is. Rise of temperature and pulse-rate, irregularity of pulse, albuminuria, glycosuria, restlessness, sweating, and oppression are quite usual, and sometimes very alarming. We find this reaction sometimes even more severe after ligation than after partial removal. If antiseptics have been largely used, or if the wound has had to be packed with gauze, or general anæsthesia has been given, this reaction is much more severe. We have seen four times, in cases where we have had to give general anæsthesia because of the lack of self-control of the patient, this reaction go on for a period up to 24 hours, and ending in coma and death; and here the necropsy revealed fatty degeneration of the heart muscle, kidneys, and liver, with circumscribed necrosis, such as is found experimentally in the liver after chloroform death. Besides cases of death following the operation under general anæsthesia we lost 5 patients from pneumonia, 3 from nephritis (extensive fatty degeneration), 2 from embolism, and 4 who died, with the above-mentioned symptoms, very suddenly, and showed marked status lymphaticus, together with fatty degeneration at the necropsy. If you consider the cause of death in all these cases and compare with it what I said of the special attention that must be paid to the condition of the heart, liver, kidneys, adrenals, lymphatic organs, and blood, before operating, you may conclude that the majority of deaths could have been avoided. If we had omitted general anæsthetics in the four cases, if we had refused to operate on the three patients who had distinct signs of kidney degeneration before, and on the four patients who showed status lymphaticus in very marked degree, all these would have been spared, and our statistics showing 2·6 per cent. mortality from 865 operations would be only a little over 1 per cent.

Mr. President and Gentlemen, we come to the conclusion that early diagnosis of Graves's disease is *the* important task

of a medical man. If this is established an early operation should be performed by an experienced surgeon. After the operation treatment with rest, proper food, good air, especially mountain air, avoiding any nervous or toxic influence, will bring on radical cure in a fairly short time. Thus we shall not only avoid recurrence of the disease, but the patient will be spared from the toxic influence on his heart, kidneys, and liver, of which he will die sooner or later. The thyroid gland will resume its normal function, whilst, if the disease is progressive, it may come to such a point that the gland is no longer able to do so. In severe cases and in those of long duration a careful examination, according to our modern knowledge of the disease, must be made. Cases with distinct symptoms of functional degeneration cannot be operated upon without risk. Only surgeons who have great experience in the surgery of the neck, who are able to make complete hæmostasis, and who can guarantee complete asepsis, should operate in Graves's disease. A difference should be made between cases of goitre with symptoms of Graves's only, and the progressive full disease. The results of operative treatment in the first should not be published as results of operation in Graves's disease, without adding that they were rather cases of hyperthyroidism grafted on ordinary goitre.

Dr. DUDLEY BUXTON said that an important question was raised as to the relative advantages of local analgesia and general anæsthesia. He thought that Dr. Dunhill's objections to general anæsthesia were based on inadequate evidence, as he had had very small experience of general anæsthesia in these cases. It was important to know how the method was carried out, whether properly or improperly, and the results when quantities of anæsthetic were used which were adequate without being excessive. Local analgesia was certainly valuable, but whether it had the advantages claimed for it had yet to be shown. The after-sleep of general anæsthesia, he considered, was in its favour. He had employed chloroform for many years and quite agreed that it was more toxic than ether, but would only do harm when employed as a poison and not as an anæsthetic. If merely used to produce anæsthesia without overloading, no danger of post-operative poisoning from chloroform need be feared. A danger from asphyxia existed, but he had overcome that by giving oxygen *pari passu* with the chloroform, which he always administered by the dosimetric method. Nervous excitement and fright might be controlled by producing sleep before anæsthesia by a mixture of morphia, atropine, and scopolamine. Though he had employed chloroform he was ready to believe that the open ether method or venous infusion of ether were useful methods. In the latter, however, there was a danger of collapse when the unnatural stimulation of the ether passed off.

After Mr. H. J. PATERSON and Mr. JAMES BERRY had exhibited cases of Graves's disease which had been operated upon, the discussion was adjourned until March 5th.

PATHOLOGICAL SECTION.

A New Method of Mounting Museum Specimens.—Neuro-fibromatosis.—Multiple Embolic Aneurysms of the Pulmonary Artery.—Salvarsan Fever.

A MEETING of this section was held on Feb. 25th, Mr. S. G. SHATTOCK being in the chair.

Reference was made from the chair to the great loss which the section had recently sustained by the death of Lord Lister. A resolution, proposed by Mr. SHATTOCK and seconded by Dr. W. BULLOCH, expressing sympathy for the relatives was passed unanimously by the members standing. Subsequently the Chairman gave a brief *résumé* of the pathological researches which had led up to the late Lord Lister's work, and pointed out that aseptic surgery could only have been attained through antiseptic surgery.

Professor J. M. BEATTIE and Dr. ARTHUR HALL (Sheffield) showed a series of Mounted Specimens from the Pathological Department of the University of Sheffield to illustrate a new and inexpensive solution for the mounting of museum specimens. Specimens were fixed in the ordinary solutions (Kaiserling, Jores, or Pick), transferred to fresh methylated spirit until the colour was well developed, then directly to Frost's solution: sodium fluoride, 80 grammes; chloral hydrate, 80 grammes; potassium acetate, 160 grammes; cane sugar (Tate's cube), 3500 c.c.; saturated thymol water, 8000 c.c. In this they were permanently preserved. The advantages claimed for this method were: (1) It cost only one-tenth the amount of the glycerine solution; (2) it preserved more life-like colours; (3) the colour was not affected by exposure to sunlight or to extremes of hot or cold weather; and (4) the tissues continued to retain their power of taking ordinary histological stains.

Professor BEATTIE and Dr. HALL also showed specimens of Diffuse Neuro-fibromatosis. The patient was a girl aged 17 years. She had been curiously childish in manner, irritable, but easily pacified. She could not sit up in bed, showed general weakness and wasting, and was completely blind. There was marked swelling of both discs with dilated veins. She was almost completely deaf. Paralysis of the left sixth and seventh nerves occurred, and some difficulty was experienced in swallowing. There was marked wasting of the muscles of the hands. Tumours were present on arms, legs, and neck, evidently situated on the nerve trunks. There was one slight cutaneous nodule on the right side of the neck. The tumours were painless and not tender on handling. During her stay in hospital she became completely deaf, lost control of the sphincters, and (?) lost her taste. At the necropsy large numbers of tumours, varying in size from a pin's head to an orange, were found situated upon (1) the cranial nerves inside the skull; (2) the spinal nerves inside the dura mater and between the dura and bone; and (3) the peripheral nerves, particularly those of the brachial and lumbar plexuses. In the latter positions the largest tumours were found—one in the right lumbar plexus being of the size of an orange and having undergone marked degenerative changes. At the base of the brain the tumours were so closely packed together as to make it difficult to say to which cranial nerve each belonged. They had caused marked distortion of the medulla and pons. The olfactory nerves appeared to be alone unaffected. In the cord the tumours seemed more evident about the cervical and lumbar swellings and were very numerous in the cauda equina. Besides the actual tumours there was widespread irregular thickening of many nerve trunks. Microscopically the tumours consisted of simple fibrous tissue.

Professor BEATTIE and Dr. HALL also showed specimens from a case of Multiple Embolic Aneurysms of the Pulmonary Arteries. The patient, a man, aged 21 years, had thrombosis of the left leg in February, 1911, which seemed to recover completely in March. Shortly afterwards he had a shivering attack and blood-spitting. From this time onwards to his death in September he was more or less laid up with recurrent attacks of hæmoptysis, daily pyrexia, and occasional slight rigors. There were no loss of flesh, slight cough, and no pain. The only physical signs of disease in the chest were a small area of impaired resonance with harsh and jerky expiration, and occasional rhonchi situated in front, just below the right clavicle, and a smaller area about the second left interchondral space where fine crepitations were heard. Ultimately he was suddenly seized with profuse hæmoptysis and died within half an hour. At the necropsy both lungs were found to contain aneurysms of the pulmonary arterial branches. The largest was in the right upper lobe, extending from the anterior surface deeply towards the root of the lung. It corresponded in position with the site of the physical signs beneath the right clavicle, and measured 5 × 6 cm. across. The cavity was largely filled with organised laminated thrombus, near the centre of which a cavity containing recent liquid blood persisted. At the upper and deepest part this aneurysm had eroded into a bronchiole causing the fatal hæmoptysis. There were three or four smaller in size, some in the right and others in the left lung. Each was more or less completely filled with laminated organised thrombus.

Mr. EDWARD C. HORT and Dr. W. J. PENFOLD communicated a paper on Salvarsan Fever. Salvarsan fever was the latest addition to a large group of injection fevers. Other well-known members of this group were water fever, salt fever, sugar fever, ferment fever, protein fever, tissue fever, &c. In all of these the fever after injection had been attributed to the action of different pyrogenetic substances. Salvarsan fever, however, although at first looked upon as salt fever, had recently been attributed to gross bacterial infection of the solutions demonstrable before their sterilisation and injection. This theory was first advanced by Wechselmann and was later endorsed by McIntosh, Fildes, and Dearden as a result of independent observation. The theory

was mainly based on the discovery of large numbers of organisms in the solutions injected and on the experience that if saline made with pure water was used fever no longer occurred. The evidence, therefore, at first sight appeared to be complete. On testing it, however, by control experiments Mr. Hort and Dr. Penfold found that they could not produce fever by the injection of large numbers of dead organisms grown on water or on saline. They also found that injection of heated water or saline containing hardly any organisms may give rise to high fever owing to the presence of a heat-stable, filter-passing substance of small molecule. This substance might be of bacterial origin, but they had no absolute proof that this was so. If this body were present in sterile solutions containing salvarsan, fever followed injection; if salvarsan were injected in pure saline, fever did not follow injection. They found that water immediately after collection from the receiver of the ordinary closed metal still might be sterile and yet strongly pyrogenetic, and that water injected immediately after distillation in glass produced marked fall of temperature. This was also true of solutions of salt and salvarsan in this water. They suggested that the ordinary closed metal still when cooling aspirated organisms from the air through the joint with the worm, and that these were destroyed when the apparatus was again heated. It was possible that extraction of degradation products of bacterial protein then occurred, which would explain the pyrogenetic properties of sterile water. This water if allowed to stand in clean closed vessels became increasingly pyrogenetic, and injection of salt, salvarsan, and many other substances in such water was always followed by fever, which never occurred if pure water were the solvent. This toxic water was practically bacteria free, containing 40 organisms per c.c. If pure water, or saline made with it, were deliberately exposed to infection for some days, and were injected immediately after autoclaving, little or no fever resulted. If, however, an interval of days were allowed to elapse after autoclaving, and if injections were then made after a second heating, both the water and saline exhibited pyrogenetic properties. This also might be due to extraction of degradation products of bacterial protein. Mr. Hort and Dr. Penfold concluded therefore: (1) That there was no evidence to show that salvarsan fever was necessarily due to the injection of micro-organisms or of unbroken bacterial protein; (2) that the presence in the solutions of a heat-stable filtrable substance, which might be a degradation product of bacterial protein, was an important factor in the production of salvarsan fever; (3) that demonstration of the sterility of any watery solution of salvarsan was no guarantee that this pyrogenetic substance was not present; (4) that if water for the solutions was collected from the metal closed still autoclaving might be a distinct disadvantage; (5) that the only certain method of preventing salvarsan fever was (*a*) to use for the solutions only water that had been freshly distilled in glass and to inject immediately, or (*b*) if storage was desired the water must have been at once collected direct into sterile vessels, which were then hermetically sealed and autoclaved. Water treated in this way would not acquire pyrogenetic properties even after standing many weeks. Autoclaving after infection of the water had occurred was useless and probably dangerous.

SECTION FOR THE STUDY OF DISEASE IN CHILDREN.

Exhibition of Cases.

A MEETING of this section was held on Feb. 23rd, Dr. G. A. SUTHERLAND, the President, being in the chair.

The following cases were shown:—

Dr. R. HUTCHISON: 1. Paralysis of the Muscles of the Neck (? Poliomyelitis) in a boy, aged 2½ years, who was admitted to the London Hospital on Oct. 28th, 1911. Ten days before admission he had had a feverish attack, and both ears discharged. Weakness of the neck had been noticed since. He was in hospital six weeks before that for pneumonia. On admission he was no more able to hold up his head than a newly born baby. Paralysis seemed to involve both sterno-mastoids, both trapezii, and retrocollic muscles, and was more marked on the left side. No other muscles were affected. Radiogram of the spine was negative. On Feb. 6th, 1912, there was imperfect reaction of degeneration in the trapezii and sterno-mastoids. The other muscles could not be satisfactorily tested. The paralysis is much less marked than when the patient first came under observation. 2. Hysterical Vomiting, Achylia, in a girl aged 10 years. About two years ago the patient's mother died suddenly, and vomiting set in immediately after this event, and continued in spite of treatment in two hospitals until she came under observation three months ago. She was then much emaciated (weight 1½ st.); the skin was dry, brown, and scaly. There was no other visceral disease. The bowels were somewhat loose. A test meal showed complete achylia. Under treatment by isolation, suggestion, and the use of hydrochloric acid and pepsin the vomiting had entirely ceased, but the nutrition had not much improved.

Dr. J. H. THURSFIELD: Green Teeth, subsequent to prolonged jaundice in the first weeks of life. The patient, a boy, had been jaundiced from birth, or possibly from the third day of life only, and during the first week of life he had passed very black stools, and had a purulent discharge from the navel. When seen at the age of 3 weeks the umbilicus was perfectly healthy; the liver and spleen were not enlarged, and the child, though small—6 lb. 5 oz.—seemed quite healthy. The jaundice was deep at this time and remained so for the next seven weeks, slowly disappearing. When it had gone he put on weight rapidly. He was not seen again until 9 months old, when he was brought for an attack of diarrhœa. Then the two lower central incisors were a vivid yellow tint, and have now become green. The tint varies considerably; it is occasionally quite bright, and at other times dull.

Dr. F. LANGMEAD: Anomalous Jaundice, with Enlargement of Liver and Spleen, with Bile-stained Teeth. Jaundice began between two and three weeks after birth, and persisted until the baby was 1 year and 3 months old. When first seen, when the child was 3 weeks old, the liver was definitely enlarged, and the spleen reached nearly to the umbilicus. The child's general condition was good. There was nothing to suggest syphilis. Grey powder was administered, and the liver and spleen subsided rapidly, and were not enlarged after about one month's treatment. The jaundice persisted and was accompanied by hæmorrhage from the bowel, the stomach, and beneath the skin. The first tooth erupted when the baby was 1 year old, and four were visible when the jaundice disappeared at 15 months. All were bright yellow in colour, and obviously pigmented by bile. Since then each tooth as it has erupted has proved to be jaundiced. The yellow colour began to change about three months ago, and now the colour has almost gone.

Dr. JAMES TAYLOR: Athetoid Movements in a girl, aged 5½ years. She was the seventh child; the first two died a few hours after birth; the third, fourth, fifth, and sixth are alive and well. The child was born at full term; she was born "feet first," and was black and blue at birth. She had never walked or even crept. At the age of 2 years the movements of the head, hands, and feet were noticed. Now she spoke badly (she had never spoken well), but her intelligence was fair. She had involuntary movements of the hands, also of the head; the legs were stiff. The reflexes were difficult to obtain on account of the rigidity, but the knee-jerks were present.

Dr. LEONARD GUTHRIE: Transposition of the Viscera in a girl aged 12 years. The heart was on the right side, the apex being in the sixth space 1 inch inside and below the right nipple. Hepatic dulness was absent on the right side, but could be made out on the left side from the level of the sixth rib downwards. The stomach resonance was well defined in the right hypochondriac region. The position of the colon was not ascertained.

Dr. J. A. TORRENS: Case of Unusual Cardiac Bruit in a girl aged 16 years. There was no history of rheumatism and no history of any cardiac disability at any time. She was a well-nourished and well-developed girl. There was no cyanosis or clubbing of the fingers. The heart was not enlarged to percussion, but the X rays showed a globular left ventricle of greater density than normal, suggesting some pure hypertrophy. There was a loud systolic murmur at the base, best heard over the aortic area, conducted up into the arteries of the neck, but audible over the entire thorax, back and front. The second sound was quite distinct, but there was no diastolic murmur.—The murmur was considered by some speakers to be due to a congenital lesion, and by others to an acquired aortic stenosis.

Dr. T. R. C. WHIPHAM: Arthritis of the Shoulder and Hip

(? Tuberculous) in a boy 14 years of age. When 3 years old he was held up by the arms, and after that his right shoulder "grew out" and the arm could not be raised above the horizontal level. Wasting of the shoulder muscles followed, but nothing further was noticed until nine months ago, when he started walking lame on the left leg. There was pain in the left hip and knee at first, but this had subsided, and the patient had never been prevented from doing his work as a house-boy. The radiogram showed absorption of the head of the humerus and displacement of the shaft under the tip of the coracoid process. The shoulder-joint was ankylosed. There was considerable wasting of the muscles around the hip-joint, the movements of which were very limited. The femur was shortened, due to absorption of the head of the bone. Von Pirquet's reaction was negative.—The case was considered as most probably one of tuberculous arthritis.

Dr. WHIPHAM: Proliferative Osteo-arthritis of the Hip in a youth. A year ago, when 17 years old, he began to experience pain in the left groin when walking. This was only present when the joint was exercised. He walked with a limp, and the left leg was ½ in. to ¾ in. shorter than its fellow. The muscles around the joint were wasted, and the trochanter was prominent. The movements of the joint were restricted, and creaking was present. The skiagram showed osteo-arthritic changes in the joint.—The case was considered by some to be of an infective nature, and the state of his teeth was commented upon as being a possible cause.

MEDICAL SOCIETY OF LONDON.

Exhibition of Pathological Specimens.

A MEETING of this society was held on Feb. 26th, Dr. J. MITCHELL BRUCE, the President, being in the chair.

The following pathological specimens were exhibited:—

Dr. FREDERICK LANGMEAD: Calcification of the Pericardium and Primary Carcinoma of the Liver in the same case.

Mr. C. M. PAGE: A large Obturator Hernia.

Dr. J. GRAHAM FORBES: (1) Spheroidal-celled Carcinoma of the Appendix in a boy of 10; (2) Tumours of the Cervical Sympathetic Ganglion; and (3) Fibro-myxoma of the Nasopharynx.

Dr. ALEXANDER PAINE and Dr. F. J. POYNTON: Experimental Appendicitis by general blood infection.

Dr. HERBERT FRENCH: (1) Melanotic Growth of the Liver; (2) Traumatic Aneurysm of the Heart; and (3) Malignant Disease of the Kidney, with continuous growth extending along the vena cava to the tricuspid valves.

Mr. HERBERT TILLEY: Larynx of a man, aged 72, whose right vocal cord was removed for epithelioma in September, 1896, and who died 13 years after from another growth on the left vocal cord.

Dr. C. E. LAKIN: (1) Infective Endocarditis in an infant of 7 weeks; (2) Infective Endocarditis in a case of congenital heart disease; (3) Malignant Disease of the Suprarenal Glands; and (4) Perinephric Tumour in a child of 4 months.

Dr. R. C. JEWESBURY: (1 and 2) Cysts of Spleen; (3) Separate Growths in Œsophagus and Stomach in the same case; and (4) Liver—for diagnosis.

Dr. J. P. HEDLEY: Specimen from Cæsarean Section.

NORTH OF ENGLAND OBSTETRICAL AND GYNÆCOLOGICAL SOCIETY.

Exhibition of Specimens.—Pyocolpos.—Classification in Gynæcology.

A MEETING of this society was held on Feb. 16th, Dr. A. W. W. LEA, the President, being in the chair.

Professor H. BRIGGS showed: 1. Microphotograph and specimen of a Small Raised Ulcer, an early epithelioma, on the cervix of the procident uterus of a woman aged 63. On the procident cervix cancer is rare. 2. Two Ovarian Tumours, adenomata, solid, fused so completely that they formed one continuous ovoid 12 by 6 inches. The fusion must have occurred early; its cause was not yet explained. Ascites; no primary growth elsewhere; patient well after eight months. 3. A chain of Fibroids in each horn of a bicornuate uterus; the total bulk of the tumours was large and reached the umbilical level during life; both ovaries were apoplectic. There was a blood cyst in the great omentum; one broad ligament fibroid seemed to carry the corresponding ovary on its surface, and might have been classed as ovarian in origin except for its relation to the ovarian ligament and its own structure.

The PRESIDENT mentioned a case of Pyocolpos occurring in a girl aged 14½ years. This formed an abnormal swelling, reaching two inches above the pubes. The hymen was imperforate; per rectum it was obvious that the vagina was much distended. As the girl had suppuration in Bartholin's gland drainage was postponed until this healed. When the vaginal incision was made 12 ounces of muco-purulent fluid were evacuated. Infection had no doubt arisen from the bartholinitis. Recovery was uneventful.

Dr. A. DONALD showed the specimen and microscopic section from a case of Hæmorrhage from the Ovary. The clinical history was as follows. Married, aged 31; one child, born in March, 1909. Menstruation regular and health good. In November, 1911, sudden and severe collapse, with abdominal rigidity. Two days later retention of urine. On examination a mass of the size of a Jaffa orange was felt behind the uterus, rather on the left side. This condition persisted, and on Jan. 19th the abdomen was opened. Mass of blood-clot in pelvis, continuous with clot in left ovary. Specimen showed ovary size of Tangerine orange containing blood-clot, and there was also a separate blood-clot. Dr. W. F. Shaw, who furnished the pathological report, found cells which he regarded as lutein cells, but no certain evidence of ovarian pregnancy.

Dr. W. E. FOTHERGILL (Manchester) read a paper on Classification in Gynæcology, giving an account from the historical point of view of the various classifications of the diseases of women which had been used. It was shown that the anatomical arrangement now almost universally employed came into use about 40 years ago, while the first attempt to introduce the use of main groups based on pathology was made by Berry Hart in 1893. Dr. Fothergill considered that the anatomical system, while doubtless the best that could be used before the pathology of the diseases of women had been investigated, was not suited to modern needs. It interfered with the proper teaching and with the scientific description of the subject, and should be replaced, both in text-books and in courses of lectures, by a natural classification whose main divisions should be based on pathological features. Six main groups were suggested for use in such a system, as it was considered that the 10 or 11 divisions used by some authors were too numerous to be remembered easily by students.

EDINBURGH OBSTETRICAL SOCIETY.

Eclampsia.—Treatment of Contraction of the Pelvic Outlet.

A MEETING of this society was held on Feb. 14th, Dr. J. HAIG FERGUSON, the President, being in the chair.

Sir J. HALLIDAY CROOM communicated a paper on the Incidence of Eclampsia in the Edinburgh Royal Maternity Hospital, producing the statistics for a period of 22 years—first, with regard to its increase; secondly, with regard to its severity; thirdly, with regard to the mortality; and, lastly and specially, with regard to its seasonal incidence. He showed by numerous tables that there was a marked increase, especially during the last 13 years, and pointed out that it occurred less frequently in the country than in the town, and deduced the fact that the cause of the increase in cities was probably the alteration in the dietary. He further showed that the death-rate was distinctly diminishing, but that the severity remained unaltered. He explained this by a clearer knowledge of toxæmia and the patients being sent in earlier, and therefore more amenable to treatment. He also attributed the decreased mortality to improved methods of treatment which he discussed. With regard to the seasonal incidence, he compared the tables taken from many parts of Germany and from New York with his own, and found there was such a diversity of opinion on the subject, and the difference in the actual and relative months' occurrence so slight, that he was disposed to discard the seasonal influence in the causation of eclampsia, and endeavoured to prove that it was not a

question of seasons but the exposure of toxæmic patients to sudden changes of temperature at any time of the year, and he supported his opinion with numerous tables.—Dr. D. BERRY HART said that eclampsia was one of the diseases the more one read about it the less one knew, but there were theories. It must be remembered that there was a great deal of metabolism going on, and there was, perhaps, some disturbed chemistry varying in degree; also an accumulation of the toxin in the system until it reached a certain pitch, and perhaps aggravated by a change in the temperature. A very recent idea was that the woman might have eclampsia produced by a sudden change of temperature. The theory that the patient had previously diseased organs was difficult to prove.—Dr. JAMES RITCHIE referred to the fact that it might occur in a single pregnancy and not in any other pregnancy seemed to show clearly that it was due to something associated with that particular pregnancy. It must be explained by something in the uterus itself. He put forward a suggestion that it might be a micro-organism occurring in association with that particular pregnancy.—Dr. W. FORDYCE alluded to the statistics of the Edinburgh Maternity Hospital quoted by Sir Halliday Croom. The number of cases had increased and the death-rate had fallen. But the Maternity Hospital was not such a popular institution in 1889 as it was now, consequently only the desperate cases would be sent. Most men were now alive to the fact that the successful treatment of eclampsia could only be carried out in a hospital, and so there was an increased number of cases with a diminished death-rate.—Dr. G. KEPPIE PATERSON alluded to the possibility of some of the improvement in the death-rate being due to the general improvement in sanitation in the city. The mortality from infectious diseases had decreased in Edinburgh during the period under review. He had been an assistant many years ago in another city where there was a severe type of all infectious diseases—measles, diphtheria, and scarlet fever. While there within a year he saw several cases of albuminuria of pregnancy and of eclampsia. All the cases of albuminuria recognised and treated got well through the labour; all those where eclampsia set in during labour or where he had been called in for that condition died despite treatment, showing the severity of the type of eclampsia met with there. It was hardly fair to compare the statistics of other cities with those of Edinburgh; the climatic conditions were very different, and the state of sanitation in some continental cities was very deficient. The mortality from eclampsia in other cities might well be compared also with the death-rate in infectious diseases.—Dr. H. OLIPHANT NICHOLSON referred to the striking difference between the diet of town and country patients. If it was admitted that meat diet had anything to do with the disease, it was probable that there must be some defect in the proteid metabolism of the body; and that brought in the question whether some of the internal secretions, such as the thyroid, were functioning properly. In exophthalmic goitre, where there was an excess of thyroid secretion, one probably never got eclampsia. Persons with tubercle had also an excess of thyroid secretion, and so far as his experience went they never had eclampsia. The thyroid secretion had been shown to have some very important antitoxic effects.—Dr. J. LAMOND LACKIE mentioned two most interesting years in Paris. The climatic conditions were exactly the same, yet in the first year there was a very small number of eclamptic cases; in the second there were ten times the number. The cause was unexplainable. As regards the diet, he did not find that eclampsia was less frequent amongst the rich than amongst the poor; there was the same proportion of cases. The constitution of the patient and the climate seemed to be of no account at all. It seemed to him that diet had some effect, but how it acted he did not know.—The PRESIDENT referred to the statistics showing that in Edinburgh 1 in 35 of the cases was eclamptic, and 1 in 250 in other cities, but that was due to Edinburgh having such a large proportion of abnormal cases sent to the Maternity Hospital; other maternities had a far larger proportion of normal cases. He had experience of a home which admitted only primiparæ and for some time before confinement, and there no eclampsia had occurred. These patients had not a highly nitrogenous diet and were kept mostly in the house, and thus not exposed to climatic changes. A point of interest difficult to explain was that eclampsia occurred more frequently in plural births.—Sir HALLIDAY CROOM replied.

Dr. JAMES YOUNG read a paper on the Treatment of Contraction of the Pelvic Outlet, giving details of two cases—one treated by pubiotomy and the other by induction. He said: In this country contraction of the pelvic outlet has not received much attention. This is shown by the fact that in text-books and in discussions at medical societies, treatment of contracted pelves is almost always considered in terms of the diameters of the inlet. There are two types of contracted outlet: (1) where the condition is superimposed on a generally contracted or justo-minor state; and (2) where the contraction is limited to the outlet. This latter constitutes the funnel pelvis which is by far the more common of the two. It is probably due to an assimilation of the last lumbar and first sacral vertebræ. Where the distance between the tuberosities is reduced to 3½ inches, the posterior sagittal diameter should always be measured. This is done by placing a pencil across the outlet at the region of the bis-ischial diameter and then measuring between the centre of this and the tip of the sacrum. One centimetre subtracted from this gives the posterior sagittal diameter. The treatment of contracted outlet by induction is only approximately scientific, because there is no method, such as that available for brim contractions, of determining the relative sizes of the fœtal head and of the pelvis, and thus of deciding the most suitable time for interference. Pubiotomy possesses two great advantages—it enables the obstetrician to await the test of labour and it results in a permanent enlargement of the outlet. There is also a slight increase in the brim measurements in some cases, but this is too indefinite to increase the value of the operation for brim abnormalities. In the case of the outlet, on the other hand, it may transform a contracted into a normal pelvis with subsequent spontaneous deliveries. The disadvantage of pubiotomy (as also of Cæsarean section in favourable cases), as compared with induction, is that taken all over the maternal mortality of the former is 2 to 3 per cent., whilst in the latter it is practically *nil*. As the mother's interests must dominate the issue, induction is preferable in the average case. If pubiotomy or Cæsarean section is decided upon it must only be where there is expert skill at hand and where the woman has consented to the additional risks. First case: The patient was 28 years old, with a bis-ischial diameter of 3¼ inches and a posterior sagittal diameter of 2½ inches; other diameters were normal. The first labour was ended with craniotomy; the second labour was induced at the thirty-sixth week, and ended with difficulty by forceps, the child being born dead. Her third labour was ended by pubiotomy, with an easy birth and a living child of 8½ lb. weight. Convalescence good; a slight limp was present for two months. X ray photograph six weeks afterwards showed the union to be mainly fibrous. Second case: Bis-ischial diameter was 2¾ inches, and posterior sagittal diameter 3½ inches; other diameters normal. Induction of labour carried out at the thirty-seventh week by bougie; some delay of head in the pelvis. Child healthy, and 6 lb. in weight. Mother's recovery normal.—Sir HALLIDAY CROOM was against pubiotomy as an operation of choice. Pubiotomy should be the complement of forceps. Cæsarean section was better, and pubiotomy should only be done if Cæsarean section was refused.—Dr. LACKIE instanced a case of pubiotomy he had done for contraction of the brim. The operation was very simple and very easy; it only occupied 17 minutes till the child was delivered.—Dr. HART, Dr. FORDYCE, Dr. NICHOLSON, and the PRESIDENT made remarks on the paper, and Dr. YOUNG replied.

ROYAL ACADEMY OF MEDICINE IN IRELAND.

SECTION OF SURGERY.

Exhibition of Cases and Specimens.

A MEETING of this section was held on Feb. 2nd, Mr. R. H. WOODS, the President, being in the chair.

Dr. J. BOYD BARRETT exhibited photographs showing marked Asymmetry in the Face of a child. The lower jaw came over towards the right to the extent of two incisor teeth. There was neither wry-neck nor atrophy. Slight asymmetry was to be seen in the face of the mother. In reply to a question he said he could see no change in the

teeth corresponding to the change in the bones, the only difference being that the jaw had gone over to the extent of two incisor teeth, and, therefore, mastication had been somewhat difficult.

Dr. WALTER STEVENSON showed two cases of Congenital Dislocation of the Hip treated by Lorenz's Method. The first was in a little girl, aged 3, who had been in hospital for eight months. Skiagrams were exhibited showing the position when treatment commenced and at various periods during the progress of the case. The final X-ray photograph showed the acetabulum to be fairly well arched. The leg was still held a little in advance and abducted, but this was gradually improving. The patient could now get about very well. Treatment extended over 14 months. The second case was that of a boy aged 3 in whom the right hip was affected, which was more rarely met with. Treatment was continued for six months. Skiagrams were exhibited showing the progress of the treatment. Examination showed that the joint was now in good position.

Mr. W. S. HAUGHTON exhibited four skiagrams showing the progress of a case of Congenital Dislocation of the Hip, treated by Lorenz's method, in a child, aged 3 years, who was under treatment for more than 12 months. The first demonstrated the position of the bone at the commencement of treatment; the second the position when halfway through, with the thigh bone brought down to an angle below the horizontal, and the acetabulum more arched and bony; in the third a further extension of the arch of the acetabulum was to be seen; the fourth demonstrated the acetabulum in a still more forward position, with further ossification at the head of the femur. He said that the results demonstrated that Lorenz's method was safe and satisfactory, but as it had to be done with a considerable amount of strain it should be performed by those in the habit of dealing with bone cases.—The PRESIDENT said that the photographs showed clearly the process that took place in the growth of the acetabulum. It was clear that the method was scientific.—Mr. W. PEARSON also discussed the cases. Mr. STEVENSON, in reply, said that since April, 1910, he had come across seven cases, and in one case of double congenital dislocation the patient was 22 years of age. Very few cases were diagnosed before the patients commenced to walk, but the sooner treatment was undertaken the easier it would be to get the head of the femur into the acetabulum, and the bones were more likely to develop into better shape. Tenotomy was necessary in any cases that he had seen. The interval between the stages was guided by the X ray skiagrams.

Mr. W. I. DE C. WHEELER exhibited two cases operated on for Aneurysm in the region of the Cœliac Axis. One patient was back at work 15 months after operation; the second was operated on six months ago. Colt's instrument was used in both instances, a cage of 150 inches of gilded wire being introduced in the first, and a wisp of 105 inches in the second case.[1] The prominent symptoms before operation were intense pain in the back, marked epigastric pulsation, and digestive disturbances. A systolic murmur could easily be detected over the tumour. Mr. Wheeler considered that the pain in the back was more likely due to the stretching and heaving of the peritoneum of the posterior abdominal wall than to erosion of the vertebræ. This was borne out by a post-mortem examination on a third case. In each of the cases operated on by Mr. Wheeler the pulsation and the pain in the back became more violent for a few days after operation, then rapidly improved, the pain completely disappearing. Mr. Wheeler urged the necessity of rigid aseptic precautions, the technique for ordinary operative work being insufficient when a large quantity of metal was to be buried in the interior of a very diseased artery. These were the first cases shown in Dublin after operation for abdominal aneurysm.—The PRESIDENT, Mr. PEARSON, and Mr. A. J. MCA. BLAYNEY discussed the case.—Mr. WHEELER, in reply, agreed with Mr. Pearson that if fusiform aneurysm were wired death must follow. He would not like to say that his cases were cured, but in the first case a very fair result had been shown, while in the second there was less murmur, and all pain in the back had gone.

In the absence of Mr. W. TAYLOR, Mr. STOKES showed a case of Sacro-coccygeal Tumour, present at birth. When tapped a gap in the sacrum could be felt, through which the abdominal contents protruded. The fluid removed contained a large quantity of albumin and a trace of sugar.

Mr. BARRETT showed a child suffering from Talipes Calcaneo-valgus, one of the rarest forms of talipes, but the simplest form to treat.

Mr. WHEELER showed a case illustrative of the success of Operative Interference in cases of Hyperthyroidism. The patient had been treated for over three years by medicinal means without any improvement. She had marked tremors and tachycardia, her pulse-rate averaging 120. The blood count showed marked lymphocytosis and a leukæmia of the neutrophilic polymorphonuclear cells. She had lost weight and become intensely excitable and nervous. One lobe of the thyroid was removed. Free drainage after operation and administration of large quantities of saline per rectum were relied on to prevent a further poisonous dose of the secretion. None of the contraindications to thyroidectomy for Graves's disease were present. The symptoms were intensified for the first few days after operation, after which the patient made an uneventful recovery.

[1] THE LANCET, Sept. 19th, 1903, p. 808.

SECTION OF MEDICINE.

Insanity in Ireland.—Clinical Estimation of Blood Pressure.

A MEETING of this section was held on Feb. 9th.

Dr. W. R DAWSON read a paper on Insanity in Relation to some other Circumstances of Life in Ireland. In England and Wales mental affections were found to predominate together with pauperism in the rural districts, while alcoholism prevailed in the mining and manufacturing counties, there being no constant connexion between insanity and alcohol. In Ireland the distribution of insanity was found to follow a similar rule, though the differences were not so marked. The geographical incidence of insanity showed no relation to density of population, but corresponded to a considerable extent with that of pauperism, and to a less degree with the rateable value of land. It bore little, if any, relation to the emigration-rate, and none at all to the death-rate, either general or tuberculous. There seemed to be some slight correspondence between insanity and criminality as regarded their distribution in Ireland, but practically none between insanity and drunkenness; and in general it appeared that alcohol was of comparatively small importance as a cause of insanity in Ireland. The incidence of pauperism in that country bore little relation to that of poverty. Criminality prevailed in the large towns, as in England and Wales, while, on the contrary, drunkenness was in greater excess in the rural districts, in contra-distinction to conditions across the Channel.—The paper was discussed by Dr. T. G. MOORHEAD, Dr. H. C DRURY, and Sir W. J. THOMPSON (the Registrar-General)

Dr. G. E. NESBITT, in a paper on Clinical Estimations of Blood Pressure, said that instruments in use at present fell into two groups: 1. Those dependent on the application of a pad to an individual artery. These could not be regarded seriously as scientific instruments owing to the number of fallacies involved. 2. Those on which the pressure was estimated by an armlet surrounding the limb—e.g., the Riva-Rocci apparatus and its modifications. Though the possibilities of error with these instruments also were numerous, most of them could be guarded against, especially by the use of the auditory and visual methods introduced by Oliver. How much thickening and hardening of the vessels interfered with a correct reading of pressure was debatable. It might introduce a very serious fallacy. The estimation of diastolic pressure by methods based on the maximum of oscillation of the index was untrustworthy and practically impossible. Attention should also be paid to disturbing factors in the patient apart from disease—i.e., the fluctuation of pressure in connexion with the various functions and habits of life was considerable, amounting, according to some authors, to a daily variation of 100 mm. Hg. Errors of deduction must be guarded against. For example, low reading of blood pressure did not always mean freedom from vascular disease, and *vice versâ*. Though the method was often of service it must not supplant careful physical examination.—Professor THOMPSON said that many of the points referred to had been corroborated by experiments conducted in his own laboratory. In the hands of one who had not paid special attention to a particular

instrument the observation could not be of much use.—Dr. MOORHEAD said that he could not determine with his fingers whether blood pressure was high or not, and therefore, if an instrument could do this better than the finger it deserved its place in clinical work. He agreed that if arterial sclerosis co-existed in a material degree with a low blood pressure it proved that sclerosed vessels could not require a great compression force to collapse them. If they did, all cases of sclerosis should have a high blood pressure.—Dr. J. SPENCER SHEILL had observed that a rise in blood pressure was one of the earliest signs of the onset of eclampsia.—Dr. DAWSON said that in his experience there was invariably a rise in blood pressure in cases of melancholia and mental stupor, but that the fall that was supposed to take place in cases of mental excitement was not so constant.

LIVERPOOL MEDICAL INSTITUTION.—A meeting of this society was held on Feb. 15th, Dr. C. J. Macalister, Vice-President, being in the chair.—The following specimens were shown:—Mr. G. C. E. Simpson: (1) Lymphadenomatous Glands; and (2) a series of Appendices with Concretions.—Dr. Nathan Raw: (1) Primary Tuberculous Glands in the Neck with Extension to the Lungs; (2) Aneurysm of Aorta with rupture into the bronchus; (3) Tuberculosis of Body of the Uterus; (4) Tuberculosis of the Heart; and (5) Melanotic Sarcoma of the Dura Mater.—Mr. Arthur Evans: Gangrenous Ovarian Cyst.—Mr. W. Thelwall Thomas and Dr. Nuttall: (1) Chondro-sarcoma of the Breast; (2) Pylorus after Pylorectomy; (3) Mucocele of Appendix (two specimens); and (4) Cyst of Mesentery.—Mr. K. W. Monsarrat: (1) Sarcoma of the Thyroid; (2) Papilliferous Carcinoma of the Kidney; and (3) Fracture of the Skull and Brain Injury from a Revolver Bullet.—Dr. W. Blair Bell: (1) Exfoliation of Endometrium during Menstruation (lantern slides); (2) Bilateral Carcinomatous Sarcoma of the Ovary (lantern slides); and (3) Rhabdo-myosarcoma of the Uterus (lantern slides).—Mr. F. T. Paul discussed the specimens and gave instances of cases of pylorectomy similar to that shown by Mr. Thomas; also of mucoceles of the appendix. He did not think Mr. Monsarrat's case was one of sarcoma of the thyroid. He had seen many cases like it, and felt sure that the sarcomatous appearance was merely due to active proliferation of the normal cells. He agreed with Dr. Blair Bell that the bilateral solid tumours of the ovary shown by him could only be described as carcinomatous sarcomata.—Dr. R. E. Harcourt gave an account of the original tumours removed in the case described by Dr. Raw as "melanotic sarcoma of the dura mater." The histological structure of the primary growth, which originated in connexion with the optic nerve, was gliomatous in character.—Dr. Macalister spoke of the extreme rarity of tuberculosis of the heart.—Mr. R. E. Kelly read a note on the Pathology of Torsion of the Spermatic Cord, and showed an illustrative specimen. He stated that the usual form of so-called torsion of the testicle was not a complete twist of the whole organ with its covering of tunica vaginalis, but only torsion of the mesorchium. In these circumstances the latter structure, instead of consisting of a sessile attachment of the epididymis to the parietal layer of the tunica vaginalis, was found to remain in its primitive pedunculated condition; consequently the whole of the twist was limited to the pedicle inside this serous envelope. The specimen shown was obtained from a boy aged 19. The patient was lifting a heavy weight, when he felt something "give" in his groin, and he noticed for the first time a lump over the external abdominal ring. He stated that previously to the accident he had a perfectly descended testicle. Pain was never a prominent feature, and he did not come into the Royal Infirmary until six days later, when the lump, which proved to be a twisted testicle, was removed.—Mr. Thelwall Thomas mentioned two similar cases he had met with. In one of these frequent fainting attacks led to the discovery of the condition. He agreed that pain was not a marked symptom in most cases.—Mr. Simpson and Mr. Paul also recorded cases with which they had met.

OXFORD MEDICAL SOCIETY.—A meeting of this society was held on Feb. 16th at the Radcliffe Infirmary, Mr. Dodds-Parker, Vice-President, being in the chair.—Mr. E. C. Bevers showed a case of Facio-hypoglossal Anastomosis 19 months after operation. The details and difficulties of the operation were described in general. When at rest no paralysis could be detected, and a few movements could be made voluntarily. A good reaction was produced on faradaic stimulation.—Dr. Mallam showed a case of Ulcerative Colitis in a woman aged 35. Various drugs and a variety of medicaments used in lavage had no effect on the condition. Her weight varied for a long time just over 5 st. An organism isolated from the stools was not agglutinated by the blood serum, so vaccine-therapy was not tried. Appendicostomy was performed by Mr. Dodds-Parker. The patient weighed at the present time 6 st. 12½ lb., was much improved in general condition, and greatly so in the matter of her dysentery.—Mr. Dodds-Parker described the details of the operation.—Mr. Counsell related the history of a case of Liver Abscess in a young man. It began with slight gastric disturbance, pain and temperature developing into a typhoid condition, with frequent rigors. Widal's reaction to B. typhosus, B. paratyphosus (B), and B. coli was negative, and a blood culture was negative. An exploratory operation was performed because no improvement was being made, and because of a suspicious tenderness about the umbilicus, but no trace was found of gross lesion in any organ. The rigors ceased after the operation, but marked anæmia set in, and before death a slight pleurisy, which on puncture of the pleura yielded no fluid. The liver and spleen were continuously large, but no deformation of the former was noticed at any time. At the necropsy the liver was found to contain a large abscess in the centre of the right lobe and a smaller one in the left lobe. Streptococci were found in the pus and in the section of the wall of the abscess. The bowel was normal, and no site of infection was found.—Dr. Tyrrell Brooks read the notes of a case of Malignant Endocarditis which had been in the Radcliffe Infirmary. His symptoms at first were anæmia and a splenic enlargement; subsequently a murmur in the heart was found which altered slightly, and an aneurysm was discovered in the left iliac artery. A blood culture was made and a streptococcus found which could not be got to grow. A vaccine from another strain of streptococcus produced great improvement in the symptoms, and a considerable lessening of the anæmia. Death occurred after a few days of severe dyspnœa, and at the necropsy was found to be due to miliary tuberculosis—an ulcer in the thoracic duct from an old gland being found. The aortic valve had a plentiful crop of vegetations, the kidneys were of the flea-bitten type, and the spleen, which was very large, had an enormous infarct in it. Most of the organs showed miliary tubercles.

CHELSEA CLINICAL SOCIETY.—A meeting of this society was held on Feb. 20th, Dr. J. A. Mansell Moullin, the President, being in the chair.—Dr. T. B. Hyslop read a paper on the Intracranial Mechanism in Health and Disease. He contended that the nervous system was a mechanism or instrument which served as a transmitter, and not as a generator, of mechanical force. Quantitatively considered, the sum total of the intracranial contents, both in health and disease, was constant and invariable. Variations were possible only in the relative proportions of the component elements or contents. The deductions derived from the data of comparative anatomy, embryology, pathology, and experiment, as concerned with the structure and growth of the brain and skull, were discussed, and an experimental demonstration of the real nature of the intracranial mechanism, by which the balance of the intracranial contents was maintained, was given. The modes in which defects in the working of this mechanism impaired nutrition and function were discussed, and an account was given of the mechanism of the arterial, capillary, venous, and lymph systems in their several relations to disease. The sum total of the intracranial contents being thus constant, the variations in the relative proportions of these contents might be expressed (approximately) in mathematical formulæ. It became possible also to express in mathematical terms the conditions affecting the balance between internal and external relations and the various relationships between assimilation and dissimilation essential to the maintenance of intracranial equilibrium. In connexion with the structure and mechanism of nerve units, exception was taken to the "neuron theory," and evidence, as deduced from studies of the nerve elements in their several relationships, both phylogenetic and ontogenetic, as well as from anatomy, physiology, pathology, and experimentation, was given in support of a "trophon theory." The following points were submitted for discussion: 1. How far was the brain a transmitter, transformer, or generator of

energy? 2. Phylogenetically considered, was the medullary canal of man primarily alimentary in function; and, if so, did the change in function sufficiently account for the change in structure? 3. Was the sum total of the intracranial contents constant? and, if so, were they warranted in expressing conditions of "give and take" between the intracranial contents in health and disease in (approximate) mathematical formulæ? 4. What was the real nature of the cytoplasm (both nerve fibre and cell) as evidenced by variations in its structure and function? 5. Trophon *v.* neuron.—Dr. Leonard Hill and Dr. Claye Shaw took part in the discussion.

GLASGOW OBSTETRICAL AND GYNÆCOLOGICAL SOCIETY.—A meeting of this society was held on Jan. 24th, Dr. A. W. Russell, the President, being in the chair.—Professor Munro Kerr read notes on: 1. A case of Intestinal Obstruction Complicating Pregnancy; operation at the seventh month without disturbing pregnancy. 2. A case of Advanced Extra-uterine Pregnancy in which the fœtus was free in the peritoneal cavity. In the first case the cause of the obstruction was a fibrous band in a large ventral hernia at the site of an old appendectomy scar. It was removed without disturbing pregnancy. In the second case the fœtus was free in the peritoneal cavity, where it must have developed. There was no trace of membranes.—Dr. Shannon read a paper on Some Observations on Concealed Accidental Hæmorrhage, with remarks on a case. The uterus showed small incomplete ruptures. There were several tears on the peritoneal surface, one of which, situated just above the bladder, was several inches in length. The mucous layer was intact. He was of opinion that the effusion of blood caused acute dilatation of the uterus and rupture followed. Death was caused by shock and not by the amount of blood lost. He performed Cæsarean section and hysterectomy, having previously ruptured the membranes to relieve the tension.—Mr. Duff read a paper on Successful Removal of a large Retro-peritoneal Sarcoma, with notes on the method of treatment. The tumour, which was of large size, was adherent to the greater curvature of the stomach and the transverse colon. About 7 inches of the peritoneal and the superficial layers of the colon were stripped in removing the tumour. This was covered with an omental graft. This method of using omental grafts he strongly recommended. There was a good recovery.—Fresh specimens were shown by the President, Professor Kerr, Dr. Stark, Dr. Marshall, Dr. Macfarlane, Dr. Ritchie, and Dr. Shannon.

Reviews and Notices of Books.

Handbuch der Hygiene. Herausgegeben von Professor Dr. M. RUBNER, Geh. Medizinalrat, Berlin; Prof. Dr. M. von GRUBER, Obermedizinalrat, München; und Prof. Dr. M. FICKER, Berlin. I. Band. Pp. 788. Price, paper, 27 marks; bound, 30 marks. II. Band, 2. Abteilung. *Wasser und Abwasser.* Pp. 410, with 111 illustrations and 3 coloured plates. Price, paper, 15 marks; halbfranz, 18 marks. Leipzig: S. Hirzel. 1911.

WE have recently received two volumes of this important work, which consists of contributions from numerous authors in the form of a series of articles on various branches of hygiene.

In Volume I., which relates to general hygiene, food, air, clothing, and soil, an introduction by Professor von Gruber supplies an interesting and philosophical discussion on the position which hygiene should occupy in relation to the well-being of the race considered from the widest point of view. Amongst some of the views which meet with criticism is the common one that by the prevention of disease a number of valueless lives are saved with a consequent depreciation of the average quality of the race. The view held by a certain school of sociologists, that "nurture" exerts only a minimum influence upon the nature of the individual, and that the efforts of hygiene towards the improvement of the body (soma) in contradistinction to the germ-plasm are almost valueless, is also criticised. In the opinion of the author hygiene has too long confined its attention to the welfare of the individual. He insists that the decisive criterion of the well-being of a race is the production of a numerous and healthy posterity, and that "hygiene" which fails to secure this has attained only a partial success. He considers, in fact, that the conscious regulation of propagation is a necessary link in the rational conduct of human affairs.

A short History of the Development of Hygiene from the earliest times is contributed by Professor Rubner. The lines along which this development has proceeded in different countries are traced, and a brief account of the growth of bacteriology and parasitology is given. The same author is responsible for a chapter on Metabolism and Energy Exchange, in which are discussed the chemical constitution of foodstuffs and their value for the purposes of nutrition and the supply of energy to the body. The methods employed in the investigation of problems of metabolism are clearly explained, and various questions, such as vegetarianism, minimum protein requirements, and the amount of food necessary for the proper maintenance of health, receive consideration.

Professor J. Mayrhofer contributes an article on Food and Food Adjuncts. In the section devoted to meat the subject of food poisoning is discussed, and useful references to work done on this subject are given. Mention is made also of the various methods used in preserving meat, eggs, and other foodstuffs. In this connexion it is interesting to find that Appert, who introduced the process of canning foods, attributed its preservative effect merely to the exclusion of air, a view which is still held by some packers at the present day. Milk and its preparations are also dealt with, and references are given to work which has been done on the enzymes of milk. In the section devoted to cereals the bleaching of flour receives attention. No mention is made of the addition to flour of the chemical substances euphemistically known in this country as "improvers," whence it may be hoped that they have not found their way into Germany. No account appears to be given of self-raising flour or of baking powders; although the practice of home-baking is universal in Germany the methods employed in the preparation and packing of baking-powder are inferior to those adopted in this country. Butter, margarine, and other foodstuffs, including condiments and stimulants, are also dealt with, and methods are given for detecting foreign substances with which they may have been adulterated.

Professor Lode contributes an article on the Atmosphere, in which the constituents of air are described, their physiological actions discussed, and, in the case of the more important constituents, methods are given for their estimation. Dust and other impurities receive attention, and the question of the toxic qualities of expired air is also fully dealt with. A useful section is devoted to the effect of compressed air on workers exposed to it, though it hardly brings out sufficiently the views which have been held concerning the relative advantages of gradual decompression and decompression by stages.

Professor Prausnitz contributes an article on the Effect of Soil upon Health, and gives an account of the methods that have been employed in researches upon soil and the results that have been obtained. Two articles by Professor Rubner describe the Hygiene of Warmth and Clothing. The correct fitting of boots is discussed in one of these articles as well as in an article by Professor Hueppe on Physical Exercises, in which the various systems of physical culture and their effect on health are considered. The volume concludes with an article by Professor Lode on Climate and its Effect on Health; an account of mountain sickness, the effect of climate on metabolism, and a discussion on acclimatisation are included in this section.

The subjects dealt with in the second of the volumes

(Vol. II., Band 2) are Water-supply, by Dr. O. Spitta; Sewage Disposal, by Dr. Schmidtmann, Dr. K. Thumm, and Dr. C. Reichle; and the Biology of Water and Sewage, by Dr. R. Kolkwitz. Germany for many years was far behind Great Britain in the provision of public water services and in precautions to secure purity of water. Much has been done in recent years, however, and in an introductory chapter on the History of Water-supply in Germany Dr. Spitta refers to the great stimulus given to the scientific study of the subject by the Hamburg cholera epidemic of 1892, which was fully investigated and described in the columns of THE LANCET,[1] the typhoid outbreak at Gelsenkirchen in 1901, and other epidemics which were traced to contaminated water. Fifty years ago there were only six important town water-supplies, whereas in 1903 the Imperial Board of Health was able to state that only 4 per cent. of towns with 15,000 inhabitants and over were still dependent on private wells.

An interesting chapter on the diseases due directly or indirectly to water is followed by detailed consideration of the various Natural Sources of Supply. Much space is given to the characteristics of ground water, a circumstance explained by the fact that about half the population and more than half the cities of Germany derive their supplies from this source. Dr. Spitta describes how the difficulties frequently arising from the presence of iron and manganese have been gradually overcome.

Under the head of Filtration, prominence is given to Kruse's view that the efficiency of the sand filter does not depend on the formation of a surface skin, but rather on the general sliming of the body of the filter. To obtain a satisfactory filtrate the maintenance of a constant pressure is regarded as most important, and for that reason mechanical filters are recommended only where there is no serious pollution of the raw water. The ozone method of sterilising water is favourably described. The practical difficulties which stand in the way of utilising ultra-violet rays are also made clear. The author is apparently unaware of Houston's work on the purifying effect of simple storage on Thames water. The classical memorandum of the Imperial Board of Health on the "Purification of Surface Water by Sand Filtration," is reproduced, and a short bibliography is given at the end of each chapter.

The section dealing with Sewage Disposal opens with an account of the development and present position of the sewage question. As in England, so in Germany, the state of the law in regard to the pollution of rivers is unsatisfactory. There is no central executive authority, but by judicious cöperation between the Imperial Health Council and the executives of the several States considerable progress has been made during the last decennium. In Prussia, pending the passage into law of a General Water Bill which has been in draft since 1907, the position is governed generally by an Order of 1901, which lays down the lines on which local authorities should take action for the prevention of water-borne disease, pollution of public supplies and nuisance to the public, and also for the protection of fisheries. A special account is given of the excellent work that has been done at the Prussian water and sewage experimental station under Dr. Schmidtmann. The standard in regard to sewage effluents has been considerably relaxed in recent years, and is now made to depend on local circumstances. Chapters follow on the composition of raw and filtered sewage, methods of domestic excrement disposal, and there is given a very complete summary of modern methods of sewage treatment, both "natural" and "artificial."

The common German practice of placing soil-pipes against inside walls, which we should consider objectionable in this country, is no doubt to be explained in large measure by the difference of climate. Disconnecting traps are rarely used and are not recommended. Drains are laid in cement only where they are subjected to much pressure. Joints are sometimes made with an asphalt mixture which is said to combine pliability with the merit of being gas-tight and water-tight. Of systems of sewerage a modified separate system appears to find greatest favour. Various forms of screens are figured and described, as is also Imhoff's ingenious sedimentation tank in use at Ems. Detailed reference is made to Stenernagel's experiments on sedimentation at Cologne, and also to Uhlfelder and Tillmans's investigations at Frankfurt a. Main. Dunbar's work on the processes underlying biological purification finds due recognition, but in the chapter on sludge disposal mention might have been made of Grossmann's experiments at Oldham.

As a whole, this section has been well prepared, and its value is considerably enhanced by the addition of a well-selected list of references to the literature of the subject.

[1] THE LANCET, July 7th (p. 46) and August 25th (p. 457), 1894.

The Control and Eradication of Tuberculosis. A Series of International Studies by Many Authors. Edited by HALLIDAY G. SUTHERLAND, M.D. Edin., Medical Officer to the St. Marylebone Anti-Tuberculosis Dispensary. Edinburgh and London: William Green and Sons. 1911. Pp. 451. Price 15*s*.

THIS volume contains a number of articles dealing with the control and prevention of tuberculosis. It is dedicated to Dr. R. W. Philip, and an open letter to him, and signed "Your Pupils among the Contributors," commences with the passage: "In asking you to accept this work on the Control and Eradication of Tuberculosis we do so not only as a tribute to the pioneer in this field of medicine, but also in the hope that these studies, bearing the impress of your teaching, and contributed by writers of many nations, may advance the movement in this and in other lands." These words sufficiently indicate the nature and scope of the work.

An interesting account of the principles and methods of the Edinburgh system is given by Dr. W. Leslie Lyall, assistant physician to the Royal Victoria Hospital for Consumption, Edinburgh. The fundamental principle of this scheme is that, not content with treating the individual patient who presents himself, the disease should be sought out in its haunts.[1] This is, of course, a sound contention, but it requires an elaborate organisation to carry it into effect. Dr. Lyall explains the details of such an organisation—namely: 1. The dispensary, where patients are advised as to treatment and instructed in such points as the disposal of sputum, necessity for windows being kept constantly open, sleeping arrangements, and segregation in so far as it can be carried out under his own domestic conditions. The duties of the nurses attached to the dispensary are duly described. 2. The sanatorium—the Royal Victoria Hospital—the buildings being in accordance with the latest and most modern style of sanatorium architecture. 3. Notification. 4. Hospital for advanced cases. 5. The farm colony, where patients are employed who have already been inmates of the hospital, but who still require a lengthened period of supervision before returning to ordinary life. This is a comprehensive and excellent plan, and if a similar scheme could be carried out in other large cities much would be accomplished in the direction of the prevention of tuberculosis.

Professor Béraneck, of Neuchâtel, contributes a short article on the theoretical and practical basis of tuberculin in treatment. The general conclusion of this paper is as follows. It is not possible to raise the resistance of organisms except by increasing the digestive functions of

[1] THE LANCET, July 31st, 1909, p. 284.

the leucocytes against the tubercle bacillus and its endotoxins. The tuberculins that are most likely to bring this about are those which contain the bacillary endotoxins in the form in which they are most easily assimilated by the leucocytes. Professor Béraneck describes the method of preparing a tuberculin which he maintains possesses the properties just mentioned.

Several chapters are devoted to the "anti-tuberculosis" movement in other countries, such as Canada, South Australia, the United States, Russia, Italy, and elsewhere. These chapters are of some interest, but we think it would have been well not to have confined the articles, as far as the United Kingdom is concerned, to the Edinburgh system and to the institutions founded on that system only. It would have been better if the work accomplished at the English hospitals and sanatoriums had also received notice.

Handbuch der Vergleichenden Physiologie. Herausgegeben von HANS WINTERSTEIN. 17. Lieferung. Band I.: *Physiologie der Körpersäfte.* Erste Hälfte. Bogen 11–20. Pp. 161–320. Price 5 marks.—18. Lieferung. Band II.: *Physiologie des Stoffwechsels.* Erste Hälfte. Bogen 72–98, nebst Titel und Inhalt. Pp. 1145–1562. Price 5 marks.—19. Lieferung. Band III.: *Physiologie des Energiewechsels, Physiologie des Formwechsels.* Erste Hälfte. Bogen 1 bis 10. Pp. 1–160. Price 5 marks. Jena: Gustav Fischer. 1911.

Dr. Fil. Bottazzi continues (17th Lieferung) his account of cytoplasm and tissue juices, and in doing so he gives an account of such matters as colloids, gels, and hydrogels, the work of Mann and Hardy in this country being fully acknowledged. The difficult physical problems that beset the investigator of such a subject as imbibition are expounded in a way which seems to give delight to the author, though the average reader will have to ponder over, and perhaps read a second time, the large number of physical facts which it has been contrived to tabulate. On p. 173 and subsequent pages the author shows concisely the application of these physical facts in the domain of biology. Crystallo-colloids and ions, adsorption, and hormones are next considered, but as to the hormones and how they act, "Wissen wir Nichts" (p. 211). The whole question of cell membranes is lucidly set forth in a comprehensive essay. The large part played by lipoids is fully discussed. A most interesting chapter is that devoted to the transformation of energy and the chemical processes that take place in living matter (pp. 263–290), full advantage being taken of the work of Benjamin Moore. The remainder of this "Lieferung" is devoted chiefly to "cell-juices." Dr. Bottazzi has done his work well, both in setting forth facts and in his acute criticisms on very difficult problems of cell physiology.

In the rather stout 18th "Lieferung," which contains the index for Vol. II., Professor Biedermann continues his elaborate exposition of the various methods and mechanisms by means of which animals take in, manipulate or digest, and then assimilate their food. The interesting mechanisms for the "prehension" of food by the chameleon and by various types of birds are first set forth, and the part played by the tongue is admirably described and depicted. A very full account is given of the salivary glands in animals, including the work of Pawlow, the chemical aspect of the question being also fully discussed. Then follows an account of the stomach in amphibia, reptiles, and birds (pp. 1178–1349), with a considerable number of illustrations from well-known authorities. The author writes with a full knowledge. Physiologists and zoologists alike would do well to consult and digest this elaborate chapter. The figure (No. 400) of the crop of a pigeon (after Marshall) is not so good as the classical one of John Hunter. All kinds of histological and chemical investigations are cited, so that we are almost bewildered with the array of facts. Even the ciliated and other parasites that occur in the alimentary tract of animals are fully described, while the whole question of digestion in carnivora, herbivora, and omnivora is set out with a minuteness of detail unsurpassed in any other treatise.

The movements of the intestine are dealt with in a similarly thorough manner from the amphibia upwards. Claude Bernard's figure of the pancreas in the dog (Fig. 456) is admirably reproduced, and so is his figure of the pancreas in the rabbit, but we miss his still more striking illustration of the appearance of chyle in the lacteals below the opening of the pancreatic duct. Nor does Professor Biedermann forget to introduce in his illustrations the latest results obtained by the Golgi and Cajal methods. We find what is to us a new name, "enterasen," exemplified by lipase (p. 1402 β). The literature alone occupies 27 pages. It is a slip that stomach appears as "stomac" (p. 1469), and taking the literature as a whole there are relatively very few English names.

R. du Bois-Reymond, a son of the famous physiologist of Berlin, has for many years devoted much attention to the "Physiology of Movement." Readers of this most interesting (19th) "Lieferung" will not be disappointed. Some may recollect Engelmann's masterly exposition and summary of protoplasmic, ciliary, and allied movements; the author, in his account, cites and extends the work of Engelmann. The illustration from Grützner on smooth muscle is rather poor (p. 28) and is lacking in proportion. On p. 32, should not "wic" be "wie"? Full use is made of Fredericq's interesting article on Autotomy in Richet's "Dictionary." Many pages are devoted to the physiology of motion in the various classes of animals, beginning with the mammal and ending with the medusæ, the sponges, and the protozoa, amongst the invertebrates. The work of Borditch on ciliary motion is not cited, while only one reference in the index of papers is made to the work of Ranvier. The special physiology of locomotion is next dealt with. The researches of Borelli, Pettigrew, Marey, Muybridge, Auschütz, Saville Kent, v. Uexküll, and many other investigators are agreeably set forth. Beginning with man and his movements on terra firma, the author deals next with those of birds—the media on or in which animals move forming the basis of his arrangement. A much better figure of the claw of the lion (after Owen) might have been found, and the same may be said of the illustration of periophthalmus (after Günther). In connexion with the movement of the foot of a snail or slug, there is no figure of the muscular waves which can be shown so convincingly by the kinematograph. The final pages deal with "movement in water." The author has condensed an immense amount of information into his article.

Applied Anatomy of the Lungs and Pleural Membranes, with Special Reference to the Apical Region of the Chest. By J. STUART DICKEY, M.D. Belf., B Ch. R U.I., Senior Demonstrator of Anatomy, the Queen's University of Belfast. With 50 figures. Belfast: Alexander Mayne and Boyd. 1911. Pp. 128. Price 5*s.* net.

THIS monograph is the 1910 Gold Medal Thesis for the degree of M.D. of Queen's University, Belfast, expanded for publication in book form. The thesis consists of a description of the regional anatomy of the lungs and pleural membranes, studied mainly with reference to the clinical importance which must of necessity be attached to a precise knowledge of the topography of the thoracic viscera. Special attention is given to the apex of the lung, and some discussion is introduced concerning the much-debated reason for the apical site of election of pulmonary tuberculosis. The fifty figures are admirable pieces of work,

and those especially which depict the relations of the apex and the thoracic operculum are to be commended for their accuracy. The text does not always fulfil the high expectations created by an examination of the figures, for in some places it consists of text-book quotations, which one feels to be unnecessary when so much material has been examined at first hand. Nor is the truth of all these quotations borne out by what the author has figured from his own dissections. For instance, in an actual section of the thorax, the lower end of the trachea is shown well to the right of the middle line, while Eicken is quoted as saying that it frequently deviates to the left, and the author, when giving reconstructed charts of the topography of the chest, places it in the middle line.

We feel that the author has done good and original work, and yet the stereotyped descriptions of the text-books, rather than the actual findings in the body, are at times the criteria on which he has formed his judgments. Perhaps it is a heresy to say so, but the feeling is irresistible that it were better not to consult the works of some 60 previous authors, when, as in this case, a sufficiency of material has been examined to warrant dogmatic statements, regardless of text-books, concerning the actual condition in the human body. One work the author does not quote, and this one we feel would have been more valuable than all those he has included; for there is perhaps no contribution to the study of the thoracic viscera which is based on more first-hand experience than the masterpiece of Francis Sibson, published in 1869.

Psychology of the Religious Life. By GEORGE MALCOLM STRATTON, Professor of Psychology in the University of California. London: George Allen and Co. 1911. Pp. 376. Price 10*s.* 6*d.*

THIS attempt to explain psychologically the religious life, and especially the vision of the ideal, is no effort to explain it away or to destroy its claim to man's belief. The discovery of the natural causes of religion does not imply that its ideal world has no reality except in man's thought; the dim and broken image of perfection may well be formed in sympathy and correspondence with a perfection that is most real. In his preface Professor Stratton points out that a psychological account of religion based merely upon answers received from individuals when questioned in regard to their religious experience must be but limited, as it will take no notice of the religious life of a wide variety of peoples who are by nature reticent or who are not easily reached for other reasons.

The author has escaped most of these difficulties by examining the prayer, the hymn, the myth, and the sacred prophecy of all nations—a method that furnishes to the psychologist the surest indications of different religions, as their adherents are, so to speak, taken off their guard, and examined without producing self-consciousness. In the religious life there is an inherent struggle. The presence of the Supremely Impressive makes the self and other men and all the common goods of life at once of value and contempt. Different people have a different sense of this discord. "The Greek pictured the world, somewhat as he built his temple, with a certain simple grace; while the Germanic mind, like the Gothic vault with its impenetrable shadows, saw the gloom and the evil close to what is fair; every person in varying degree reveals a peculiar feeling of the tension of the world." The greater part of the book deals with the various conflicts observed in religions—e.g., that between good and evil, those in regard to feeling and emotion, such as renunciation or acceptance of the world, appreciation or contempt of self; conflicts in regard to action, ardour or coolness towards ceremonial rites, and conflicts in regard to religious thought. On p. 241 Professor Stratton gives a striking example: "We often have in lynching an attempt in good faith to apply the abstract idea of justice in a definite situation; ..... but in its frenzy the mob catches no glimpse of the many sides of its conduct that are a wide departure [therefrom] and which really strengthen the hold of crime and injustice upon men." Homer describes the immortal gods "that exist for ever and never had beginning," and yet in contrast to this the actual narrative sets forth their birth and parentage in the human way. No story in Homer, however, could more flatly contradict the Church's higher abstract conception of what a divine character truly is than the account of God's anger with transgressors in the Old Testament. "His very anger testified to the bond between Him and men; indifference would have been a sign that the gulf was impassable." When we are impressed by the incongruity between such a representation and divine perfection it is "because we have lost sight of its many sides that are harmonious with even the highest ideal, and which give it value to one who is at once reverent and uncritical."

At the end of this most interesting work the central forces of religion are dealt with. "In the simple act of sight, hearing, or touch we always perceive more than our sense-impressions warrant. Human speech and laughter are in their bare reality a mere spatter of sound which we instantly amplify ..... into meaning. ..... The completion of the observed world by adding to it the great unobserved world, so real to the religious, is therefore no anomaly." The book is one that cannot be adequately reviewed in any short notice. Painstaking research is evident on every page, quotations from the Rig-Veda, the Zend-Avesta, and Confucius are compared with fragments of the Koran, while the practices of Iroquois, Algonquins, and various African tribes are mentioned when germane to the subject. But we have indicated that the work would be a valuable addition to the library of any serious student of the philosophy of religion.

Gewerbliche Vergiftungen; deren Vorkommen, Erscheinungen, und Verhütung. By Privat-dozent Dr. J. RAMBOUSEK. Leipzig: Veit and Co. 1911. Pp. 431. Price 13.50 marks.

FOR that increasing class of persons interested in industrial hygiene we know of no book so comprehensive, systematic, and rich in references as this work on Industrial Poisonings, their Causes, Symptoms, and Prevention.

The subject, if it is to be treated at all fully, requires a very wide knowledge, and Dr. Rambousek is qualified to deal with it. He is the medical officer attached to the Central Administrative Authority in Prague, having supervision over dangerous industries in Bohemia, and he is also a professor of hygiene in the University. He is, moreover, recognised as quite one of the ablest writers on industrial hygiene on the continent. We appreciate the careful planning of the work. It is divided into three parts: first, the sources of industrial poisoning, which involves detailed account of the risks incurred in processes for the extraction of metals and for the manufacture of the substances collectively spoken of as "chemicals"; second, a survey of the symptoms and pathology of the different kinds of industrial poisons—those having local effect especially on the skin, those acting on the blood, and those having specific effect on internal organs; and thirdly, preventive measures, including legislative enactments. Especially interesting are the sections dealing with the effects of petroleum, tar, benzene, and its nitro- and amido-derivatives, anilin and dinitro-benzol.

The value of the book to the English reader at all familiar

with the matter under review is the very complete account of the wide researches made on the continent, notably by K. B. Lehmann, of Würzburg; Lewin and Roth in Berlin; Wutzdorff and Leymann, of the Imperial Health Office; Glibert, of Brussels; Carozzi, of Milan; Teleky, of Vienna; and the late Dr. Chyzer, of Budapest. Reference to work done in this country appears to have been obtained mainly from papers contributed to international congresses or from abstracts of Home Office Blue-books and the like in German and Austrian papers specially devoted to industrial hygiene.

It is the fullest work of its kind known to us, and will be of great value to those who read German. It might well be translated.

The House Surgeon's Vade-mecum. By RUSSELL HOWARD, M.B., M.S. Lond., F.R.C.S. Eng., Surgeon to Poplar Hospital; Assistant Surgeon, London Hospital. Illustrated. London: Edward Arnold. 1911. Pp. 511. Price 7*s.* 6*d.* net.

AS the name suggests, this book is intended for the use of newly appointed house surgeons. It is likely to prove useful not only to all those who have to do with surgical work in the wards and out-patient department, but to those in practice who have not had the benefit of a resident post in a hospital. They will be able by its aid to acquaint themselves with the details of modern surgical practice. It is perhaps in the after-treatment of operation cases that the reader will derive the greatest benefit from its study, for it is the part of surgery which is the most difficult to acquire, and the most neglected in ordinary systematic works.

In the chapter on the sterilisation of the hands we are pleased to see that the author lays stress on the advisability of the surgeon keeping the hands free from all forms of contamination, not only when he is about to perform an operation, but at all times. He also rightly insists that too much reliance should not be placed on the use of gloves, for they are easily punctured or torn. The chapter on hernia deserves mention, for in it we find just those details that are generally missing from text-books, such as the exact method of performing taxis and of measuring a patient for a truss.

We have found much valuable information in the book and nothing to which exception can really be taken, and we feel sure that it should prove of much service to those for whom it is intended. It is well illustrated.

Précis des Maladies des Vieillards. Par ADRIEN PIC, avec la collaboration de S. BONNUMOUR. Paris: Octave Doin et Fils. 1912. Pp. 890. Price 10 francs.

THIS volume contains a full and excellent account of the various morbid processes as they affect individuals advanced in life. Some of the maladies described are peculiar to old age, others present phenomena rather different in character according to the period of life at which they occur.

The chapters on senile changes in the heart and vessels will naturally attract most attention, and the remarks on diagnosis and treatment are particularly worthy thereof. The changes that may be noted in the cardiac rhythm are well described, especially in reference to the slow pulse. The condition of artero-sclerosis is discussed at length and numerous useful hints are given as to prophylactic and active treatment.

A good account is given of pulmonary tuberculosis as it occurs in elderly persons. Practitioners in charge of workhouse infirmaries fully realise the frequency with which this affection is found in old age, and the old idea that tuberculosis of the lung was essentially a disease of young adults has had to be modified. Apart from arrested lesions, which have been shown to be so common in all adults, a progressive form of pulmonary tuberculosis is frequently found in elderly individuals. The disease, however, under such conditions, usually follows a slow course, and there is a strong tendency to fibrosis. In the volume now before us, full space is given for a discussion of this subject. The observations recorded are well worthy of study.

The greater part of the morbid conditions discussed are to be found described in various text-books of general medicine, or in monographs on particular diseases peculiar to advanced life; but there is much to be said for bringing such descriptions under one cover, where they will be easy for refeence.

Case Histories in Neurology: A Selection of Histories setting forth the Diagnosis, Treatment, and Post-mortem Findings in Nervous Disease. By E. W. TAYLOR, A.M., M.D., Instructor in Neurology, Harvard Medical School, &c. (The Case History Series.) Boston: W. M. Leonard. 1911. Pp. 305.

IT is difficult to know exactly what purpose is served by the compilation of 114 cases of the more frequent disorders of the nervous system. They are scarcely calculated to illustrate difficulties in diagnosis or to provide material for differential diagnosis, for in by far the greater number of them the diagnosis is very obvious. The remarks on treatment are somewhat scrappy; indeed, for many of the cases here reported no treatment was or could be availing. If a record of clinical and pathological data is to be of value it must be by the elaboration of detail; but many of the histories and examinations supplied by the author are too scanty to appeal to the neurologist. There are no clinical photographs or drawings to relieve the monotony of the record of cases which the reader has never seen; the book may possibly appeal to those who have actually seen the cases referred to, but otherwise it has little to recommend it. A few of the cases present points of some interest on which further information would have been welcome. Case No. 86, diagnosed as acute bulbar paralysis by the author, looks more like a case of pseudo-bulbar paralysis. Case No. 92 may conceivably have been one of subthalamic lesion, not of paralysis agitans. In any case, this is just a point on which more detailed differential diagnosis might have proved instructive. It is erroneous, we think, to state that "forced laughter is often very strikingly developed in certain lesions of the bulb."

LIBRARY TABLE.

Fortpflanzung, Vererbung, Rassenhygiene. Katalog der Gruppe Rassenhygiene der Internationalen Hygiene-Ausstellung 1911 in Dresden. Herausgegeben von Prof. Dr. MAX VON GRUBER und Priv.-Doz. Dr. ERNST RÜDIN. Mit 230 Abbildungen von M. VON GRUBER, nebst einem Bibliographischen Anhang von Dr. RUDOLF ALLERS. München: J. F. Lehmann. 1911. Pp. 178. Price 3 marks.—This is really a catalogue of the elaborate group of printed tables prepared to illustrate race hygiene as shown at the International Hygiene Exhibition held in Dresden in 1911. There are no less than 230 reproductions of these tables, with full descriptions, to illustrate such subjects as propagation of animals and plants, variation, selection, mutation, transmission of acquired peculiarities, laws of heredity in man, degenerations, racial hygiene, and neo-malthusianism, with several pages of bibliography. The preparation of the plates required the coöperation of many workers, while the Minister of State for Scholastic Education in Munich gave a substantial subvention in cash to carry out a most praiseworthy project, the first of its kind. The tables should prove particularly useful to zoologists, botanists, pathologists, and eugenists. We do not know whether they can be purchased in an enlarged form, but if they can be so obtained they would certainly be useful to lecturers. The work represents

a really enormous amount of labour, statistical and otherwise. It is a veritable mine of condensed facts graphically illustrated.

Kurzgefasste Chirurgische Operationslehre für Studierende und Aerzte. Von Dr. AD. OBERST, I. Assistent an der Chirurg. Klinik und Privat-dozent für Chirurgie an der Universität Freiburg i. Br. Mit 232 zum Teil farbigen Abbildungen. Berlin: S. Karger. 1911. Pp. 197. Price, paper, 6.20 marks; bound, 7 marks.—In this work the author does not confine himself to a description of the set operations most usually performed by students in a course of operative surgery, but includes also a number of other operations, such as those for hare-lip and for goitre. It is very suitable for the student of surgery, for it is written with great clearness, and the explanations of the various steps of the operations and the reasons for what is done are stated so that anyone can understand. There is no useless verbiage, yet the clearness of the explanation is not sacrificed to brevity. The numerous illustrations are for the most part excellent, though here and there an illustration is not so clear as might be wished—for instance, Fig. 165. It is a useful little book, and is evidently the work of one who is an experienced teacher as well as a skilled surgeon.

Applied Anatomy and Oral Surgery for Dental Students. By ROBERT H. IVY. London: W. B. Saunders Company. 1911. Pp. 280. Illustrated. Price 6*s.* 6*d.* net.—The author in the preface tells us that the book is not intended to replace larger works on anatomy and general and oral surgery, but rather to indicate to the student the subjects that require his particular attention. We think he has in a fair measure succeeded in his object. He realises that dental surgery is part of medicine, with the result that his teaching is sound. For example, we read that chronic abscesses in which there is necrosis at the end of the root of the tooth are rarely cured by so-called amputation of the root, and extraction of the tooth is the better course. The work, too, is thoroughly up-to-date, for we find under the heading of syphilis a brief but clear account of the Wassermann reaction. The illustrations are good, but we would suggest to the author, when any future edition is contemplated, that the more common forms of disease occurring in dental practice might with advantage be illustrated.

Materia Medica Step by Step. By ARTHUR W. NUNN. London: J. and A. Churchill. 1911. Pp. iv.-236. Price 3*s* 6*d.* net.—Of literature on materia medica there is an abundant supply, but there is room for a little book of this kind which is obviously intended for the beginner. The chemist's apprentice, with the raw drugs of the pharmacy at his command, and the medical student, with a cabinet of specimens, will find the lessons quite interesting and a pleasant introduction to a rather dreary, but necessary, subject. The student is taken over the ground in 31 steps, after each of which he must pause to answer a few suggestive questions. The author deals not only with the official drugs but also with the unofficial materia medica, of which a list appears in the syllabus of the minor examination of the Pharmaceutical Society of Great Britain.

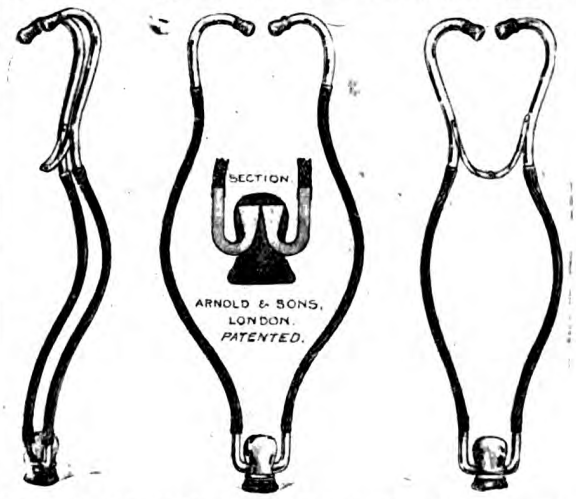
A Text-book of Inorganic Chemistry. By GEORGE SENTER, D.Sc. Lond., Ph.D. London: Methuen and Co., Limited. 1911. Pp. 583. Price 6*s.* 6*d.* net.—The plan of this book is in accordance with recent developments. The old text-book, which stopped short at certain fundamental laws and theories—such as the laws of the conservation of mass and energy, the laws of chemical combination, the atomic theory, molecules, the periodic classification—is not complete for the modern student in view of the enormous importance which the developments of physical chemistry have gained in regard to the interpretation of chemical phenomena. Dr. Senter gives us a modern text-book in which the meaning and significance of new principles are carefully and methodically presented, while he introduces for the reader's consideration and study the subjects of chemical equilibrium, the determination of molecular weights in solution, electrolysis, and electrolytic dissociation—those branches of chemical theory, in short, which constitute new principles. He retains the method which, surely, must ever be right—viz., that of presenting first the simple facts upon which laws and theories are based. Dr. Senter writes from an obviously intimate acquaintance with the needs of the student of chemistry and in a way calculated to develop the reasoning processes of the reader.

Handbook of Electro-therapeutics. By WILLIAM JAMES DUGAN, M.D.—In our review of this book in THE LANCET of Jan. 6th, 1912, p. 30, we gave the name of the publishers of the book only as Messrs. F. A Davis Co., Philadelphia. We should have added the name of the London agent, Mr. Stanley Phillips, 23, Creighton-road, Queen's Park, London, N.W., who supplies all books published by Messrs. F. A. Davis.

New Inventions.

A NEW PHONOPHORE STETHOSCOPE.

Messrs. Arnold and Sons, of Giltspur-street, London, E.C., have invented and patented a new phonophore stethoscope for which they claim certain advantages over the ordinary stethoscope. The new phonophore is provided with two conducting tubes from the bell instead of one, as in the old form of that instrument. The result is that the sound listened to is conducted separately and equally to the two ears, and it is heard more loudly and distinctly. It is claimed that this



instrument is useful in cases with doubtful cardiac murmurs, and in those in which emphysematous lung renders the heart sounds feeble and indistinct; and further, that normal breath sounds are heard more loudly than with the ordinary stethoscope. We have tested the instrument, and find that it is more convenient than the old form of phonophore, and that it conducts sounds well. The prices are the same as were those of the older variety, ranging from 6*s.* 6*d.* to 13*s.* 6*d.*

BRITISH ASSOCIATION.—The president of the next meeting of the British Association for the Advancement of Science at Dundee will be Professor E. A. Schäfer, M.D. Among the presidents of sections will be Professor G. Elliot Smith, Anthropology; Dr. Leonard Hill, Physiology; and Professor A. Senier, M.D., Chemistry. Dr. Arthur Keith will deliver one of the evening discourses. The meeting will begin on Sept. 4th.

THE LANCET.

LONDON: SATURDAY, MARCH 2, 1912.

The National Insurance Act.

ALTHOUGH there has been no abatement of genuine interest in the National Insurance Act within the ranks of the profession, the past week has been one of comparative quiet in the medical world so far as outward signs go. The Representative Meeting of the British Medical Association on Feb. 20th–22nd arrived at conclusions which have brought it home to all that there is a pressing need for a steadfast attitude. The state of comparative calm in which we now are suggests very strongly that the practical compromise reached by the opposing parties in the governing body of the Association has been approved by many of their constituencies, and that some basis of united action has at last been hammered out. This view depends, of course, upon the assumption that the Council of the Association, in whose hands all executive power is vested, intends to carry into effect the instructions which it has now received. The policy set out in the leading resolution of the Representative Body, and unanimously agreed upon by the delegates, seems to stand midway between the courses advocated by extremists on either side, and has met with little adverse criticism. But while for the present the tide of comment has receded, it is clear that the National Medical Union is not content with a situation that still has its deep anxieties. A moderate policy which can weld conflicting medical interests without estranging public sympathy may carry the day for the medical profession, but it is idle to suppose that the battle is won because peace may be restored within the ranks of the British Medical Association. In the long and arduous struggle which is still ahead the advice and support of the great corporations should prove of real value.

The demand that the minimum requirements of the medical profession should be guaranteed in the Regulations, with a view to their ratification by Parliament, and the intimation that failing this the medical profession will stand aside from the Act, seem together to strike a mean between the wholly *non possumus* attitude and the dangerous plan of continuing flaccid negotiations. When the Act, in a form which all men saw to lead straight to numerous difficulties, became law at the close of last year, the split in the medical profession seemed for the moment beyond repair—a party which wished to work the Act was straightly opposed to one which would have none of it, and the political newspapers worked hard to widen the breach. It was then that we made the suggestion that the way out of the *impasse* was for the medical profession to concentrate attention upon the Regulations, and only to refuse medical service if these proved to be unsatisfactory. This proposal, we considered, would avoid the probability of disastrous local bargaining, while avoiding also the attitude of complete summary refusal. Recent events have shown that this policy is acceptable to many medical men of divergent opinions as a workable basis of union, and if the constituencies of the British Medical Association can also bring themselves to accept the compromise arrived at by their Representatives, and to stand by it while the crisis lasts, the future can be regarded as brighter. Union within our body must exact all the recognition of our rights which it is in the scope of the Commissioners to grant; and if their powers fall short of what some believe of them, our solidarity will lead the Government to amend the Act, lest a brave scheme for improving the nation's health should fail miserably of its main object.

The Present Position of Salvarsan.

ON the first introduction of a new drug it is by no means easy to express a decided opinion as to its merits, especially when the disease for which it is employed is liable to reappear many months and years after apparently it has been cured. Of all diseases with which we are acquainted syphilis is probably the one about which it is most difficult to be certain that a permanent cure has been effected; for after intervals which may often be measured by years some manifestation may appear showing clearly that the virus has been latent in the body during the lengthy interval. Therefore when a new remedy is brought forward as more capable of effecting a complete and permanent cure of syphilis than was possible or at least easy by any other method, it is only natural that some of those who had many years' experience in the treatment of the disease should look askance at a remedy for which so great a claim was made; for by means of mercury judiciously, perseveringly, and thoroughly administered results of the very greatest value have been obtained. It is difficult to forsake a tried remedy for a new drug. Now sufficient time has elapsed since the introduction of salvarsan for us to form some idea as to its value and its risks; it is, however, not yet possible to make any dogmatic statement as to the position which the remedy will hold in the future—whether in, say, ten years' time it will be widely used or whether it will have lost much of its present popularity. That salvarsan has a great power against the treponema pallidum is beyond dispute, but the occurrence of a number of fatal cases has shown that it is by no means free from danger; we are, perhaps, in a position to inquire whether these deaths are a necessary accompaniment of the administration of the drug or whether they, or most of them, might have been avoided by greater attention to the method and details of administration.

It must not be forgotten that salvarsan was not a natural substance employed empirically, but a substance obtained as the result of a long series of experiments conducted on the most modern scientific lines. The problem

which EHRLICH set himself was to find a substance which should prove inimical to the treponema, while at the same time it should damage to the least possible extent the normal tissues of the body. His object was to obtain a substance which could destroy completely all the organisms of the disease with one injection, and yet should not harm the host. Whether salvarsan is capable of effecting this cannot yet be said to be proved, but it is at least certain that it has a very great influence on the treponema and that the manifestations of the disease respond as a rule very readily to it. The amount of evidence both as to the merits and the risks of the drug are now numerous, and a reference to the indexes of THE LANCET for last year will show that we have devoted a large space to papers on this subject, and we have done so because we have felt the great importance of the matter. For a final judgment we must wait for some years, but it is at least possible at present from the materials in our possession to express an opinion on the value and risks of the drug. All those who have had much experience of the use of salvarsan are agreed that it is capable of causing the rapid disappearance of syphilitic manifestations; it is true that some lesions seem to be more amenable to its influence than others, but in nearly all cases the action is rapid and effective. In fact, most observers are of opinion that it is more rapid and more effective than is the action of its main competitor mercury. It is true that there are some clinicians who decline to acknowledge that the efficacy of the drug is great, but they are comparatively few in number. The point of the controversy now is the question of the risk attendant on the use of the drug. At first the risk was said to be very small, but at that time it was employed by but a few surgeons, and it was administered with the greatest care, while since the use of salvarsan has spread widely it has been employed much more freely; and it must not be forgotten that the dose has been increased, while in many cases it has been thought necessary to administer a second dose.

That the drug can cause death is certain, and by now a large number of fatal cases have been published. In some of the earlier deaths the fatal result appeared to be due in part at least to the fact that the drug had been administered to patients who were almost moribund, but that explanation cannot be allowed in most of the more recent deaths. In the last issue of THE LANCET we published a letter in which are collected together a number of recently reported fatal cases after the injection of salvarsan, and the list is sufficient to make us consider with great care the risks of the drug. As to some of the cases it is possible to suggest the cause of the fatal result. It appears that in two of the cases mentioned the full dose of 0·6 gramme was repeated after a very brief interval; in one case the interval was only three days and in the other it was a week. Now it has not yet been shown that there is any anaphylaxis with salvarsan, but whether there be or not, it is, to say the least, very unwise to inject so large a quantity of the drug as 1·2 grammes within three days or even a week. It may be answered that it has been done with impunity, but such a dose is extremely large, and the fatal result is not strange. This is pointed out in our columns this week by Dr. G. S. STOPFORD-TAYLOR and Dr. R. W. MACKENNA. It may be necessary to repeat the dose in some cases, but it is certainly advisable that an interval of greater length than a week should be allowed to elapse between the two injections. In some of the fatal cases in which only a single dose has been given the symptoms have pointed to the presence of a meningitis, and they have arisen within a few days of the injection, and in others nephritis has occurred. These are evidently the direct effects of the drug. It is of interest in such fatalities to know whether the solution was filtered before it was injected intravenously, for it is easy to see that minute solid particles of the drug might have a harmful effect that would not be produced by a solution. It is very desirable that in reports of cases where very severe symptoms or a fatal result have occurred that the fullest particulars should be given of the mode of administration, especially as so many different methods are now employed. There is a further point that is worthy of consideration, and that is the relative frequency of fatalities. By now the drug has probably been given in one way or another in more than 100,000 cases, but we have no evidence as to the proportion of fatal results, though a few surgeons have published the statistics of their own cases. The present position of the matter is that salvarsan has been proved to be a powerful antisyphilitic agent, that in a large proportion of the cases in which it has been given it has produced no harmful symptoms, but that in a small number of cases severe symptoms have appeared, and in some cases a fatal result has followed. There is evidence to show that in some of these fatal cases at least the death has been due to the too early repetition of the dose, and in other cases possibly some error in the mode of administration has been committed. It is clear that the drug has a very definite value, but it is equally clear that its administration needs the greatest care. It is not improbable that a certain amount of selection of cases will be necessary if the best results are to be obtained, but at present it is hardly possible to say what cases should be excluded from the treatment, though there is some reason to think that nephritis is a contra-indication to the administration.

Annotations.

"Ne quid nimis."

PRESERVATIVES IN MILK AND CREAM.

AS was foreshadowed in an annotation in THE LANCET of Feb. 17th, the Local Government Board, in the exercise of its powers under the Public Health Acts, has drafted regulations prohibiting the use of preservatives in milk and defining the conditions under which preservatives may be used in cream. The regulations are far-reaching in character and apply to all milk and cream sold for human consumption in this country whether produced here or imported from abroad. The Board appears to have been guided in the case of milk by the recommendations of the Departmental Committee, which in 1901 recommended that the addition of preservatives to milk should be made an offence, but in the case of cream the Board has not followed precisely the direction indicated in the Committee's report. The Committee recommended that only boron preservatives should be allowed in cream in an amount not exceeding 0·25 per cent., and as will be shown presently, the draft regulations

as they apply to cream, are more stringent in their requirements. The use of preservatives in milk is prohibited in the following unequivocal terms of Article III.: "1. No person shall add, or order or permit any other person to add, any preservative substance to milk intended for sale for human consumption. 2. No person shall sell, or expose or offer for sale, or have in his possession for the purpose of sale any milk to which any preservative substance has been added in contravention of subdivision (1) of this article." The expression "milk" includes separated, skimmed, condensed, and dried milk, but as the traffic in condensed milk would be seriously impeded if the use of sugar were disallowed it is provided that "neither cane nor beet sugar shall be regarded as a preservative or a thickening substance." It will be remembered that in a report to the Local Government Board in September last year Dr. F. J. H. Coutts [1] showed that there were serious drawbacks to the use, except for temporary purposes, of full-cream sweetened condensed milk as an infants' food, the most objectionable feature being the excess of sugar in relation to other food elements, but the Board in drafting its regulations no doubt deemed it inexpedient to prohibit the sale of a product which, in exceptional cases, may be a useful article of diet. It is the function of educational and not legislative measures to teach those who have the care of the young that although a certain article of food may on occasion be useful, it should not necessarily be used habitually. In the same report Dr. Coutts suggested that the use of condensed skim milk for infant feeding should be prevented, as it implied a slow process of partial starvation, but the Board has not given effect to this suggestion since it would hardly be germane to the principal purpose of the regulations. The restriction placed on the use of preservatives in cream is as follows: "1. No person shall add, or order or permit any other person to add, (*a*) any thickening substance to cream or preserved cream; (*b*) any preservative substance to cream containing less than 40 per cent. by weight of milk fat; (*c*) to cream containing 40 per cent. or more by weight of milk fat any preservative substance other than (i.) boric acid, borax, or a mixture of these preservative substances, or (ii.) hydrogen peroxide, in amount not exceeding 0·1 per cent. by weight, in any case in which the cream is intended for sale for human consumption. 2. No person shall sell, or expose or offer for sale, or have in his possession for the purpose of sale, any cream to which any thickening substance or any preservative substance has been added in contravention of the provisions of subdivision (1) of this article." Dealers in cream, preserved in a manner which does not contravene the above regulation, will be required, by means of labels on the receptacles, to declare that the cream is preserved and to state the name of the preservative. In this matter the regulations are precise, laying down in a schedule the size of the label, which varies according to the capacity of the receptacle, and prohibiting the attachment to any receptacle of a label bearing a trade description which would be likely to mislead a purchaser as to the utility of the preservative substance. In tea shops and other refreshment rooms the cream jugs will not be required to be labelled if in each room a conspicuous notice is affixed indicating that the cream supplied is preserved cream, or if a statement to that effect is printed on the bills of fare. The penalties for offences against the regulations will be those for which provision is made by Subsection (3) of Section 1 of the Public Health Act, 1896, but before the local authority institutes proceedings against any person they will be required to afford him an opportunity of explaining the circumstances in which any irregularity may have occurred. With the exception of the provision relating to the labelling of preserved cream, which takes effect on Jan. 1st, 1913, the regulations will come into force on June 1st next, at the beginning of the warm season.

[1] See THE LANCET, Sept. 16th, 1911, p. 833.

THE STORY OF ANCIENT MEDICINE REVEALED BY GREEK INSCRIPTIONS.

Professor Oehler, of Vienna, has been summarising the Greek lapidary records having reference to medical men in antiquity, with interesting results. The earliest record of the kind as yet copied into the corpus of Greek inscriptions refers to a person named Aineios, an Athenian, who lived in Athens about the end of the sixth century B.C. The most recent text of this category known concerns a medical man named Petros, a citizen of Claudiopolis, and is of the date of 511 A.D. Taking the collection of these inscriptions as a whole, it is found that the term used in them for a physician varies considerably. Instead of the common expression, *ἰατρὸς*, the following variants appear: At Seleucia, in Syria, we find *εἰατρος*; in Cyprus, *ἰατήρ*. A text at Trikka reads *ἰήτωρ*; whilst some Athenian peculiarities are *ειήτήρ*, *ἰητήρ*, and *ἰητρός*. At Beotian Thebes the word *σάκτας* was used. That the profession was held in high favour is proved by its having been assigned to the position of a *τέχνη*, and it was written of as *ἡ ἰατρικὴ ἐπιστήμη*. Public or municipal medical officers, before the Roman imperial *régime*, were called *ἰατροὶ* or *δημόσιοι ἰατροὶ*. They were nominated and elected for one or more years, and were subsidised by their city. By the period of Nero the title *ἀρχιατρὸι* had become common in inscriptions. This word at first was used to denote the royal medical attendant of Hellenic sovereigns in Syria, and it is believed was first applied in Italy to Xenophon of Cos, who was at the court of Claudius. However, for such personages *ἰατρὸς Σεβαστοῦ* was still used. Under the Empire the public medical officer's position appears in some localities to have become hereditary. For an honorarium of 500 to 700 drachmæ the public medical officer had to treat the citizens gratuitously. Both military and naval medical men are spoken of in these memorial inscriptions. A certain Hermias of Cos was employed at Gortyna during the war of 221 to 219 B.C.; and a medical officer to a fleet is referred to in a text discovered quite lately. Some six female practitioners are mentioned in these mementos. Of one of these the record has not yet been edited *in extenso*. Another was evidently much respected, for no less than three texts concerning her are extant. One of the ladies was not only *ἰατρὸς* (or *ἰατρίνη*), but also *μαῖα*. *Apropos* of this, it is singular that no female bears the appellation of simply midwife in these lapidary texts, but among them an inscribed *ex voto* to Eileithyia qualifies two medical men accoucheurs as *μαῖοι*. Eight texts relating to veterinary surgeons should be noted, but Latin inscriptions, especially from the sites of legionary camps, would augment the number of these. Athletic contests at the great games were provocative of many accidents, and so in view of casualties the committees for such sports arranged for surgeons to be in attendance. So, also, the various gymnastic associations and many societies similar to our clubs, or rather to the mediæval guilds, retained medical men for their members. The faculty themselves formed associations and councils. In one instance, at Rhodiaopolis, an enthusiastic member of the profession seems to have established a medical council in his native city or to have convened a congress there. His name was Herakleitos, and he further distinguished himself by composing medical poems. His inscriptional panegyric, therefore, properly entitles him *Ομηρος ἰατριχῶν ποιημάτων*. These contemporary memorials reveal to us other literary prodigies among medical authors

besides those familiar to fame from the classics. Thus, one inscription tells us that Hermogenes of Smyrna composed an Iatrika of 77 books. Another praises Tiberius Claudius Menekrates for writing a medical treatise in 156 books. As nearly all this kind of medical record is honorary it recapitulates all the honours presented to the individuals whom the texts concern, thus showing conclusively not only the high respect which these several members of the medical fraternity enjoyed, but also the lofty esteem in which medical men were held in the Greek and Roman world. We do not here refer to the numerous inscriptions concerning the cures and the cult of medicine in the various Asklepieia, especially at those of Epidauros, Athens, and Cos, because they relate also to the religious aspect of the matter. Many medical men at these shrines express their gratitude to the deity for guidance or for direct intervention on behalf of their patients. The corpus of inscriptions from these sites —which occupied the place of the modern clinics of to-day— is well known. But the colleges attached to them may have been of a more genuinely educational nature than has been hitherto supposed, for an inscription emanating from Ceos refers to a professor as lecturing upon *ἰατρικὴ τέχνη*, which may have meant general physiology. The life-history of the ancients can no longer be adequately written by confining research to the classic authors whose works remain to us, not even if we include the many portions of books recently recovered from among Egyptian papyri. The immense mass of inscriptions must be thoroughy investigated and the information afforded by them utilised, a fact which is better appreciated on the continent than with us.

RHEUMATIC FEVER IN THE LAST DECADE.

AN interesting paper, being the treasurer's prize essay of the Pupils' Physical Society, is contributed to Vol. LXV. of the Guy's Hospital Reports by Dr. Alexander Sandison on the subject of Rheumatic Fever in the Last Decade. The essay is divided into two parts, the first of which is devoted to a historical and critical review of the advances made in the study of acute rheumatism during the period 1900–09. The second part contains an analysis of the cases admitted to Guy's Hospital during the same period. In the first part a careful review of the observations made during the decade upon the relation of micro-organisms to the etiology of the disease is given, especial reference being made to the work of Poynton and Paine. Dr. Sandison concludes that while it is now generally admitted that rheumatic fever is probably an infective condition due to some micro-organism or organisms, the increasing isolation of Poynton and Paine and their supporters from the opinions of other workers suggests that subsequent work will support the views of those who deny the specificity of the micrococcus. He refers with some emphasis to the work of Dr. Horder, who obtained entirely negative results from the examination of the blood of 30 cases of acute rheumatism during life, and in post-mortem examinations of the effusions, vegetations, and other lesions in 16 cases, only found streptococci in five. On the other hand, in 33 examinations of the blood in cases of malignant endocarditis he obtained 28 positive results, in 18 of which streptococci were recognised, many of which might be called diplococci. There is here a possible analogy with scarlet fever, with two clinical types, an ordinary one due to an unknown micro-organism and a malignant form from which a streptococcus can be readily isolated. In other directions Dr. Sandison points out that progress has been but slight The relationship between chorea and rheumatism has been more firmly established; while, on the other hand, the importance of tonsillitis and of the various skin affections, including peliosis rheumatica, as direct manifestations of rheumatism has become less generally accepted, and iritis is not now believed to be of rheumatic origin. He expresses disappointment at the failure to advance in the direction of prevention of rheumatic heart affections, but spoke hopefully of the increasing emphasis which is now being laid upon the importance of the early diagnosis and treatment of the rheumatism of children. In the second part, dealing with the cases at Guy's Hospital, he discusses the 1053 cases of undoubted rheumatic fever which were admitted during the 10 years, representing 3·96 per cent. of the total admissions to the medical wards. Analysis of the cases shows that some variety of heart lesion occurred in at least 50 per cent., chorea occurred in 8·7 per cent., and skin lesions, erythema nodosum, and purpura in 3·9 per cent. In regard to sex, 546 were males and 507 females. Considerations of family history and diathesis are briefly examined. Out of 89 cases in which there were notes of family history, a positive result was found in 18 cases, which is 20·2 per cent. There was a predominance of the incidence of the disease among the dark type, especially those of the dark-brown hair and blue-grey eyes. A lengthy examination is made of the relation between rheumatic fever and weather conditions, and the following conclusions are arrived at. In the presence of increasing sun, temperature, and humidity the disease increases; in the absence of sun and temperature, but with high humidity, the disease continues for a while, but falls rapidly as the humidity declines; easterly winds are conducive to the disease in the presence of rising sun and temperature in spite of declining humidity. In other words, sun and temperature, aided by east winds, produce the disease and spread it abroad, while humidity maintains it. The subject of rheumatic nodules is next considered. Twenty-five cases were observed, of which 8 died—that is, 32 per cent. All of them presented heart disease in one form or another. Excluding one rather unusual case, there were 12 cases in males with an average age of 13¼ years, and 12 in females with an average age of 10½. Salicylism was noted in 17 cases of the total number of cases of rheumatic fever—namely, in 1·6 per cent. It appears to occur much more frequently in adults than in children or in young people. Dr. Sandison has afforded an interesting and useful *résumé* of the present state of our knowledge in regard to this disease. He points out that much yet remains to be done in the elucidation of its etiology, pathology, and treatment. His paper is of value in indicating the directions in which future work may proceed.

INFANT MORTALITY.

A LECTURE delivered at the Galton Eugenics Laboratory of University College, London, by Dr. M. Greenwood, jun. (of the Lister Institute of Preventive Medicine), threw some interesting light on this subject. The lecturer pointed out that public opinion respecting the possibility of influencing the infant death-rate by administrative action had greatly changed during the last 100 years, the prevalent belief being that the great majority of deaths in the first year of life were due to preventable causes. Apart from the supposed ill-effects of the industrial employment of mothers (a subject discussed by Miss Elderton in a previous lecture of the same series) three factors had been associated in the public mind with the rate of infant mortality—viz., the birth-rate, the prevalence of artificial feeding, poverty. It is usually supposed—and the supposition was again adopted in the recent Local Government Board report on infant mortality—that the connexion between the birth-rate and the infant death-rate was due to the higher fertility of the poorer classes and might be regarded as of secondary importance. In view of

the probability that stocks characterised by a high proportion of heritable defects seem more fertile than the average—a result largely attributable to systematic limitation of families among the middle and superior artisan classes—the current belief as to the nature of the association between a high birth-rate and a high infant death-rate requires critical examination. But, as Dr. Greenwood pointed out, the high mortality of bottle-fed children may, in part, be a consequence of some inherited weakness of constitution. He described the results of an analysis of data, published by Dr. Groth and Dr. Hahn, collected in the rural districts of Bavaria, and said that while he was of opinion that these data were not free from objections, he believed that the following results could be accepted—viz.: (1) both the birth-rate and the prevalence of bottle-feeding were more closely associated with the infant death-rate than was the prevalence of administrative poverty, as indicated by the proportion of inhabitants in receipt of some form of public assistance; (2) the association of the birth-rate and the infant death-rate was not secondary to an association between the latter and poverty. Dr. Greenwood was of opinion that the association between the birth- and infant death-rates was no mere fortuitous occurrence, but might find its real explanation in the artificially engendered difference of fertility between normal and pathological stocks. In this connexion the work of Dr. David Heron was, in the lecturer's view, of great significance. In the days prior to general limitation of family by the more prosperous classes 50 years ago the correlation (deduced from London statistics) between the birth- and infant death-rates was actually negative. By 1901 it had become large and positive. The general conclusion come to was that the effects of administrative reforms upon the infant death-rate were in danger of being exaggerated. Any such exaggeration was calculated to do a great deal of harm, because expectations were raised which could not be realised, and the consequent reaction in the public mind might lead to general indifference towards the subject of sanitary administration. At the present time, he thought, public health matters were discussed with a regrettable absence of the critical spirit and a large infusion of personal or party bias.

THE MYSTERY OF $C_{10}H_{16}$.

$C_{10}H_{16}$ is one of the most interesting molecular groups known to chemists, and its careful study promises to lead to developments of the utmost utility and importance to the world. But so far it has baffled man to find out, except perhaps in a few instances, how Nature moulds these groups, to form an ever-varying number of substances familiar to everyone. $C_{10}H_{16}$, for example, is the foundation of rubber, but no chemist yet has been able to handle $C_{10}H_{16}$ so as to persuade it to change from a simply constituted oil into the well-known solid, enduring, resilient substance rubber. And yet it is known quite definitely that indiarubber is practically speaking a multi- or poly-terpene, a kind of consolidated turpentine, which is the most familiar example of a terpene, the molecular formula of which is $C_{10}H_{16}$. But $C_{10}H_{16}$ is the important constituent of a number of well-known essential oils, as, for example, lemon, lime, lavender, bergamot, celery, laurel, parsley, sage, and thyme, and yet in spite of this molecular identity their properties are, of course, very different. Turpentine, for example, can hardly serve the purpose of a delicate perfume upon the handkerchief is the same way that, say, lavender does. The fact that $C_{10}H_{16}$ is a group common to both clearly does not justify the conclusion that they are available for a similar service. Modern conceptions of the constitution of matter are leaning strongly again to the view that, after all, there is but one prime material out of which all the elements, dissimilar as well as similar, as we know them, have been moulded by processes of strain, temperature, pressure, and so forth from one primordial stuff; and it is conceivable similarly that $C_{10}H_{16}$ can be made the foundation of a series of fabrics differing widely from one another but whose primordial substance after all is $C_{10}H_{16}$. Amongst modern synthetic triumphs is camphor, and here once more we encounter the $C_{10}H_{16}$ group, which is not surprising, since the starting-point of synthetic camphor is turpentine. Recently, again, it has been announced that synthetic rubber has been successfully obtained. Whatever the method is, it is pretty safe to predict that the starting-point of it must be $C_{10}H_{16}$ in some form or another, since rubber is a mere multiplication of this group $(C_{10}H_{16})n$. It is interesting to notice that both turpentine and rubber are natural exudations, the former from coniferous trees and the latter from the latex-yielding trees of South America, Africa, and India. It is evident that Nature elaborates many useful things on the basis of $C_{10}H_{16}$, and modern developments are compelling man to take a deep interest in the constitution of hydrocarbons of that type.

PAROXYSMAL TACHYCARDIA FROM A LESION OF THE AURICULO-VENTRICULAR BUNDLE.

MODERN pathology teaches that lesions of the auriculo-ventricular bundle prevent, partially or completely, the passage of the contraction wave from the auricles to the ventricles, and so produce the form of bradycardia known as heart-block. At a meeting of the Société Médicale des Hôpitaux of Paris recently M. A. Cade and M. J. Rebattu reported a case in which, on the contrary, a lesion of the bundle appeared to cause paroxysmal tachycardia. A woman, aged 71 years, was admitted into hospital. In the previous year she had a "stroke," which was followed by hemiplegia which gradually regressed. During this period she was an in-patient at the Hôtel Dieu, where typical attacks of paroxysmal tachycardia were observed. They began 15 years previously. The attacks commenced suddenly and were marked by a feeling of suffocation, violent palpitation of the heart, and præcordial pains. Often there were associated digestive troubles—constipation, anorexia, nausea, salivation, and furred tongue. The pulse rose to from 170 to 200, but was regular. Auscultation showed well-marked embryocardia. The jugular veins were distended and pulsated visibly. The face was first pale, then sallow. Often the right hypochondrium was tender. The urine was scanty. Some attacks were accompanied by albuminuria, slight œdema of the legs, and pulmonary congestion. The attacks usually lasted some days, and could be cut short by vomiting, spontaneous or induced by the administration of ipecacuanha. In the intervals the pulse was 60 or 70, and auscultation of the heart revealed nothing. The radial arteries were tortuous, the arterial tension was raised, and aortic pulsation was visible in the suprasternal fossa. The patient died suddenly during an attack. The necropsy showed pleural adhesions and old tubercles at the apices of the lungs. The kidneys were of normal volume, their surfaces were slightly granular, and their capsules were adherent. The liver was slightly indurated. The heart was large and weighed 425 grammes. There were some patches of atheroma on the aortic valves, and the mitral valve and aorta were very atheromatous. In the right lenticular nucleus was an ochreous focus, the remains of an old hæmorrhage pressing on the internal capsule. There were no lesions of the mediastinum to suggest pressure on nerves. Microscopic examination showed well-marked lesions of the auriculo-ventricular bundle. It was in great part converted into fibrous tissue, and the muscular fibres which remained were

degenerated. Further, the bundle showed signs of recent inflammation in the form of an abundant infiltration with leucocytes. The pathology of paroxysmal tachycardia is obscure; no constant changes have been found to account for it in the cardiac muscle, ganglia, or nerves. It has generally been attributed to some disorder of cardiac innervation. When bradycardia was shown to be due to destruction of the auriculo-ventricular bundle the question naturally arose, Is paroxysmal tachycardia due to its irritation? The first observations on the point were made by Dr. James Mackenzie, who found in one case obliteration of the nutritive artery of the bundle with alteration of the latter, and in another fibrosis of the sino-auricular node. In a case recorded by Vaquez and Esmein a recent lesion—infiltration of the bundle with embryonic cells—was found. These "choked" the muscular fibres, causing degeneration of some of them. M. Cade and M. Rebattu concluded that paroxysmal tachycardia is due to abnormal irritability of the auriculo-ventricular bundle, which may be purely functional or provoked by lesions. In favour of this view was the fact that in some cases in the intervals between the attacks extra-systoles originating in the auriculo-ventricular bundle had been observed. Paroxysmal tachycardia might thus be regarded as an aggregation of extra-systoles. Moreover, a lesion which irritated the bundle might be expected in time to diminish or abolish its conductivity and produce bradycardia. Of this there was clinical evidence, for cases had been recorded in which tachycardia has ended in bradycardia or alternated with it.

RAT-BITE DISEASE.

THE curious condition known as rat-bite disease, or rat-bite fever, attracted some attention in this country two years ago, when Dr. T. J. Horder published an account of three cases in the *Quarterly Journal of Medicine*, and Dr. G. S. Middleton described a fourth in these columns.[1] Up to that time almost the only researches into the disease had been carried out in Japan, where it would seem that opportunities of clinical observation are much more numerous than in any other civilised country. In a critical review of the subject by Dr. F. Proescher, which is published in the last volume of *International Clinics*, a full summary of the now somewhat extensive literature is given, together with the account of a case which was investigated by him with exceptional care and thoroughness. Rat-bite fever is an infective disease *sui generis* transmitted through the bite to human beings; it is probably a primary disease of the rat, comparable with hydrophobia, which is primary in canines. The bite is not constantly, but is very often, followed by the disease, which is endemic only in Japan and sporadic in China; elsewhere it is rare, or at any rate seldom recognised. Experimentally Dr. Proescher has transmitted the disease to animals (guinea-pigs), and he states that Ogata has done the same. The latter has described an organism allied to the neosporidia, which he thinks is the specific cause of the disease; Dr. Proescher did not encounter it, but found the excised tissues from around the bite upon his patient to be full of an organism somewhat resembling that of hæmorrhagic septicæmia. He also found the same organism in smaller numbers in some of the guinea-pigs to which he succeeded in communicating the disease clinically. Middleton's diplococcus he regards as a secondary infection, and he makes the same suggestion with regard to Ogata's protozoon, subject to the proviso that the Japanese fever differs in several respects from that in other countries and may not be the same disease. The incubation period of rat-bite fever is variable, with or without prodromata. The initial symptoms are usually chills, pyrexia, and painful inflammatory reaction at the site of the bite, which has generally healed. Vesicles and pustules then form at this site and occasionally the tissues become gangrenous. A lymphangitis develops, with swelling of the proximal glands. The constitutional symptoms include malaise, weakness, nausea, headache, anorexia, thirst, articular and muscular pains, sweats, and in rare cases delirium, hallucinations, coma. Death sometimes results, but only after several months of progressive cachexia. The liver and spleen are not enlarged, nor has icterus been reported; loss of reflexes, with sensory and motor paralysis, is often present in serious cases. The treatment recommended includes cauterisation and disinfection of all recent rat-bites, and in the case of the developed disease excision of the wound or cicatrix. Other symptoms are to be treated as they arise, for at present there is no specific remedy; a liberal and nourishing diet is an essential part of the treatment.

[1] THE LANCET, June 11th, 1910, p. 1618.

AMŒBIC DYSENTERY.

IN the biological laboratory of the Bureau of Science at Manila (*vide* the *Philippine Journal of Science* for October last), Dr. Ernest Linwood Walker has recently been making a comparative study of the amœbæ discovered (1) in the water-supply of the city of Manila, (2) in the intestinal tract of healthy individuals, and (3) in the alimentary canal of patients attacked by amœbic dysentery. Some of the results of this important inquiry help us towards a better understanding of the etiology of this disease. It was found by Dr. Walker that the amœboid organisms in the town's public water-service belonged to the genus amœba (Ehrenberg), as also did those which could be cultivated from the bowel discharges of healthy persons, or of those suffering from amœbic dysentery. The cultivable species of the genus amœba are not, however, according to this investigator, parasitic in the human intestinal tract; when obtained in culture from that source they are probably, he thinks, derived from cysts of amœbæ which have been ingested with water or food, and which have passed through the alimentary canal. The amœboid organisms which are parasitic in the intestine of man belong to a distinct genus, the entamœba (Cassagrandi and Barbagallo); they are, in Dr. Walker's opinion, strict obligatory parasites, and are incapable of multiplication outside the body of their host, nor can they be cultivated on Musgrave and Clegg's medium. One non-pathogenic species of the genus entamœba is recognised by Dr. Walker—namely, E. coli (Schaudinn)—which includes E. nipponica (Kordzumi), and which develops cysts containing eight nuclei. Another species of entamœba—namely, E. histolytica (Schaudinn), is presumed to be pathogenic, and includes E. tetragena (Viereck); it develops cysts containing four nuclei. A differential diagnosis of an infection with E. coli and one with E. histolytica can, according to Dr. Walker, be made with the microscope, and such infection in either case must always come directly or indirectly from a previous case. Water or uncooked food can transmit amœbic dysentery only after contamination with fæcal matter from a person suffering from the disease. It is important in this connexion to note that infection with E. histolytica may persist for an indefinite period after the symptoms of amœbic dysentery have disappeared, during which time the resistant encysted entamœbæ may be passed in large numbers in the stools and in this way become a grave source of infection to other persons. Such instances are to be regarded as carriers of amœbic dysentery, and are comparable with the recognised carriers of enteric fever or cholera. The prophylaxis of amœbic dysentery is sufficiently indicated in what has been already stated. The measures to be employed should obviously be the same as those which

are employed to prevent the spread of other specific infectious diseases of the intestinal tract, more particularly enteric fever and cholera. Dr. Walker is now engaged in carrying on an experimental study of the parasitism and pathogenicity of the species of the genera amœba and entamœba established by his present study. The results of this further research will be presented in another paper, and will in all probability be published in a future number of the *Philippine Journal of Science*.

CURIOUS CASES OF INCOMPATIBILITY.

IN a recent issue of an American pharmaceutical journal attention is drawn to the fact that an incompatibility between a medicine given internally and one applied externally may cause undesirable epidermal manifestations. Reference is made to a case in which hydrogen peroxide was applied externally, while potassium iodide was given internally. The result was a severe burning of the skin, the cause of which was not discerned for some little time. In another instance a colourless tincture of iodine, taken internally, in conjunction with an ointment of ammoniated mercury, externally applied, caused severe irritation of the skin, which was attributed to the toxic action of mercuric iodide. Other illustrations might be given of the importance of avoiding such cases of incompatibility. Thus, sulphur given internally and a solution of mercury used externally may be expected to cause a deposit of black mercuric sulphide in the skin These instances are of great interest to physicians as they afford an explanation of phenomena which might sometimes be attributed to idioscyncrasy or some other cause, except the right one. Within the last few months an interesting case arose at St. Paul, Minn. A lady had used a certain advertised face-cream for the purpose of removing freckles, and she was horrified to find that her face became variegated in colour from yellow to brown and then to black. Since many creams of this nature contain some form of mercury it is probable that the trouble was caused by a chemical reaction between the ingredients of the cream and some medicinal substance she may have been taking at the same time. These illustrations emphasise the danger of indiscriminate self-medication; they further show that care should be taken not to use mercurial creams when undergoing certain courses of internal medication. The apparently harmless sulphur lozenge or compound licorice powder may cause much chagrin and discomfort, if not danger, when taken into the system at a time when a favourite brand of toilet cream is being used to beautify the complexion.

AORTIC ANEURYSM MISTAKEN FOR ASTHMA.

IN the *Interstate Medical Journal* for January Dr. Solomon Solis Cohen has published a note on two cases of aortic aneurysm, in which the unusual mistake was made of diagnosing asthma. Both patients were syphilitic labourers who were suddenly attacked with dyspnœa, which was the only symptom. The ordinary signs of aneurysm—pulsation, thrill, and bruit—were wanting. There was constant dyspnœa with paroxysms of increased distress accompanied by sonorous and sibilant râles. The patients were sent into hospital with the diagnosis of asthma. They sat upright in bed, labouring for breath, with marked suprasternal recession in one case and supraclavicular recession in the other. There was laryngeal stridor; in the former case loud, and both inspiratory and expiratory; in the latter, low and expiratory only. In both cases the vessels of the neck throbbed violently and the jugular veins were much distended. In the former case there were attacks of syncope. In both cases Dr. Cohen made at sight the diagnosis of obstructive dyspnœa, possibly aneurysmal. Careful physical examination revealed limited dulness beneath the manubrium sterni—in the former case, of about the size of a shilling; in the latter, of a dollar, and therefore extending somewhat to the right and left of the bone. In neither case was any thrill, bruit, or pulsation detected, nor did the laryngoscope show anything. In both cases a skiagram revealed a shadow above the heart, which was interpreted as a dilated aortic arch pressing upon the root of the trachea. In the former case the shadow was small and circular; in the latter, large and somewhat pear-shaped. The former patient died, and the necropsy showed a sac more than an inch in diameter, of which tough clot and the anterior wall of the trachea formed the posterior wall, while it communicated by a small opening with the transverse arch. What makes the cases worthy of record is that sudden dyspnœa was the sole symptom; the ordinary signs of aneurysm were wanting; and incidentally to the constant dyspnœa paroxysms of increased distress, with wheezing and râles, misled the medical attendants to a diagnosis of asthma. But the suprasternal recession and stridor, indicating obstruction of the larynx or trachea, were incompatible with asthma. The possibilities were mediastinal growth or gumma, enlarged bronchial glands, peritracheal abscess, and aneurysm pressing on the air passages.

THE TREATMENT OF GONORRHŒAL CONJUNCTIVITIS WITH STEAM.

A NOVEL and somewhat drastic method of treating gonorrhœal conjunctivitis has lately been advocated by Dr. W. Goldzieher in the *Wiener Klinische Wochenschrift* (November, 1911). The procedure is based on the facts that the gonococci are rapidly killed by a temperature slightly exceeding that of the normal body temperature, and that they are situated in the epithelial layer of the conjunctiva, their presence in the subepithelial layer being of rare occurrence. As compared with the mucous membrane of the male urethra, the conjunctiva is superficial and easily exposed, and it therefore lends itself to local treatment by heat. Dry heat is liable to injure the cornea by the withdrawal of fluid, and steam is therefore preferable. It was generated by electricity in a boiler small enough to be as easily manipulated as any other instrument for operations on the eye. Below the tube through which the steam escaped another tube was fitted to catch the drops of condensed steam which would otherwise have scalded the patient's face. The temperature of the steam impinging on a screen at a distance of 4 centimetres from the mouth of the tube was found to be 113° F. This temperature causes considerable pain, and cocaine is valueless, for it has no influence on the sensations of heat and cold. After a while, however, the treatment becomes so painless that even children stand it easily. No ill-effects resulted from the treatment, but some difficulty was experienced in everting the swollen and brawny upper eyelids, which sometimes required the application of iced compresses to reduce the infiltration. The delay thus caused is not, however, serious, for corneal infiltration or ulceration seldom occurs at this stage. As soon as the eversion of the eyelids is practicable, the conjunctival sac is first syringed with a solution of permanganate of potash, and it is then dried with a strip of gauze, after which the steam is applied. When there is much chemosis, the ocular as well as the palpebral conjunctiva should be steamed, great care being taken to avoid injuring the cornea. The skin in the neighbourhood of the eyes is protected from the steam by layers of linen or wet gauze. In the course of three months 15 cases were thus treated. All these were severe, and in 5 cases ulceration of the cornea existed at the commencement of the treatment. The gonococcus was invariably present, and with the exception of a

boy, 7 years old, all the patients suffered from urethral or vaginal gonorrhœa. The 10 patients whose corneas were not involved at the commencement of the treatment made a rapid and complete recovery, the chemosis and discharge having practically ceased in four days' time. In the case of the 5 patients whose corneas were already involved, the conjunctivitis was cured and was no longer a source of infection to others; and in 1 case complete recovery of the cornea was also effected. Although the steam rapidly reduces the discharge, some conjunctival swelling may persist for a time, as the steam tends to relax the blood-vessels and thus cause passive hyperæmia. It is unnecessary to reduce this swelling by the application of silver nitrate, for syringing with permanganate of potash is sufficient. Comparing the above method with the silver nitrate treatment, Dr. Goldzieher points out that the latter is very imperfect, as it forms a deposit in the epithelium which becomes impermeable, and thus prevents the further action of the nitrate on the deeper layers of the conjunctiva. The gonococci also lurk in epithelial crypts and in the upper fornix where they are difficult to attack with silver nitrate. He, therefore, concludes that his treatment is the better of the two, although it requires considerable technical dexterity. Possibly also cases may exist which are refractory to it.

THE joint meeting of the Surgical, Medical, and Anæsthetic Sections of the Royal Society of Medicine to discuss Partial Thyroidectomy under Local Anæsthesia, with Special Reference to Exophthalmic Goitre, held on Feb. 27th, has been adjourned to a special meeting on Tuesday, March 5th, at 5 30 P.M., at the Royal Society of Medicine, 15, Cavendish-square. Dr. W. J. McCardie, president of the Anæsthetic Section, will be in the chair. The following will take part in the debate: Mr. Charters Symonds, Mr. A. E. Barker, Mr. Donald Armour, Mr. Walter Edmunds, Dr. J. Blumfeld, Mr. C. H. Fagge, Dr. H. J. Scharlieb, Dr. G. A. H. Barton, Mr. Rupert Farrant, and Mr. James Berry.

THE National Organisation Committee for the Berlin Congress of Obstetrics and Gynæcology, to be held in September next, have elected Sir Alexander Russell Simpson, Dr. Macnaughton Jones, and Dr. Herbert Spencer as delegates for the United Kingdom. Dr. Macnaughton Jones has also been appointed *rapporteur* on the subject of the Surgery of the Peritoneum.

Sir Richard Douglas Powell is giving two emeritus lectures to-day, Friday, March 1st, and on Friday, March 8th, at 3 P.M., in the small theatre of the Middlesex Hospital Medical School on the Medical Aspects of Life Insurance.

MEDICAL SICKNESS AND ACCIDENT SOCIETY.—The usual monthly meeting of the executive committee of the Medical Sickness, Annuity, and Life Assurance Society, was held at 429, Strand, London, W.C., on Friday, Feb. 16th. There were present: Dr. F. de Havilland Hall, in the chair; Dr. F. C. Martley, Dr. J. Pickett, Dr. Frederick S. Palmer, Dr. W. Knowsley Sibley, Dr. F. J. Allan, Dr. M. Greenwood, Dr. H. A. Sansom, Mr. J. Brindley-James, Mr. F. S. Edwards, Mr. E. Bartlett, Dr. J. W. Hunt, and Dr. J. B. Ball. The winter season always produces a considerable excess of sickness claims over the summer-time, and in the early part of this year the Medical Sickness Society has experienced a large number of these claims. But although numerous these claims have been for the most part of unusually short duration and have not caused any serious addition to the amount usually expended in this way. The society's business continues to be very successful and the invested reserves now amount to over a quarter of a million sterling. Prospectuses and all further particulars on application to Mr. F. Addiscott, Secretary, Medical Sickness and Accident Society, 33, Chancery-lane, London, W.C.

AN EXAMINATION OF THE MEDICAL PROVISIONS OF THE NATIONAL INSURANCE ACT.

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IV.[1]

The Insurance Act and Public Health.

AS some of the fundamental objects aimed at by the Insurance Act are the reduction in the total amount of disease throughout the country and the establishment of more hygienic conditions among the working classes, it is desirable that the scheme should coöperate with the public health service. Several provisions arrange for this. The association of the Local Government Board with the Commissioners in the administration of sanatorium benefit is an instance. Another is furnished by Section 60, which requires an Insurance Committee to make such reports as to the health of insured persons as the Insurance Commissioners, after consultation with the Local Government Board, may prescribe, and to furnish statistical and other returns. It further empowers the Insurance Committee to make such other reports on the health of insured persons and the conditions affecting them as they think fit. The Insurance Commissioners are required to send copies of these reports to the various county and other councils which appear to be affected or interested. Presumably arrangements will be made for the compilation of reports by persons specially qualified. There is no authority in the Act for imposing the duty of preparing them upon the medical practitioners who are giving attendance and treatment under medical benefit.

The Insurance Committee is also required to make such provision for the giving of lectures and the publication of information on questions relating to health as it thinks necessary or desirable, and may, if it thinks fit, for that purpose make arrangements with local education authorities, universities, and other institutions. This may be a useful provision for disseminating knowledge of hygiene among the working classes.

With a view to promoting co-operation between Insurance Committees and county councils, &c., Section 60 (2) empowers any medical officer of health at the request of an Insurance Committee, and with the consent of the council by whom he is appointed, to attend meetings of the committee and give such advice and assistance as is in his power.

Perhaps the most important provisions from the public health point of view are those contained in Section 63, dealing with the reduction of sickness from preventable causes. Where it is alleged that there is an excessive amount of sickness among insured persons due to the conditions or nature of their employment, or to bad housing or insanitary conditions in any locality, or to an insufficient or contaminated water-supply, or to neglect on the part of any person or authority to observe or enforce the provisions of any Act relating to the health of workers in factories, workshops, mines, quarries, or other industries, or relating to public health, or the housing of the working classes, a claim may be sent to the person or authority in default, for payment of the extra expenditure incurred in consequence. Failing the settlement of such claim an inquiry may be held by a person appointed by the Local Government Board, and if at such inquiry it is shown that the amount of sickness has (1) during a period of not less than three years before the date of the inquiry; or (2) if there has been an outbreak of any epidemic, endemic or infectious disease, during any less period; been in excess of the average expectation of sickness by more than 10 per cent., and the sickness was due to any such cause as stated, the person, company, or local authority responsible is required to make good the extra expenditure which has been caused by the neglect. The effect of these provisions in stimulating negligent local authorities to an efficient discharge of their public health duties may be of considerable value.

But the effect of the Insurance Act upon public health

[1] Articles I., II., and III. were published in THE LANCET of Feb. 10th (p. 383), 17th (p. 447), and 24th (p. 524).

may not be confined to these matters with which its provisions directly deal. An entirely new situation is created from which various evils afflicting the community must be viewed afresh. Take, for example, the question of State action to reduce the transmission of syphilis. It is recognised that the harm done by this scourge is second only to that resulting from tuberculosis itself, and as far back as 1904 the Committee on Physical Deterioration recommended that an exhaustive inquiry should be made into the extent of the malady and the steps that might be taken to arrest its progress. But nothing as yet has been done. It is, of course, a difficult matter to deal with, and the social and moral interests involved demand the fullest consideration. But as the State has now made itself responsible for the treatment of these diseases among insured persons, no fresh principle is involved in instituting such preventive measures as are practicable and desirable. If the new methods of treatment of syphilis should prove to possess all that is claimed for them, the administrative difficulties will be sensibly lightened.

It is to be hoped, too, that the acceptance by the State of these additional responsibilities of a medical character will bring into prominence the necessity for coördination among the various Government departments charged with the administration of matters demanding medical knowledge. At present there are separate medical staffs in the Local Government Board, the Home Office, the Board of Education, the Registrar-General's Office, and other departments, each independent and uncoördinated with the others. There is not even uniformity in so fundamental a matter as the classification and nomenclature of disease. Different departments divide the country up into different areas, so that for local purposes the value of their statistics is seriously diminished. Specialisation of function leads to neglect of interests on the one hand and overlapping on the other. In 1910 four separate departments of State dealt specially with tuberculosis in their reports and three with infant mortality. Ardent reformers have long dreamed of the establishment of a public health department which should manage all the various medical services now scattered through so many offices, and have at its head a Minister of Cabinet rank. The realisation of such a project is brought sensibly nearer by the Insurance Act.

The Future of Medicine under the Act.

A note of warning has been sounded by Sir Clifford Allbutt concerning the influence of the Insurance Act upon the future of medicine. In the *Times* of Jan. 3rd the eminent professor called attention to the fact that many of the men who are now entering medical practice are trained in highly scientific methods for the diagnosis and treatment of disease. They are versed in the new pathology of the blood; can make bacteriological examinations; investigate the morbid characters of secretions; and employ with skill the instruments of precision which science has given to medicine. Sir Clifford Allbutt points out that modern treatment depends increasingly upon accuracy of diagnosis which can only be attained by the use of such methods. He takes as an instance the diagnosis of a syphilitic aneurysm in the chest, which has been recognised by a laryngoscopic examination of the throat revealing paralysis of a vocal cord, and confirmed by the performance of a Wassermann test. Such proceedings demand time and money, and he asks if they are to be denied to the poor countryman who is able to do some work and cannot spend all his time in a hospital.

Sir Clifford Allbutt writes as though these advantages were at present at the service of the working-class, which is certainly very far from being the case. No medical man would attempt to defend the conditions under which much of the medical attendance among the poor is given. And is his view justified that the conception of medical treatment in the Act is the old-fashioned one of the village club which prescribes drugs and mixtures for all diseases? Do not the clauses in Section 16, empowering the Insurance Commissioners to retain certain sums of money to be applied in accordance with their regulations for the purpose of research, bear witness to the fact that the development of the scientific side of medicine has not been lost sight of? The amount available under these clauses will be about £60,000. The same may be said of the sections already quoted, providing for the giving of lectures and linking the scheme up with the universities and other educational centres.

But looking at the matter from a broad point of view, is it likely that so important a consideration will be neglected in a service which contains representatives of the medical profession upon practically every governing body? It is, indeed, essential in order to secure the objects aimed at by the Act, that the most modern and complete methods of diagnosis and treatment should be available, and in the long run their provision will make for economy. The matter is undoubtedly one which lies very much in the hands of the protession itself. Only medical men can judge what is required, and it is for them to formulate their demands. The lay authority which deliberately ignored the expressed opinion of the profession, that the service did not provide for up-to-date methods of diagnosis, would incur a heavy responsibility. It would be out of place here to consider what should be provided or how it should be done, but one suggestion may be put forward. Many of the special methods of investigation require a laboratory for their performance. There is nothing in the Act to prevent the establishment by the Commissioners in every district of a clinical research laboratory, whether in association with an anti-tuberculosis dispensary or not. In these laboratories local practitioners could either make their own investigations or have them performed for them by skilled pathologists.

The "Six Points."

Although the situation as regards the "six points" has been modified it is worth while bringing forward some considerations respecting them, since the opinion is largely held that they should have been embodied in an Act of Parliament or guaranteed by the regulations before further steps were taken by the profession. Perusal of the six points soon leads to the conclusion that such a course as that proposed could not be followed until the meaning of some of them at least has been much more clearly defined. Indeed, the impression is created that they were never intended to become statutory in their present form, but merely to serve as a basis for discussion.

The first is the demand for "an income limit of £2 a week for those entitled to medical benefit." It is clear that this does not express what the profession really wants. There is no objection to a person with any income receiving medical benefit so long as it takes the form of a cash contribution to one possessing means over a certain limit. It is the medical treatment of such a person at a fixed fee that is resented. The administrative difficulties in the way of dealing with this matter by Act of Parliament have probably been overlooked. No time over which the average is to be calculated is specified. Suppose a man is working for one period for one employer at a certain rate, is out of work for a time, and then works for another at a different rate, upon what principle is his weekly income to be calculated? What, moreover, is income? Are the earnings of a wife or child to be included, or the rent received from letting a room to a lodger? How is the information to be obtained from illiterate persons? The clerical staff required to make these assessments and the expense of so doing would be enormous.

The above difficulties apply with far less force to the modified powers of fixing an income limit given to the Insurance Committees. There is a great deal of difference between the rigidity of an Act of Parliament and the elasticity of regulations which can be modified according to person and circumstance. In some cases, for instance, medical committees may be content to accept average wage instead of income, an easier thing to assess. In other cases they may be satisfied with a simple declaration by each insured person, accompanied by a right on the part of the medical committee to investigate the circumstances of any person who is believed to have an income exceeding the amount agreed upon. It may be said that such a right is all it is sought to embody in an Act, but then it ceases to be the "point," and the demand is that the point shall be agreed as a preliminary to discussion.

Free choice of doctor and administration of medical benefit have been considered.

The fourth point requires the method of remuneration of medical practitioners adopted by each Insurance Committee to be according to the preference of the majority of the medical profession in the district of that committee. The same result can be achieved by the profession without further action either by Parliament or the Commissioners. In any district the practitioners on the panel can pool the amount or

amounts received from the Insurance Committee and distribute the total among themselves upon any principle they please. Such a system is in force in some parts of Germany and is said to work satisfactorily.

The fifth point runs, "Medical remuneration to be what the profession considers adequate having due regard to the duties to be performed and other conditions of service." The briefest consideration will show that this requires a great deal of discussion before it could be incorporated in an Act of Parliament or in regulations. What, for this purpose, is the profession? Does it mean every man on the Medical Register, or only those who are in practice, or those who are going to undertake medical treatment and attendance under the Act? How are the duties and conditions to be known until the regulations are framed? What meaning is to be attached to the word adequate? Finally, how can any scheme with financial provisions be based upon so vague a foundation as that "remuneration is to be adequate"? In a draft amending Bill which has been published this point has been dropped and a minimum capitation fee named instead. But there is no evidence that this represents the opinion of the "profession," or that it is "adequate."

Similar criticisms apply to the last point, which asks for "adequate" medical representation on the various controlling authorities.

The position is now governed by the resolution of the Representative Meeting on Feb. 21st, instructing the Council to require that "the minimum demands of the British Medical Association be embodied in the regulations to be issued by the Commissioners in such a manner as shall be effectual and permanent, with a view to having the same embodied in an amending Act." With this must be coupled the resolution providing for medical representatives to be appointed on the Advisory Committee which is to assist the Commissioners in framing the regulations. The significance of the change from "six cardinal points" to "minimum demands" in the first resolution is not quite clear, and it is impossible to tell from the published report of the meeting which of the numerous resolutions of varying importance and embodying new as well as old principles are to be regarded as containing minimum demands, and which are not. Until this is determined, criticism must be withheld.

Dispensing.

But one new principle deserves considering on its merits, without prejudice to the question of its inclusion in the minimum demands. This is contained in the resolution:—

> That dispensing, as hitherto, should be done or arranged for by the medical practitioner for his own patients should he so desire, and paid for at the scale of tariff rate agreed upon for pharmacists by the Pharmaceutical Society.

The section in the Act dealing with dispensing by medical men is contained in 15 (5) ii., which runs: "Except as may be provided by regulations made by the Insurance Commissioners no arrangement shall be made by the Insurance Committee with a medical practitioner under which he is bound or agrees to supply drugs or medicine to any insured persons." It will be seen that while the prohibition is general the Commissioners can modify it by regulation. Whether they can go so far as to permit dispensing by every practitioner who wishes to do so is open to question.

Drugs and medicines are to be provided by persons and firms who have agreed to do so according to such scale of prices as may be fixed by the Insurance Committee under regulations made by the Commissioners. There is nothing in the Act requiring the Insurance Committees or Commissioners to agree with the Pharmaceutical Society, and there has been no published intimation that the Society would accept the duties imposed upon it by the above resolution.

The value of retaining the right to dispense has perhaps been exaggerated. In computing the amount he will receive out of an inclusive capitation fee, a medical man is apt to deduct the amount which will go to the chemist, and forget to add his own saving on drugs. What will really be lost is the retail chemist's profit, and this is not likely to be excessive. Against this must be placed the work and time that will be saved. Moreover, dispensing under the Act will not be quite so simple as in private practice. A Government department spending public money must employ business methods, and presumably some system of requiring vouchers, &c., for expenses will be established. This will necessitate the keeping of separate dispensing accounts for insured and private patients.

Perhaps the most important consideration is not in relation to the Act but to the position and status of the profession in the future. The evils resulting from unqualified practice have been repeatedly pointed out, and one result of the Insurance Act will be to strengthen the position of the profession in demanding that this abuse be suppressed. One of its most insidious forms is prescribing by chemists. If the profession, in the matter of dispensing, places itself in precisely the same position as retail chemists, it will weaken its demands that the latter shall not undertake the functions of doctors.

Other Suggestions.

In the course of these articles some suggestions have been made of provisions which might reasonably be incorporated in the regulations. It may be convenient to summarise these:—Every insured person, whether a member of an approved society or deposit contributor, to be medically examined before being accepted for treatment at ordinary rates. Special remuneration to be paid for the treatment of bad lives, and for operations, consultations, and other "extras" by agreement. A special fee to be paid to medical men called in under the Midwives Act of 1902. Medical attendance and treatment not to include the giving of certificates for the purpose of administration of sickness and disablement benefit. Medical practitioners to be remunerated from sanatorium benefit for the special treatment of cases of tuberculosis. All complaints of unsatisfactory attendance by medical practitioners on the lists to be submitted in the first instance to the medical committees. The committees also to have the right of investigating cases of alleged malingering by insured persons. Facilities to be given for the application of modern methods of diagnosis and treatment. Patent and proprietary drugs not to be prescribed.

The Medical Profession and the State.

Whatever the final result may be, it is a matter for profound regret that the agitation of the last nine months should have arisen. Members of a profession, justly renowned for its altruism, cannot but deplore that circumstances should have forced them to take up an attitude of hostility towards a measure designed for the benefit of the sick. But the present position is not a new one. The Insurance Act affords the latest instance, and one on a large scale, of the unsatisfactory way in which matters demanding medical knowledge have been dealt with by the State. In some cases, as, for example, the Midwives Act and the Notification of Births Act, the interests of the profession have been neglected. More important are the cases in which the community has suffered. It would seem as though in dealing with matters demanding medical knowledge Parliament does not always grasp the importance of familiarity with the conditions under which that knowledge is to be applied, and the necessity of giving to scientific men the power of dealing with questions involving scientific principles. Many instances might be cited, but two will suffice. Consider the efforts which have been made to secure the purity of foodstuffs. Since 1875 there have been at least 12 Acts or amending Acts dealing with specified foods or foodstuffs generally, as well as Public Health Acts and Local Government Acts dealing with them incidentally, yet many of the commonest foods are adulterated or contain injurious preservatives. This is in part due to a system which may call upon a lay sanitary authority, bench of justices, or stipendiary magistrate to decide whether or not a particular substance is injurious to health, and other questions involving knowledge of chemistry, physiology, and hygiene. The Workmen's Compensation Act provides another instance. The statutory provisions enabling purely medical questions to be determined by medical men are so hedged in by restrictions as to be largely ineffective, and county court judges have frequently to decide between conflicting medical evidence and to exercise knowledge of medicine and surgery.

Perhaps even more serious is the indefinite postponement of important recommendations. Fifteen years ago a Select Committee on the Registration and Certification of Death pointed out the dangers of the present system and advised drastic alterations in the law, but no Government action has yet been taken. The failure to act upon the recommendation of the Committee on Physical Deterioration that the prevalence of syphilis should be investigated is another instance. But the most striking illustration is afforded by the Insurance Act itself. One of the difficulties confronting the actuaries was the scanty knowledge available of sickness rates, and

some of their estimates are only approximations in consequence. Yet the above-mentioned Committee recommended in 1904 "as in the highest degree desirable" that a Register of Sickness should be established and maintained. Such a Register now would be of the greatest value.

It is possible that this unfortunate state of affairs arises partly from the fact that the medical profession is so poorly represented in the legislature. Out of 670 Members of the House of Commons, there has never at any time been more than a handful of medical men. There have only been one or two in the minor posts of the Government, and there has never been a medical man in the Cabinet or at the head of an administrative department. Contrast this with the conditions in France, where last year in the legislative body 59 deputies, 37 senators, and two Ministers of State were members of the medical profession; or with the legal profession in this country, which has something like 150 members in Parliament.

The absence of medical counsel in public affairs is a serious drawback, for the medical man is peculiarly fitted to take part in social legislation. Unlike the lawyer, who venerates precedent, his training teaches him to look forward and welcome progress. His experience familiarises him with the conditions of life among the poor and gives him a knowledge of human nature. It is permissible to hope that the Insurance Act will at least have the effect of bringing to the medical profession a stronger sense of its civic duties and opportunities.

For matters of moment remain to be dealt with. In the future, steps must be taken to suppress the evils resulting from the operations of cancer curers, consumption specialists, and quacks of all kinds. The indiscriminate sale of worthless or harmful proprietary medicines to the ignorant poor, and the anomaly whereby a State which declares abortion to be a crime derives part of its revenue from the sale of abortifacients, call for suppression. The fourteenth century procedure of the coroners' courts, which allows a layman assisted by a jury of working men to determine whether an anæsthetic was necessary and was duly and properly administered, must be changed. More scientific methods are required in apportioning responsibility for crime. The problems of the feeble-minded and the inebriate will only be solved by the aid of medical science. The medical profession has a great past and noble traditions; it must look forward to a greater future and the playing of a more active part in the life of the nation.

ANNUAL REPORT OF THE PRESIDENT OF THE LOCAL GOVERNMENT BOARD.[1]

ALTHOUGH this report is mainly concerned with Poor-law administration Mr. John Burns takes occasion to discuss many subjects of which the bearing is definitely medical, and which therefore deserve consideration in our columns.

It is matter for congratulation that the decrease in pauperism reported in 1909 has since been fully maintained. Comparing the total number relieved on New Year's Day, 1910, with the corresponding facts for 1911, we learn that there was a decrease at the latter date amounting to 4·7 per cent. From comparative statistics it appears that whilst the ratio of pauperism to population did not exceed 24·5 per 1000 in the county of Carmarthen and 24·6 in Worcester, it amounted to 41·3 per 1000 in the county of Anglesey. On Jan. 1st, 1911, the average rate of pauperism to population in England and Wales was 24·9 per 1000. This rate is lower than any of the rates for the corresponding dates in the previous nine years.

Old Age Pensioners.

In the course of the year under notice 5077 persons, mostly men, aged 70 years or upwards, became old age pensioners, and consequently ceased to be chargeable to the guardians as paupers.

Insane Paupers; The "Won't Works."

In certain respects the records of pauperism are unsatisfactory. In the first place, the number of insane poor returned by the Commissioners in Lunacy still continues to show a steady increase; secondly, the adult able-bodied paupers, the "won't works," relieved during the parochial year ended Lady Day last, were more numerous than in any previous year, with the single exception of 1910; and, thirdly, it appears that in the course of last year 552 casual paupers were convicted under the Vagrancy Act, the majority either for refusing to perform the prescribed task of work or else for absconding.

Boarding-out of Pauper Children.

Although in recent years the number of children supported out of the rates has somewhat increased, nevertheless, when compared with the number similarly circumstanced 25 years ago, there has been in later years a considerable decrease. It is gratifying to learn that in the year 1910 nearly two-thirds of the pauper children in England and Wales were supported in institutions other than workhouses and union infirmaries. In the course of the last decade the number of children boarded out has risen from 7547 in the year 1901 to 9669 in 1911. On the first day of the last-mentioned year the total number of children of school age (3–14 years) maintained at the public expense was 45,605, only 312 of whom were educated in "workhouse schools," which, accordingly, may now be said to have practically ceased to exist. Almost all the pauper children are educated in public elementary schools approved for that purpose by the Local Government Board.

Emigration of Pauper Children.

The practice of sending to Canada orphan or deserted pauper children has been continued during the year with the happiest results. The reports of the Dominion immigration officers received through the High Commissioner for Canada show that the 2000 English emigrant children now resident in Canada are generally doing well, and that only in rare instances is the desire expressed for return to their native land. In this connexion an extract is inserted from the report of Mr. F. G. A. Butler, chairman of the Emigrant's Information Office, respecting his inspectorial visit to Canada in 1909. Commenting on this document, Mr. Burns remarks that "Mr. Butler's references to the high appreciation shown by the Canadian authorities of the work of the guardians in the emigration of children, and of the value to Canada of the children so emigrated, afford us (the Local Government Board) much satisfaction."

Medical Relief.

Of the total sum expended annually on Poor-law relief about one-fifteenth part is accounted for under the head of "medical relief." Some idea of the extent to which institutional treatment is accepted by the indigent poor may be gathered from the fact that on Jan. 1st, 1911, nearly 34 per cent. of the aggregate of indoor paupers were provided for in Poor-law infirmaries or hospitals. Compared with earlier years much greater attention is now given by guardians to the perfecting of arrangements for nursing sick paupers both in infirmaries and at their own homes; and the number of nurses employed in Poor-law institutions has risen from 4106 in the year 1897 to 7277 in the year last ended. This large accession to the nursing staffs has been due to general improvements in the service rather than to the numerical increase of patients. In only a few instances are nurses employed for exclusive attendance on paupers at their homes; on the contrary, the Board encourages the guardians to subscribe to nursing institutions, and this practice is now annually becoming more general throughout the country.

Care of the Insane; Training of Idiots.

The total number of paupers classed as insane was 118,864, of whom 53,318 were men, 63,160 women, and 2386 children. Of this total, 94,985 were supported in county and borough asylums, 7041 in imbecile asylums, and 12,117 in workhouses—the remaining 4721 being included among outdoor paupers. The average daily number of imbeciles under the care of the managers of the Metropolitan Asylums Board was 6843, of whom 38 were children under 5 years of age. Of the remainder, 212 were over 70 years old, and of these no fewer than six had passed their ninetieth birthday. During the year a certain number of idiots were removed from workhouses and placed in separate institutions provided for the special care and training of idiots, or in institutions registered under the Act of 1886 for the reception of idiots and imbeciles.

[1] Fortieth Annual Report of the Local Government Board, 1910-11, Part I. Wyman and Sons. Price 1s. 2d.

Work of the Metropolitan Asylums Board.

For the classification and treatment of mentally defective children the managers of this Board are at present considering an improved scheme. The number of such children under their care at the end of the year was 331, including a number received in childhood but since passed into adolescence. By the conversion of one of the Board's fever hospitals, the "Park" hospital, near Lewisham, the accommodation for sick and debilitated children was substantially increased last year. The total number of children admitted to this hospital or to the institution near Carshalton was 2485. In the board's ophthalmic schools 682 patients were admitted. The admissions to the ringworm school were 1019, the average duration of treatment there being 3·7 months per case. The Board's seaside homes provided a temporary residence for 942 children in the course of the year.

Maternity Department.

Particulars are given respecting 4493 mothers who were admitted to the maternity wards in the course of the year, showing that the number who died either in the wards or after discharge to the infirmary sick wards was 39, this number including all deaths, whether or not they were primarily due to childbirth. In many cases the deaths were attributed to causes not primarily due to childbirth. In 19 out of the 39 cases the mother did not come into the hospital until the actual day of delivery, or else she was admitted whilst in labour; and in four other cases the child had been born before admission of the mother. It should further be stated that in a large proportion of the cases the mothers who died were very seriously ill, and in some cases actually moribund, on admission.

The tables accompanying this section of the report show the number and causes of death of infants which occurred in the maternity wards during the first and second weeks of life. From these tables we learn that the percentage of children who died in the maternity wards within the first two weeks of life is higher than in the general population. But this is probably due to pre-natal and maternal conditions entirely unconnected with, and independent of, the character of the administration of the lying-in wards. The character of the parents and the conditions in which they have lived are the dominating factors in determining the death-rate. Thus we find that of the 142 deaths in the first week of life 81 were due to premature birth, 46 to congenital defects, atrophy, &c., and 15 to other causes.

PRINCESS ALICE MEMORIAL HOSPITAL, EASTBOURNE.—The committee of the Princess Alice Memorial Hospital, Eastbourne, at the annual meeting of the governors on Feb. 23rd, recorded with very great regret the retirement of Dr. T. Macqueen, Dr. A. P. Sherwood, and Mr. H. D. Farnell from the medical staff, of which they had been members since the foundation of the hospital nearly 29 years ago. Mr. Farnell was the last retiring member of the original medical staff, and to him and the other retiring members the committee felt that not only the hospital authorities, but the whole town of Eastbourne and its neighbourhood, owed a debt of gratitude which could never be adequately repaid. A vote of thanks was accorded Mr. Farnell, who, in responding, mentioned that of the acting staff originally appointed all were alive to-day with the exception of Dr. Hayman. It was announced at the meeting that it had been decided to give a complimentary dinner to the retiring members of the staff on March 16th, and that the Duke of Devonshire would take the chair. By Mr. Farnell's retirement all the original members of the medical staff of the hospital are now superannuated. A new wing at the hospital, to contain 20 beds, is in the course of erection, and with the addition, if sufficient funds can be raised, of a nurses' home to be built in the hospital grounds, will form the Eastbourne memorial to King Edward VII. When the new wing is completed and in working order additional annual subscriptions to the amount of £1000 will be required, and the committee is appealing for new subscribers. So far as Eastbourne is concerned the committee has not found a withdrawal of subscriptions owing to the Insurance Act, but that owing to an energetic canvass the subscriptions were showing a considerable increase, yet hardly up to expectations.

SEVENTEENTH INTERNATIONAL CONGRESS OF MEDICINE.

A MEETING of the Organisation Committee of this Congress was held on Monday afternoon, Feb. 19th, in the Library of the Royal College of Physicians of London, the President of the Congress and of the College being in the chair. Forty-two members were present.

The minutes of the last meeting, which were published in THE LANCET and *British Medical Journal* of July 22nd, 1911, were confirmed.

It was reported from the Executive Committee—(1) that H.R.H. Prince Arthur of Connaught had consented to open the Congress; (2) that certain additional vice-presidents of the Congress and officers of the sections would be elected; (3) that Dr. Clive Rivière, secretary of the Reception Committee, had been elected to the Executive Committee; (4) that the following had been invited to give general addresses: Professor Chauffard in medicine, Professor Harvey Cushing in Surgery, and Geheimrat Professor Paul Ehrlich in pathology, and that they had all accepted; (5) that a circular invitation with lists of sections and principal officers of Congress, rules of Congress, rules of sections, and form of application (published in THE LANCET and the *British Medical Journal* of Jan. 6th, 1912) had been issued by post to 6600 medical men throughout the world, and that abridged notices had appeared in a large number of foreign medical journals; (6) that at a meeting of officers of sections the following programme of discussions had been drawn up, subject to alterations if necessary;—

PROVISIONAL PROGRAMME OF SUBJECTS FOR DISCUSSION.

Section I.—Anatomy.

1. The Excitatory and Connecting Muscular System of the Heart (jointly with III., 2). 2. The Morphology of the Sympathetic System. 3. The Early Stages of the Human Ovum. 4. Cerebral Localisation and the Precise Significance of Sulci. 5. The Morphology of the Shoulder Girdle.

Section II.—Physiology.

1. Internal Secretions (jointly with VI., 1). 2. Reciprocal Innervation. 3. Endogenous Metabolism of Proteins (jointly with III. (a), 5).

Section III.—General Pathology and Pathological Anatomy.

1. The Pathology of Shock. 2. The Excitatory and Connecting Muscular System of the Heart (jointly with I., 1). 3. Grafting of Normal Tissues as Dependent upon Zoological or Individual Affinity; Autoplastic, Isoplastic, Heteroplastic. 4. The Pathology of Fats and Lipoids. 5. The Effect of Radio-active Substances and Radiations upon Normal and Pathological Tissues.

Subsection (a).—Chemical Pathology.

1. Pathological Conditions due to Defects in Diet. 2. Clinical Applications of Pathological Chemistry. 3. The Chemical Pathology of the Alimentary Tract 4. Cancer (jointly with IV., 3). 5. Endogenous Metabolism of Proteins (jointly with II., 3).

Section IV.—Bacteriology and Immunity.

1. Theories of Immunity and Anaphylaxis. 2. Nature of Virulence. 3. Cancer (jointly with III. (a), 4). 4. Filter Passers. 5. Leprosy and Allied Bacilli.

Section V.—Therapeutics.

1. On the Comparative Value of the Cardiac and Vascular Remedies in Common Use. 2. The Mode of Action and Uses of Remedies for Pain or Sleeplessness. 3. Chemical Toxines and Antitoxines. 4. A Laboratory Meeting. 5 A Discussion upon a subject relating to Balneology or Physio-Therapy.

Section VI.—Medicine.

1. Correlation of Organs of Internal Secretions and their Disturbances (jointly with II., 1). 2. Differentiation of the Chronic Arthrites. 3. The Pathology of Heart Failure. 4. Diabetes. 5. The Clinical Aspects of Hæmolysis.

Section VII.—Surgery.

1. The Operative Treatment of Malignant Disease of the Large Intestine (excluding the rectum). 2. The Treatment of Tumours of the Brain, and the Indications for Operation (jointly with XI., 5). 3. Intrathoracic Surgery. 4. The Treatment of Early Renal and Vesical Tuberculosis (jointly with XIV., 1). 5. The Surgery of the Arterial System.

Subsection (a).—Orthopædics.

1. The Treatment of Spastic Paralyses. 2. The Treatment of Scoliosis. 3. Radiography of Bones and Joints, and its value in Orthopædic Surgery (jointly with XXII., 5). 4. The Treatment of Ankylosis. 5. The Treatment of Tuberculous Joints in Childhood. (To be on a different day from X., 3).

Subsection (b).—Anæsthesia.

1. (*a*) Recent Methods of Producing Analgesia: (1) Intrathecal, (2) Local, and (3) Regional; (*b*) Contrast the immediate and after-effects,

especially Shock, e.g., Intrathecal and Local Analgesia with Inhalational Anæsthesia, with special reference to Psychic Shock. 2. Recent Methods of General Anæsthesia: (*a*) Ether—(i.) Open method, (ii.) Intravascular, (iii.) Intratracheal, (iv.) Nasal, and (v.) Rectal; (*b*) Inhalational Anæsthesia in association with Alkaloidal Bodies—(i.) Nitrous Oxide in Major Surgery, (ii.) Ether, (iii.) Chloroform. 3. Dosimetric Method of Administering: (1) Chloroform and (2) Ether—(*a*) Regulators and (*b*) Mixtures. 4. Post-operative Effects and Toxæmias Associated with Anæsthetics.

Section VIII.—Obstetrics and Gynæcology.

1. Cancer of the Uterus (Body and Cervix); operative technique and results. 2. Röntgen and Radium Therapy in Gynæcology (jointly with XXII., 1). 3. The Treatment of Hæmorrhage from the Placental Site (placenta prævia and accidental hæmorrhage) in the later months of pregnancy. 4. Infant Mortality in the First Four Weeks of Life (jointly with X., 5, and XVIII., 1).

Section IX.—Ophthalmology.

1. The Pathogenesis of Chronic Uveitis, excluding the Syphilitic, Tuberculous, and Sympathetic Varieties. 2. Glaucoma Operations, with Special Reference to the Comparative Results attained by Iridectomy and its Recent Substitutes. 3. Affections of the Eye produced by Undue Exposure to Light. 4. Anaphylaxis in its Relation to Ophthalmology. 5. "Demonstration" Meeting or a Discussion upon a Subject not yet Determined.

Section X.—Diseases of Children.

1. Infection of the Urinary Tract with Colon Bacilli (on a different day from XIV., 3). 2. Effects of the Ductless Glands on Development (on a different day from II., 1, and VI., 1). 3. The Treatment of Tuberculosis in Childhood from the Surgical Point of View, with Special Reference to the Bones, Joints, and Glands (on a different day from VII. (*a*), 5). 4. Polio-encephalitis and Poliomyelitis. 5. Infant Mortality in the First Four Weeks of Life (jointly with VIII., 4, and XVIII., 1).

Section XI.—Neuropathology.

1. The Symptoms of Cerebellar Disease and their Significance. 2. Motor Aphasia, Anarthria, and Apraxia. 3. The Relation of Trauma to Degenerative Diseases of the Nervous System. 4. The Nature of the Condition termed Parasyphilis (on a different day from XII., 5). 5. The Treatment of Tumours of the Brain, and the Indications for Operation (jointly with VII., 2).

Section XII.—Psychiatry.

1. The Psychiatric Clinique, its Aims (educational and therapeutic) and the Results obtained in respect to Promotion of Recovery. 2. The Psychoses of Infection and Auto-intoxication. 3. Psycho-analysis. 4. The Psychology of Crime (jointly with XIX., 4), 5. The Syphilitic and the Parasyphilitic Insanities (on a different day from XI., 4).

Section XIII.—Dermatology and Syphilography.

1. Epithelioma of the Skin, Benign and Malignant. 2. Syphilis: its Dangers to the Community, and the Question of State Control (jointly with XIX., 3). 3. Alopecia Areata and Allied Conditions. 4. The Treatment of Syphilis by Salvarsan and Allied Substances (jointly with XX., 7). 5. The Vaccine Treatment of the Diseases of the Skin.

Section XIV.—Urology.

1. The Treatment of Early Renal and Vesical Tuberculosis (jointly with VII., 4). 2. The Early Diagnosis and Treatment of Malignant Disease of the Prostate. 3 The Value of Vaccines in the Treatment of Hæmic Infections of the Urinary Tract.

Section XV.—Rhinology and Laryngology.

1. The Disorders and Pathological Changes produced in the Pharynx and Larynx by the Over-use and Mis-use of the Voice. 2. The Treatment of Syphilitic Diseases of the Throat, Nose, and Ear, by Salvarsan and other Arsenical Compounds (jointly with XVI., 2). 3. The Question of Treatment of Diseases of the Throat and Nose by Therapeutic Inoculation, exclusive of Tuberculin and Diphtheritic Antitoxin. 4. The Special Treatment of the Throat, Nose, and Ear, during the Active Stages of Certain Infectious Fevers—namely, scarlet fever, measles, German measles, mumps, influenza, typhoid, whooping-cough, small-pox, cerebro-spinal meningitis, erysipelas (diphtheria excluded) (combined with XVI., 4). 5. Malignant Disease of the Post-cricoid Region.

Section XVI.—Otology.

1. Pathology of Deaf-Mutism. 2. The Treatment of Syphilitic Diseases of the Throat, Nose, and Ear by Salvarsan and other Arsenical Compounds (jointly with XV., 2). 3. Treatment of Non-suppurative Diseases of the Labyrinth. 4. The Special Treatment of the Throat, Nose, and Ear during the Active Stages of certain Infectious Fevers—namely, scarlet fever, measles, German measles, mumps, influenza, typhoid, whooping-cough, small-pox, cerebro-spinal meningitis, erysipelas (diphtheria excluded) (jointly with XV., 4). 5. Climatic and Occupational Influences in Diseases of the Ear.

Section XVII.—Stomatology.

1. The Pathology and Treatment of Periodontal Disease (Pyorrhœa Alveolaris). 2. The Relation of Nasal Obstruction to Dental Disease. 3. A Discussion on Reflex and Functional Disturbances in Connexion with Teeth. 4. Dental Diseases in Relation to Public Health. 5. The Supervision of the Health of Children between Infancy and School Age (jointly with XVIII., 3).

Section XVIII.—Hygiene and Preventive Medicine.

1. Infant Mortality in the First Four Weeks of Life (jointly with VIII., 4 and X., 5). 2. The Causes, Prevention, and Treatment of Visual Defects in School Children. 3. The Supervision of the Health of Children between Infancy and School Age (jointly with XVII., 5). 4. (*a*) The Factors that Determine the Rise, Spread, and Degree of Severity of Epidemic Diseases; (*b*) Protective Inoculation in Acute Infectious Diseases. 5. The Effects of Dust in producing Diseases of the Lungs.

Section XIX.—Forensic Medicine.

1. The Cause and Prevention of Suicide. 2. The Habitual Inebriate in Relation to Civil and Criminal Responsibility. 3. Syphilis: its Dangers to the Community and the Question of State Control (jointly with XIII., 2). 4. The Psychology of Crime (jointly with XII., 4). 5. The Constitution and Equipment of a Medico-legal Institute.

Section XX.—Naval and Military Medicine.

1. Hospital Ships and Transport of Wounded. 2. Caisson Disease. 3. The Physiology of Physical Training and Marching. 4. Water-supplies in the Field. 5. Antityphoid Inoculation. 6. Transport of Wounded in Hill Warfare. 7. The Treatment of Syphilis by Salvarsan and Allied Substances (jointly with XIII., 4). 8. Sanitary Organisation in the Tropics (jointly with XXI., 5).

Section XXI.—Tropical Medicine and Hygiene.

1. Relapsing Fevers. 2. Leishmaniasis. 3. Plague. 4. Beri-beri. 5. Sanitary Organisation in the Tropics (jointly with Section XX., 8).

Section XXII.—Radiology.

1. Roentgen and Radium Therapy in Gynæcology (jointly with VIII., 2). 2. The Radiotherapy of Malignant Disease. 3. The X Ray Examination of the Chest. 4. The X Ray Examination of the Abdomen. 5. The X Ray Examination of Bones and Joints and its Value in Orthopædic Surgery (jointly with VII. (*a*), 3).

The Executive Committee reported further:—

7. That the following estimate of expenses had been drawn up by the treasurer, reported by the Finance Committee, and adopted:—

ESTIMATE.

I.—General expenditure—	
(*a*) General meetings ... ... (If the Albert Hall be used the expense may be somewhat less)	£300
(*b*) Sectional meetings	800
(*c*) Badge	180
(*d*) Secretarial work	500
Rent of offices	350
(*e*) Printing, postage, stationery, and various	3,250
(*f*) Pathological museum	500
	£5,880
II.—Entertainments—	
1. An opening evening reception.	
2. An evening garden fête or soirée ...	£1,500
III.—Transactions	£5,000
Estimated total expenditure ...	£12,380

8. That on report of the Reception Committee it was resolved to recommend that there be a formal reception by the President on the evening of Wednesday, August 6th, 1913, being the first day of Congress, and that the arrangements for sectional dinners be left in the hands of the sections.

9. That letters having been received from Professor Sudhoff (Berlin) (in the name of the Deutsche Gesellschaft für Geschichte der Medizin), Dr. Comrie (Lecturer on the History of Medicine at Edinburgh), Dr. T. von Györy (Budapest), Dr. E Wickersheimer (in the name of the Société Française d'Histoire de la Médecine), and others, urging the establishment of a section of the History of Medicine, it was resolved to recommend that the establishment of a section of the History of Medicine be recommended to the Permanent Commission.

The report of the Executive Committee was adopted. It was further resolved that the Historic Exhibits Committee be dissolved.

TAVISTOCK (DEVON) COTTAGE HOSPITAL.—At the annual meeting of the subscribers to this hospital, held recently, the chairman referred with regret to the death of Mr. J. Snowden-Smith, who had been a member of the honorary medical staff for the past 19 years. The following were elected honorary medical officers to the institution: Mr. Charles Cumberland Brodrick, L.R.C.P. & S. Edin.; Mr. Albert Bowhay, M.D. Durh., L.R.C.P. Lond., M.R.C.S. Eng., L.S.A., D.P.H. Camb.; Mr. Henry Warren Cowe, M.D., B.Ch. Oxon., L.R.C.P. Lond., M.R.C.S. Eng.; Mr. George Hewlett Stanhope Hillyar, L.R.C.P. & S. Edin., L.F.P.S. Glasg.; and Mr. Charles William Seccombe, L.R.C.P. Lond., M.R.C.S. Eng.

VITAL STATISTICS.

HEALTH OF ENGLISH TOWNS.

IN the 94 largest English towns having an estimated population of 17,559,219 persons in the middle of this year, 8458 births and 5645 deaths were registered during the week ending Feb. 24th. The annual rate of mortality in these towns, which had been 18·6, 21·6, and 18·6 per 1000 in the three preceding weeks, further declined to 16·8 per 1000 in the week under notice. During the first eight weeks of the current quarter the mean annual death-rate in these large towns averaged 17·2 per 1000, while in London during the same period the average annual death-rate did not exceed 16·4 per 1000. The annual death-rates last week in the several towns ranged from 6·9 in Ilford, 7·8 in Southend-on-Sea, 8·1 in Enfield, 8·3 in Wimbledon, and 8·8 in Ealing, to 24 9 in Salford, 26·5 in West Bromwich, 27·0 in Walsall, 27·4 in Dudley, and 31·4 in Great Yarmouth.

The 5645 deaths from all causes in the 94 towns were 625 fewer than the number in the previous week, and included 353 which were referred to the principal epidemic diseases, against 435 and 365 in the two preceding weeks. These 353 deaths from the principal epidemic diseases included 147 from whooping-cough, 88 from measles, 44 from diphtheria, 39 from infantile diarrhœal diseases, 18 from enteric fever, and 17 from scarlet fever, but not one from small-pox. The mean annual death-rate from these diseases last week was equal to 1 0 per 1000, against 1·3 and 1·1 in the two preceding weeks. The deaths attributed to whooping-cough, which had been 166, 186, and 148 in the three preceding weeks, numbered 147 last week, and caused the highest annual death-rates of 1·6 in Edmonton and in Birkenhead, 2·3 in West Bromwich, 3·4 in Walsall, 4·6 in Great Yarmouth, and 5·1 in Merthyr Tydfil. The deaths referred to measles, which had been 63, 98, and 69 in the three previous weeks, increased to 88 last week; the highest annual death-rates from this cause were 1·6 in Nottingham, 1·7 Rhondda, 1·9 in Oxford, 2·1 in Warrington, 2 2 in Salford, and 3·0 in Wakefield. The fatal cases of diphtheria, which had declined from 71 to 43, in the three preceding weeks, were 44 last week, and included 14 in London and its suburban districts, 4 in Leeds, and 3 in Bradford. The deaths attributed to infantile diarrhœal diseases, which had been 67, 49, and 58 in the three preceding weeks, declined to 39 last week; 8 deaths were registered in London and 6 in Manchester. The deaths referred to enteric fever last week numbered 18, and were equal to the average in the seven preceding weeks; 3 deaths were recorded in London and 2 in Bristol. The fatal cases of scarlet fever, which had increased from 21 to 28 in the three preceding weeks, declined to 17 last week, and included 4 in Liverpool and 2 in Leeds.

The number of scarlet fever patients under treatment in the Metropolitan Asylums and in the London Fever Hospital, which had been 1500, 1512, and 1461 in the three preceding weeks, had further declined to 1427 on Saturday last; 181 new cases of this disease were admitted to these institutions during the week, against 169, 178, and 154 in the three preceding weeks. These hospitals also contained on Saturday last 1168 cases of diphtheria, 431 of whooping-cough, 212 of measles, 66 of enteric fever, and 2 of small-pox. The 1334 deaths from all causes recorded in London were 231 fewer than the number in the previous week, and were equal to an annual death-rate of 15·4 per 1000. The deaths referred to diseases of the respiratory system, which had been 394, 545, and 440 in the three preceding weeks, further declined to 352 last week, and were 43 below the number recorded in the corresponding week of last year.

Of the 5645 deaths in the 94 large towns, 174 resulted from different forms of violence, and 383 were the subject of coroners' inquests. The causes of 40, or 0·7 per cent., of the deaths registered last week were not certified either by a registered medical practitioner or by a coroner after inquest. All the causes of death were duly certified in Sheffield, Leeds, Bristol, West Ham, Bradford, Newcastle-on-Tyne, Portsmouth, and in 67 other smaller towns. The 40 uncertified causes of death last week included 8 in Birmingham, 8 in Liverpool, 3 in Southport, 3 in Rotherham, 2 in Darlington, and 2 in Gateshead.

HEALTH OF SCOTCH TOWNS.

In the 18 largest Scotch towns, having an estimated population of 2,182,400 persons in the middle of this year, 1102 births and 775 deaths were registered during the week ending Feb. 24th. The annual rate of mortality in these towns, which had been 22·8 and 22·1 per 1000 in the two preceding weeks, further declined to 18·5 per 1000 in the week under notice. During the first eight weeks of the current quarter the mean annual rate of mortality in these towns averaged 19·1 per 1000, and was 1·9 per 1000 in excess of the mean rate recorded during the same period in the 94 large English towns. The annual death-rates in the several Scotch towns last week ranged from 6·1 in Falkirk, 8·8 in Motherwell, and 10·6 in Partick, to 22·7 in Paisley, 23·3 in Ayr, and 23·4 in Greenock.

The 775 deaths from all causes were 148 fewer than the number in the preceding week, and included 120 which were referred to the principal epidemic diseases, against numbers increasing from 89 to 103 in the four preceding weeks. Of these 120 deaths, 62 resulted from measles, 22 from diphtheria, 18 from whooping-cough, 11 from infantile diarrhœal diseases, 4 from enteric fever, and 3 from scarlet fever, but not one from small-pox. These 120 deaths from the principal epidemic diseases were equal to an annual death-rate of 2·9 per 1000, or 1·9 per 1000 above that recorded in the 94 large English towns. The deaths attributed to measles, which had increased from 39 to 63 in the four preceding weeks, were 62 last week, and included 41 in Glasgow, 5 in Greenock, 4 in Edinburgh, 3 in Aberdeen, and 3 in Kilmarnock. The deaths referred to diphtheria, which had been 12, 13, and 6 in the three preceding weeks, rose to 22 last week; 10 deaths were registered in Glasgow, 3 in Leith, 2 in Edinburgh, and 2 in Coatbridge. The fatal cases of whooping-cough, which had been 14 in each of the three preceding weeks, rose to 18 last week, and included 5 in Ayr and 4 in Glasgow. The deaths of infants attributed to diarrhœal diseases, which had been 6 and 14 in the two previous weeks, declined to 11 last week, of which number 4 were recorded in Glasgow. The 4 deaths referred to enteric fever were equal to the number in the previous week, and included 2 in Glasgow. The 3 fatal cases of scarlet fever were registered in Glasgow, Edinburgh, and Aberdeen respectively.

The deaths referred to diseases of the respiratory system, which had been 220 and 209 in the two previous weeks, further declined to 192 last week; and 19 deaths were attributed to different forms of violence.

HEALTH OF IRISH TOWNS.

In the 22 town districts of Ireland, having an estimated population of 1,157,014 persons in the middle of this year, 566 births and 545 deaths were registered during the week ending Feb. 24th. The annual rate of mortality in these towns, which had been 31·0 and 26·6 per 1000 in the two preceding weeks, further declined to 24 6 per 1000 in the week under notice. During the first eight weeks of the current quarter the mean annual death-rate in these Irish towns averaged 23·7 per 1000; in the 94 large English towns the mean annual death-rate during the same period did not exceed 17·2 per 1000, while in the 18 Scotch towns it was equal to 19·1 per 1000. The annual death-rates in the several Irish towns last week were equal to 23 3 in Dublin (against 15·4 in London), 26 9 in Belfast, 24 5 in Cork, 12·7 in Londonderry, 23·1 in Limerick, and 38·0 in Waterford; while in the 16 smallest of these towns the death-rate last week was equal to 23·1 per 1000.

The 545 deaths from all causes in the 22 Irish towns were 45 fewer than the number in the previous week, and included 27 which were referred to the principal epidemic diseases, against 49 and 42 in the two preceding weeks; of these 27 deaths, 14 resulted from whooping-cough, 5 from infantile diarrhœal diseases, 3 from measles, 2 from scarlet fever, 2 from diphtheria, and 1 from enteric fever, but not one from small-pox. These 27 deaths from the principal epidemic diseases were equal to an annual death-rate of 1·2 per 1000; the death-rate last week from these diseases did not exceed 1·0 per 1000 in the 94 large English towns, while in the 18 Scotch towns it was equal to 2 9. The deaths attributed to whooping-cough, which had been 25 and 21 in the two preceding weeks, further declined to 14 last week, and included 9 in Belfast and 4 in Dublin.

The deaths of infants referred to diarrhœal diseases numbered 5 last week, against 7 and 8 in the two preceding weeks; 2 deaths were recorded in Dublin. The fatal cases of measles, which had increased from 2 to 8 in the three preceding weeks, declined to 3 last week, and comprised 2 in Dublin and 1 in Clonmel. The 2 deaths from scarlet fever, the fatal case of enteric fever, and 1 of the 2 deaths from diphtheria were registered in Dublin.

The deaths referred to diseases of the respiratory system, which had been 239 and 212 in the two preceding weeks, further declined to 189 last week. Of the 545 deaths from all causes in the 22 Irish towns, 129, or 24 per cent., occurred in public institutions, and 5 resulted from different forms of violence. The causes of 29, or 5·3 per cent., of the total deaths were not certified either by a registered medical practitioner or by a coroner after inquest; in the 94 large English towns the proportion of uncertified deaths in the week under notice did not exceed 0·7 per cent.

THE SERVICES.

ROYAL NAVY MEDICAL SERVICE.

Surgeon Arthur Robertson Davidson has been promoted to the rank of Staff-Surgeon in His Majesty's Fleet (dated Feb. 23rd, 1912).

The following appointments have been notified:—Deputy Surgeons-General: W. H. Norman to Malta Hospital; D. T. Hoskyn to Hong-Kong Hospital; E. R. Dimsey, D.S.O., to Haslar Hospital; W. W. Prym to Chatham Hospital; and P. B. Handyside to Plymouth Hospital. Fleet-Surgeons: M. L. B. Rodd to the *President*, additional, for three months' special course in surgery at the Dreadnought Seamen's Hospital; R. A. Ross to the *Hindustan*, on recommissioning; W. E. Marshall to the *Duke of Edinburgh*, on recommissioning; and E. A. Penfold to the *Excellent*, additional, for the *Revenge*. Staff-Surgeons: F. Bolster to Plymouth Hospital, temporary; R. W. G. Stewart to the *Racer*, additional, for Osborne College, temporary; C. R. Sheward to the *Pomone*, additional, for Royal Naval College, Dartmouth; G. H. S. Milln to the *Duke of Edinburgh*, on recommissioning; and H. C. Whiteside to the *St. George*, temporarily. Surgeon: F. G. H. R. Black to the *Hecla*.

ROYAL ARMY MEDICAL CORPS.

The undermentioned Lieutenants to be Captains (dated Feb. 1st, 1912):—Charlie Ryles, David S. Buist, William E. Marshall, Alexander M. Pollard, Gilbert G. Collet, Colin Clarke, Edmund V. Vaughan, Arthur N. R. McNeill, Andrew R. Wright, Thomas B. Nicholls, Julian B. Jones, James A. Clark, Stuart McK. Saunders, Thomas J. Mitchell, Frank H. Somers-Gardner, Donald H. C. MacArthur, George S. Parkinson, Herbert Gall, Charles H. O'Rorke, Austin W. Byrne, John Startin, Charles G. Sherlock, George H. Stack, Harold H. Leeson, Samuel W. Kyle, John W. Lane, William G. Wright, and Albert T. J. McCreery.

The undermentioned to be Lieutenants (on probation) (dated Jan. 26th, 1912):—Alexander Gordon Biggam, Lieutenant David Torquil Macleod Large (from the Royal Army Medical Corps, Special Reserve), William Francis Christie, Roy Kyffin Mallam, Walter Woodall Pratt, Walter Stevenson, Maurice Burnett, Cuthbert James Blaikie, James Hebblethwaite Martin Frobisher, Christopher Martin Ingoldby, Owen Waller James Wynne, Lieutenant David Turnbull Richardson (from the Royal Army Medical Corps, Special Reserve), Edward Alexander Strachan, Lieutenant William McNaughtan (from the Forth Royal Garrison Artillery, Territorial Force), Lieutenant Sydney James Higgins (from the Royal Army Medical Corps, Special Reserve), Alexander Hood, John Lichtenstein Ritchie, Gilbert Alan Blake, Henry Roland L'Estrange, Cuthbert Joseph Harwood Little, Percy Arthur With, Robert Washington Vint, Stephen James Barry, Harold Wordsworth Leach Allott, and Edward Percival Allman Smith.

The undermentioned Lieutenants (on probation) are seconded under the provisions of Article 300, Royal Warrant for Pay and Promotion, 1909 (dated Jan. 26th, 1912):—Alexander G. Biggam, Walter W. Pratt, Maurice Burnett, Gilbert A. Blake, Cuthbert J. H. Little, Robert W. Vint, Harold W. L. Allott, and Edward P. A Smith.

Surgeon-General H. R. Whitehead, principal medical officer of the Southern Command at Salisbury, has been selected for appointment as Principal Medical Officer of the Eastern Command, with effect from March 20th, on the retirement of Surgeon-General J. C. Dorman, C.M.G., honorary physician to His Majesty the King. Colonel A. F. Russell, C.M.G., lately commanding the Station Hospital at Malta, has taken up duty as Principal Medical Officer at Cairo, in succession to Colonel T. M. Corker, promoted Surgeon-General and transferred to the Indian Establishment. Colonel H. J. Barratt, lately senior medical officer in the Straits Settlements, has taken up duty as Principal Medical Officer of the Allahabad Brigade in India.

Lieutenant-Colonel F. W. Caton Jones, commanding the Station Hospital at Quetta, has been selected to succeed Lieutenant-Colonel E. H. L. Lynden Bell in the command of the Station Hospital at Meerut Cantonment. Lieutenant-Colonel A. L. F. Bate, on arrival home from India tour expired, has been posted to the Western Command. Lieutenant-Colonel F. P. Nichols, on relinquishing charge of the Military Hospital at Jersey, has taken up duty at Bodmin. Lieutenant-Colonel W. L. Gray, on arrival in India for a tour of duty, has been selected to command the Station Hospital at Jullundur. Lieutenant-Colonel R. L. R. Macleod, on return from a tour of service at Aden, has taken over charge of the Military Hospital at Devonport. Lieutenant-Colonel H. C. Thurston has been transferred from the Aldershot Command to the Royal Military Hospital at Sandhurst as Senior Medical Officer, vice Lieutenant-Colonel C. C. Reilly, whose tenure of the appointment has expired. Lieutenant-Colonel J. W. Bullen, lately commanding the Station Hospital at Wellington, Madras Presidency, has been selected to command the Station Hospital at Maymyo, Burma, in succession to Lieutenant Colonel C. E. Nichol, D.S.O., appointed Principal Medical Officer of the Presidency and Assam Brigades.

An exchange on the roster of foreign service has been sanctioned by the War Office between Major F. W. Begbie, serving at Colchester, and Major E. T. F. Birrell, Deputy Assistant Director-General, Army Medical Service. Major N. Faichnie, specialist sanitary officer, Fifth (Mhow) Division, has been granted eight months' general leave of absence in India. Major E. E. Powell, from Bordon, has taken up duty at Aldershot. Major A. J. MacDougall, on return from a tour of duty in Ceylon, has been posted to the Irish Command. Major F. S. Irvine has been transferred from the Aldershot Command to the Royal Army Medical College. Major C. F. Wanhill, Assistant Professor of Hygiene at the Royal Army Medical College, on arrival in India will be posted to the Fifth (Mhow) Division. Major J. D. G. Macpherson, in charge of the Military and Cantonment Hospitals at Pachmarhi, has been granted eight months' general leave of absence home from India with effect from March 18th. Major W. H. S. Nickerson, V.C., has been transferred from Peshawar to the Station Hospital at Rawal Pindi.

Captain M. B. H. Ritchie, Officiating Staff Officer of Medical Mobilisation Stores in the Second (Rawal Pindi) Division, has been granted one year's extension of his tour of service in India by His Excellency the Commander-in-Chief. Captain T. S. Blackwell, commanding the Station Hospital at Bhamo, has been detailed for duty on board the troopship s.s. *Rohilla*, which left Karachi for Southampton on Jan. 31st. Captain R. E. Humfrey, on return from duty at the Station Hospital, Jhansi, has been ordered to join in Ireland on April 2nd, and on arrival will be posted to the Dublin District. Captain W. Benson, lately holding charge of the Cantonment General Hospital at Rawal Pindi, has been directed to join in Ireland on March 2nd, and will be posted for duty to the Dublin District. Captain C. G. Browne, specialist in dermatology and venereal diseases to the Eighth (Lucknow) Division, has been granted six months' leave of absence home from Feb. 15th. Captain R. F. Ellery, from Benares, has taken up duty at the Station Hospital at Bareilly. Captain B. H. V. Dunbar has been moved from Enniskillen to Belfast for duty at the Military Hospital. Captain A. W. Sampey has left the Military Hospital at Warley for a tour of service in India with the Seventh (Meerut) Division. Captain R. H. MacNichol has taken up duty at the Royal Herbert Hospital, Woolwich, as Specialist in Dermatology and Venereal Diseases.

The following Lieutenants have been appointed for duty in

the Southern Command:—F. S. Tamplin, J. M. Elliott, and A. S. Heale. Lieutenant S. S. Dykes, from Aberdeen, has taken up duty at Piershill. Lieutenant P. S. Tomlinson has been transferred from Bulford Camp to the Military Hospital at Tidworth. Lieutenant E. C. Stoney has, on arrival in India, been appointed for duty in the Ninth (Secunderabad) Division of the Southern Army.

INDIAN MEDICAL SERVICE.

The Honourable Surgeon-General Sir C. P. Lukis, K.C.S.I., Director-General of the Indian Medical Service, has been appointed a Knight of Grace of the Order of St. John of Jerusalem in England. Brevet-Colonel H. F. Cleveland, principal medical officer of the Aden Brigade, has been granted leave of absence home. Lieutenant-Colonel A. O. Evans has been appointed to officiate as Principal Medical Officer of the Kohat Brigade. Lieutenant-Colonel J. Chaytor-White, Bengal Presidency, has been granted three months' extension of his leave of absence by the Right Honourable the Secretary of State for India, on the recommendation of a medical board. Lieutenant-Colonel J. B. Smith, civil surgeon at Poona, has arrived home on one year's leave of absence from Bombay.

His Excellency the Governor of Bombay in Council has been pleased to appoint Major E. C. G. Maddock on return to duty from leave, to be Civil Surgeon at Ahmednagar. Major J. W. Cornwall has been granted two years and seven months' leave of absence home from India. Major E. M. Ellington has been selected for appointment as District Medical Officer at Vizagapatam. Major E. F. G. Tucker has been appointed to officiate as Police Surgeon at Bombay. The services of Major S. A. Harris have been placed at the disposal of the Government of the United Provinces of Oudh and Rohilkhund. Major A. E. Walter, superintendent of the X Ray Institute at Dehra Dun, has been awarded the Kaiser-i-Hind gold medal. Major C. C. Murison, superintendent of the Matheran Lunatic Asylum at Colaba, has been appointed a Magistrate for the Bombay District. Major C. B. Prall has arrived home on leave of absence from Bengal Presidency.

Captain K. S. Singh, plague medical officer at Karnal, has been transferred to Amritsar. Captain T. T. Thompson has arrived home on leave of absence. Captain H. C. Keates has passed the colloquial examination in Punjabi and has been confirmed as a Civil Surgeon. Captain C. A. Gill has been appointed to officiate as Civil Surgeon at Simla during the absence on leave of Lieutenant-Colonel C. Duer. Captain A. Cameron, plague medical officer at Delhi, has been transferred to Gurdaspur. Captain J. Husband has been appointed a Specialist in Advanced Operative Surgery. Captain N. S. Sodhi, plague medical officer at Gurgeon, has been transferred to Ludhiana.

TERRITORIAL FORCE.

Royal Army Medical Corps.

3rd West Lancashire Field Ambulance, Royal Army Medical Corps: Mitchell Innes Dick to be Lieutenant (dated Dec. 15th, 1911).

DEATHS IN THE SERVICES.

Inspector-General Edward Elphinstone, C.B., R.N. (retired), at his residence, Holland Park-avenue, on Feb. 26th. He entered the service in 1878, took part in the first Boer war, landing with the Naval Brigade, and was present at Laing's Nek and at Majuba (mentioned in despatches and specially promoted to staff-surgeon). He also served in Egypt and landed with the army during the Burma war of 1885–87.

EXETER DISPENSARY.—The annual meeting of the subscribers to this institution was held recently, under the presidency of the Mayor (Dr. C. J. Vlieland). The financial statement showed that at the end of 1911 an adverse balance of £101 remained. The medical report stated that during the year 4918 patients had been treated, against 5068 in 1910. It was reported that the medical staff, considering the amount of visiting delegated to the visiting medical officer to be excessive, had suggested that two members of the staff should perform the duties and that an honorarium of 40 guineas each should be awarded them. A resolution to that effect was adopted. Dr. Henry Davy was elected president for the ensuing year.

Correspondence.

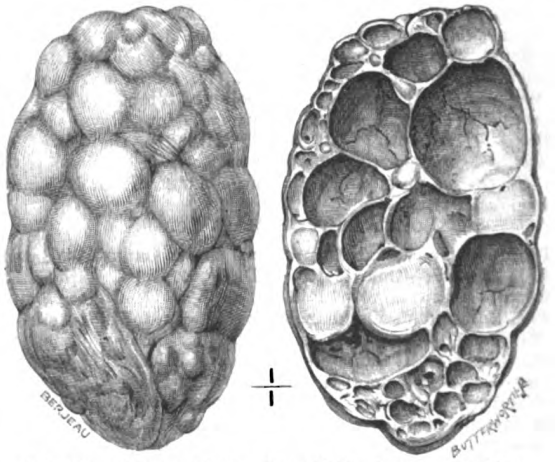
"Audi alteram partem."

THE "RADICAL" OPERATION FOR MALIGNANT DISEASE OF THE TESTICLE.

To the Editor of THE LANCET.

SIR,—In his comment on Mr. H. Morriston Davies's contribution entitled "Malignant Disease of the Testicle and the Treatment of it by Operation," Sir Alfred Pearce Gould asks in THE LANCET of Feb. 24th for information concerning the subsequent history of the patients who have been submitted to this operation. I am able to supply some. At the date on which you published my account of "An Improved Method of Removing the Testicle and Spermatic Cord for Malignant Disease"[1] I had no knowledge that a similar operation had been performed several times in France. In 1911 Dr. Paul Calin, of Lyons, sent me a copy of his admirable brochure, "Du Traitement Chirurgical du Cancer du Testicule (Extirpation des Ganglions Ilio-lombaires)," containing descriptions of 15 cases in which this radical operation had been attempted or performed. He includes my case in the series, and has been able to ascertain the after-history of some of the patients.

This "radical," or, as I prefer to call it, improved, method of removing the testicle for malignant disease, has been performed 17 times. In three instances with fatal results (Morestin, Michel, Gayet). Grégoire attempted it on three occasions. In the first operation (1905) he removed the



A lymph node removed from beneath the sternal end of the left sterno-mastoid muscle. From a man whose right testicle had been removed for cystic disease six months previously. (From "Tumours, Innocent and Malignant," fifth edition.)

testicle, but the gland mass in the abdomen was irremoveable and one gland was excised for examination. The patient survived the castration two and a half years. Grégoire's second operation took place in 1907. Extirpation of the gland mass was impossible. The man recovered from the operation, but returned to the hospital two months later with ascites and the "membres inférieurs gonflés d'œdéme donnant l'impression de membres d'éléphants." He died a few months later. His third was in 1908; the patient survived it six months and succumbed with secondary deposits in the lungs. Fredet found a lymph gland on the aorta of his patient so firmly adherent that it could not be removed. He recovered from the operation; a few months later it was possible to make out by palpation a hard pre-vertebral mass in the region of the irremoveable gland. These results are not encouraging. Cuneo's patient could not be traced; he was an Italian, and after the operation returned to his own country. Gosset's patient was seen ten months after the

[1] THE LANCET, Nov. 13th, 1909, p. 1406.

operation in good health and free from obvious signs of recurrence.

In my case the subsequent history is of interest. The operation was performed on Sept. 8th, 1909, for cystic disease. The testicle and spermatic cord, with the vessels and lymphatics, were removed in one piece. The vena cava and aorta were exposed as high as the transverse portion of the duodenum. The only lymph gland I could find rested on the inferior vena cava; it was as big as a bean. The parts about the aorta were examined with eyes and fingers very thoroughly. Six months after the operation the patient returned with a swelling under the sternal end of the left sterno-mastoid muscle. This I exposed by operation, and shelled out a lymph node as big as a bantam's egg (see figure). This was cystic, and the cysts were lined with epithelium corresponding with that in the cystic spaces of the primary tumour. Two years after the operation the patient reports himself to be in good health. It is astonishing to find a tumour with so low a degree of malignancy as cystic disease of the testicle making use of the thoracic duct to climb up to the lymph nodes at the root of the neck.

The remaining cases are too recent for an opinion to be expressed as to the ultimate value of the operation, but the facts collected by Dr. Calin give a somewhat different complexion to the operation than the inaccurate summary furnished by Mr. Morriston Davies. The operation is worth an extended trial. I agree with Dr. J. K. Jamieson and Mr. J. F. Dobson[2] that the complete removal of the lymphatic area around the mesenteric and renal arteries is impracticable, but I maintain that by operating early we may hope in a proportion of cases to get beyond the infected lymphatics. The improved operation for removing the testicle will not be limited to castration for malignant disease. I have performed it with a good result in tuberculous disease of the testicle.

I am, Sir, yours faithfully,

Brook-street, W., Feb. 26th, 1912. JOHN BLAND-SUTTON.

To the Editor of THE LANCET.

SIR,—Sir Alfred Pearce Gould reproves me for my use of the word "radical" in connexion with the operation for the removal of the testicle together with the lymphatics, fascia, and primary set of glands, and suggests that the results of the 13 cases in which the operation was done do not justify the use of that term. But may I point out to him that the word "radical" was applied to this operation by other authors previous to me, and I conclude that they—as I certainly have done—mean "radical" to denote the anatomical range of the operation as in the current use of the word when applied to certain well-defined operations on the breast and mastoid or for the cure of herniæ, and not to the results.

As regards the actual results, my case has since developed a recurrence, but that has no bearing on the object of my paper, as I cannot suppose that anyone would draw conclusions on the value of an operation for malignant disease from the results of 13 cases only. The cases show that the operation is feasible and not dangerous, and I desire to emphasise the advisability on general principles of a further trial of the major operation in suitable cases so that a sufficient number of records may be collected in order to determine the value of this procedure.

I am, Sir, yours faithfully,

Harley-street, W., Feb. 24th, 1912. H. MORRISTON DAVIES.

THE RECENT OUTBREAK OF POLIOMYELITIS AT STOKE RIVERS.

To the Editor of THE LANCET.

SIR,—In your issues of Feb. 17th and 24th, which contain your criticism of the recent Local Government Board report on the prevalence of acute poliomyelitis in Devon during last summer, you state in regard to the outbreak at Stoke Rivers that among the whole 36 cases there is not a single case of definite poliomyelitis. I should like to point out that Dr. R. J. Reece left the locality before this particular outbreak occurred, and his report was evidently written some time in October, since which date I have kept him posted up in the subsequent course of the epidemic, some further details of which he communicated to the Epidemiological Section of the Royal Society of Medicine in a paper read in January.

At Dr. Reece's particular wish I closely investigated the Stoke Rivers outbreak, and from my personal acquaintance of about 150 cases of the disease, both in company with Dr. Reece and after his departure, I have not the slightest doubt that these at Stoke Rivers were instances of true poliomyelitis. (Thirty were of the abortive type, three of the bulbar or pontine form, two of the spinal poliomyelitis type, and one of the polyneuritic type.) One of the spinal form (paraplegia), taken ill on Oct. 26th, had an abortive attack on Sept. 25th.

I notice in your leading article of Feb. 24th that you lay stress on the point that Dr. Reece attached considerable importance to Kernig's sign. Whilst investigating cases in my presence he certainly only looked upon it, when present, as a sign which indicated implication of the spinal cord, in the same manner as other observers have in different parts of the world. As to the nature of the poison, it is most important, as you suggest, that further research in our own country should be carried out for finding this. I have a strong feeling that the "carrier" plays an important part in the dissemination of the virus; but our knowledge of the etiology and epidemiology of this disease must be materially added to before it is possible to speak definitely as to its method of spread. The reports of the Local Government Board show in what direction experimental research and careful observation of cases should be directed. We do not know whether the disease can be conveyed directly or indirectly by animals, or by animal parasites, or by dust. Is it possible that the virus can exist outside the animal body? Can it survive in milk? Investigation of these points, among others, is urgently required.

I am, Sir, yours faithfully,

GEORGE ADKINS,

Feb. 22nd, 1911. County Medical Officer of Devon.

THE INFECTIVITY OF CANCER.

To the Editor of THE LANCET.

SIR,—I read with interest and appreciation two lectures on "Unicellula Cancri" by [the late] Sir Henry Butlin,[1] who has done good service in once more emphasising the fact that the parasite of cancer is the cancer cell itself, even though it may not be possible absolutely to identify cancer cells with protozoa, as he has suggested.

The question of priority is of less importance than is the fact that this conception of the cancer cell has been reached independently by other workers. In September, 1905, at the Australasian Medical Congress in Adelaide, I gave an address on cancer and tumour-growth, published in the *Australasian Medical Gazette* and in the *Edinburgh Medical and Surgical Journal*, in which I suggested (1) that the relation of the chorionic epithelium to the maternal decidua was essentially that of a neoplasm of restricted malignancy, so far as local infiltration and independence of growth was concerned—the fertilised ovum being for a time definitely parasitic upon the mammalian organism; (2) that the development of cancer was a biological phenomenon *sui generis*, and implied the generation of a new organism; (3) that the cancer process was an invasion of the parent organism by a brood of independent and hostile cells, equivalent to a microbic infection.

Again, in February, 1907, I elaborated these suggestions in an address to the First Australasian Dental Congress, published in the *Australasian Medical Gazette* and in THE LANCET.[2] I then said: "Whereas the cells of the healthy animal body are all working for the common good, the cancer cell appears as a seceder from this commonwealth. ..... Whatever the ultimate nature of cancer may prove to be, this at least is certain, that it constitutes an invasion of the organism by a brood of independent and hostile cells, and that, once these cells have made their appearance within the organism, they may undergo a practically indefinite and unlimited multiplication and proliferation. But these are precisely the conditions that go to make up the process of infection, and so we reach the general conclusion that, in a very definite and intelligible sense, cancer is an infective disease—as certainly infective as any disease due to an invasion of the organism by other parasitic cells, whether of bacterial or of animal origin. ..... Although the existence of a specific

[2] The Lymphatics of the Testicle, THE LANCET, Feb. 19th, 1910, p. 493.

[1] THE LANCET, Nov. 25th (p. 1457) and Dec. 2nd (p. 1535), 1911.
[2] THE LANCET, June 8th, 1907, p. 1564.

cancer parasite is at the best doubtful, the existence of the parasite, cancer, is beyond a doubt. ..... The cancer cell is in itself a parasite, and is endowed with that formidable attribute of the more highly pathogenic parasites—the attribute of infectivity." I then pointed out that, although cancer is an "infective" disease, it is probably not "infectious." I went on to show that a due appreciation of the "infective" nature of cancer tends, not to confuse, but to coördinate certain phenomena of tumour-growth, such as relative malignancy, which otherwise are hard to apprehend.

I am, Sir, yours faithfully,

University of Sydney, Jan. 15th, 1912. D. A. WELSH.

THE CRESCENDO MURMUR OF MITRAL STENOSIS.

To the Editor of THE LANCET.

SIR,—I beg to thank you for your very appreciative and much appreciated review of my small work on the elements of cardiac auscultation which appeared in THE LANCET of Jan. 27th. In this review you say that "the view that the crescendo murmur of mitral stenosis is ventricular systolic and not auricular systolic is, we believe, gradually gaining ground, but it is not as yet generally adopted." May I direct the attention of your readers interested in the subject to a paper by Weiss and Joachim, of Königsberg University, published in the *Zeitschrift für Klinische Medicin*, 1910, Vol. XIII.? These observers have done me the honour of devoting five of the eighteen pages of their article (The Registration of the Heart Sounds and Murmurs by Means of the Phonoscope, and their Relation to the Electro-cardiogram) to testing my theory on the causation of the crescendo murmur. They have taken tracings of the heart sounds and murmurs of mitral stenosis by means of the phonoscope synchronously with tracings of the movements of the auricle and ventricle with the string galvanometer. The evidence thus gained on the point at issue is therefore absolutely reliable. In their paper they say that if my theory is correct two things must happen: (1) The first sound in mitral stenosis must be abnormally delayed; and (2) the commencement of the crescendo murmur must be at a point of time at which the commencement of ventricular systole may be assumed.

These conditions are quite fair. As to the first point, they say that in 17 out of 18 cases of pure mitral stenosis the first sound was definitely late; and as to the second, they conclude that "the terminal portion of the crescendo murmur—namely, that portion which immediately precedes the first heart sound—is of ventricular origin, that is protosystolic." Dr. Joachim in a private letter says that he agrees with my contention as to the causation of this terminal part of the crescendo murmur, which he calls protosystolic in rhythm, and I call early ventricular systolic or presphygmic. I have always limited my argument to that part of the so-called presystolic murmur of mitral stenosis, which is of crescendo force and *rising pitch*, and this only occurs immediately before the first sound by which it is abruptly terminated. Murmurs of increasing force unless accompanied by rising pitch are not the true so-called crescendo murmurs. I may also state that papers by other writers are being published from time to time in which a true crescendo murmur is heard, but there is no evidence of auricular systole—i.e., as judged by electro-cardiograph tracings (e.g., on the Mechanism of the Presystolic Murmur, T. Stuart Hart, *Medical Record*, July 1st, 1911).

I am, Sir, yours faithfully,

E. M. BROCKBANK, M.D. Vict., F.R.C.P. Lond.

Manchester.

THE PATHOLOGY AND TREATMENT OF EXOPHTHALMIC GOITRE.

To the Editor of THE LANCET.

SIR,—I am much interested in Dr. G. R. Murray's paper in THE LANCET of Feb. 24th on the above subject. He mentions a case that had 11 doses of X rays in about five weeks from Nov. 28th, 1911, to Jan. 5th, 1912. The right lobe of the thyroid was removed on Jan. 9th, and he states that now the pulse-rate varies from 92 to 120, whereas, before the operation, it varied from 120 to 204. I would like to suggest that the good result is largely due to the application of the rays rather than to the operation.

Since 1905 I have treated 31 cases of Graves's disease with X rays alone in private and in hospital practice. Of the 14 private cases 10 are cured and the remaining 4 practically well. Of the 17 hospital cases 7 are cured, 4 are markedly relieved, 4 show very little relief, 1 was operated on with a fatal result after five applications, and 1 has only started treatment. Altogether, therefore, the cured and greatly relieved number over 80 per cent. I claim that no other method of treatment, surgical or otherwise, can show such good results in this most intractable of diseases.

Here in Leeds we are coming to the conclusion that the X rays is, so far, the only rational and scientific mode of treatment.

I am also interested in the microscopical findings of the lobe of the thyroid that had been exposed to the rays. If it had been removed later these changes would have been more marked.—I am, Sir, yours faithfully,

LEO. A. ROWDEN, M.B., C.M.,
Honorary Director, Electro-Therapeutic Department,
Feb. 25th, 1912. General Infirmary, Leeds.

WEEKLY PAYMENTS AT ST. BARTHOLOMEW'S HOSPITAL: A CORRECTION.

To the Editor of THE LANCET.

SIR,—Considerable inconvenience has been caused by a statement which appeared in the press on Feb. 22nd, implying that St. Bartholomew's Hospital is offering treatment "for a weekly payment of £2."

I wish to say that no such offer has been made, nor has there at any time been a suggestion of making an offer of the kind. The statement is therefore entirely without foundation so far this hospital is concerned, and I can only assume it was made under a misapprehension.

I am, Sir, yours faithfully,

Feb. 24th, 1912. THOMAS HAYES, Clerk.

UNICELLULA CANCRI.

To the Editor of THE LANCET.

SIR,—I have only recently read the very interesting lectures on Unicellula Cancri delivered by the late Sir Henry Butlin before the Royal College of Surgeons, and reported in THE LANCET of Nov. 25th and Dec. 2nd, 1911. An explanation of the facts put forward occurred to me some three or four years ago. It is that cancer and sarcoma (and also some of the benign growths) are due to, not a symbiotic association of a parasite and a tissue cell, but to a sort of "fertilisation" of a tissue cell by a parasite of a protozoan nature. The result is, as is said in the lectures, that a new "animal" is produced which is similar to the original cell in nature and growth in many respects, and yet, so to speak, has a strange new vitality. As the tissue cell before the process which I call "fertilisation" takes place was a *specialised* cell, so the new growth is a multiplication of that cell, and of that kind of cell only.

The chief facts in support (other than those put forward in the lectures) are three in number. 1. The workers at the Cancer Research Laboratories have shown that the cells in a beginning cancer and in the edge of a growing tumour behave for several generations like germinal cells undergoing maturation, as judged by the karyokinetic figures observed. 2. They have also shown that the blending of "white blood corpuscles" (really, in my opinion, amœboid parasites) with tissue cells can sometimes be observed in very young growths (but I understand *not* in metastases). 3. By other observers working with mice tumours it has now been conclusively proved that sometimes a carcinomatous transplantation has suddenly taken on sarcomatous characters. This last is easily understandable if we assume that under the conditions of the experiment (perhaps simulating the natural conditions suitable to the growth of débris from a naturally sloughing tumour which has naturally become lodged in a susceptible host) the reverse of the "fertilisation" sometimes occurs and the parasite itself is regenerated in a form able to attack any cell handy to it in its new host and by a new "fertilisation" sets up a new type of growth, and, if the cell of the host attacked happens to be a connective tissue cell, a sarcoma results.

According to this view there are possibly two species of parasite. One only endows the cell it fertilises with powers

of multiplying, thus giving rise to "benign" tumours. The second endows the "monstrous hybrid" with the power of dissolving other cells and tissues, and thus these "malignant" growths readily invade contiguous tissues and are able to encroach on lymphatics and blood vessels, and thus form metastases. Combine this idea with the facts put forward in the lectures of Sir Henry Butlin, and we see that it *is* a "new animal," but of such a sort as has only hitherto been foreshadowed in some of the experiments as to the fertilisation of the sperms of the sea-urchin where "fertilisation" of a nature approaching that suggested above has already been achieved experimentally.

I am, Sir, yours faithfully,

R. C. T EVANS, M.B., B.S. Lond.

Herne Bay, Feb. 26th, 1912.

FATALITIES FOLLOWING THE INTRAVENOUS INJECTION OF SALVARSAN.

To the Editor of THE LANCET.

SIR,—In THE LANCET of Feb. 24th you publish a letter bearing the above title from "M.D." In the early months of 1911 we had frequent occasion to reply to similar alarmist reports of fatal accidents following the use of salvarsan. We do not deny that the patients whose cases he quotes all died. We should have been surprised if some of them had survived, for in the first case he mentions the patient was undoubtedly poisoned by a huge overdose of the drug. He received on Sept. 18th an intravenous injection of 60 centigrammes, and, apparently without any investigation to ascertain how much of the first dose he had eliminated, he received another full dose on Sept. 21st. Naturally he died. He was poisoned.

In the Geneva case the necropsy revealed that the patient was suffering from lepto-meningitis, *chronic* bronchitis, and broncho-pneumonia. Why, therefore, throw all the blame of his death on salvarsan? The Amiens case is like the first case quoted, in so far as apparently no trouble was taken to ascertain if the first dose had been eliminated before the second was administered. If strychnine or morphia were administered in full doses, and these full doses were repeated before the patients had eliminated the first doses, disaster would certainly follow. And yet it is admitted that both strychnine and morphia are invaluable drugs. But in their wise administration a little common sense is usually employed. It is a great and deplorable misfortune that in using or criticising the use of salvarsan ordinary intelligence, and in a far greater degree common sense, have been in abeyance in many cases.

We have now had a considerable experience of salvarsan comprising more than a hundred injections, most of which were administered intravenously. We have never had the least occasion for anxiety regarding any one of these patients. In addition, we know of close on 1400 injections which have been administered without accident by our friends. We believe most strongly that a careful technique and the choice of suitable patients will eliminate most of the risks, though we are firmly persuaded that an intravenous injection should never be given single-handed and without the careful preparation of the patient and a thorough examination of his powers of elimination.

In conclusion, we may again affirm that we regard salvarsan as one of the greatest boons conferred on suffering humanity in our time. We are, Sir, yours faithfully,

G. S. STOPFORD-TAYLOR.

Liverpool, Feb. 26th, 1912. R. W. MACKENNA.

THE TREATMENT OF TUBERCULOSIS AND THE SANATORIUM QUESTION.

To the Editor of THE LANCET.

SIR,—In THE LANCET of Feb. 24th, p. 546, you published the names of those gentlemen who had been appointed by the Chancellor of the Exchequer to report at an early date upon the consideration of general policy in respect of the problem of tuberculosis in the United Kingdom, in its preventive, curative, and other aspects, which should guide the Government and local bodies in making or aiding provision for the treatment of tuberculosis in sanatoriums, or other institutions, or otherwise. You refrained, however, from commenting on the constitution of the committee. Will you therefore permit me to offer a few criticisms on the appointments which have been made, such criticism having been founded, not only on my own opinion, but upon the views of several prominent members of the profession with whom I have discussed the matter. No one will dispute the wisdom of the formation of such a committee, but whoever decided upon its composition was not well advised. The reference to the committee is a wide one, and therefore various schools of thought ought to have been represented, instead of which every member of the committee is known beforehand to be pledged to support the sanatorium movement. This fact alone must serve to weaken any recommendations which the committee may arrive at. Further, there are some remarkable omissions; there is no physician on the committee who is a consulting physician to or on the senior acting staff of one of the special hospitals for diseases of the chest in London. As Mr. Clement Lucas has pointed out in the *Times*, no surgeon finds a place on the committee. Surely, also, the scientific side of the question should be represented, and a member of the medical profession who has devoted himself mainly to laboratory work should also have been selected. Finally, the experience of general practitioners, who have been obliged to treat patients in their own homes, would have been of the utmost value. For these reasons, Sir, among others, I venture to utter a protest against the composition of the committee, feeling sure that the members of the profession generally would look with more favour on the work of the committee had the members thereof been selected with a more open mind. As the committee is constituted at present it is almost comparable to the Christian Scientists forming a committee of their own number to pronounce upon the value of their cult.

In the *Times* of Feb. 20th appeared an excellent and suggestive letter from Dr. E. J. Steegmann pleading for a continuance of the research on tuberculosis commenced by the Royal Commission. It is sincerely to be hoped that his contentions will be acted upon, but unless the constitution of the Chancellor's committee be modified there is reason to fear the free and liberal spirit required will be wanting.

I am, Sir, yours faithfully,

Feb. 26th, 1912. F.R.C.P.

THE MEDICAL PROFESSION AND THE NATIONAL INSURANCE ACT.

To the Editor of THE LANCET.

SIR,—On p. 537 of your current number Dr. W. J. Le Grand, after quoting the words of the first paragraph of Part II. of the Fourth Schedule of the above-mentioned Act—viz., "(1) Medical treatment and attendance for any persons dependent upon the labour of a member"—asks some questions thereon.

The word "dependent," *as used in this Act*, is defined in Section 79, and may comprise very much more than the "wives and children" of insured persons, particularly if the far-reaching definition given in Section 13 of the Workmen's Compensation Act be resorted to. This statement probably will answer Dr. Le Grand's first question as it now stands; but if we shift the word "only" (in the question) so as to make it the seventh instead of the fourth word, the question will read thus: "Does it apply to relatives of *only* members of approved societies?"—an entirely different question, but the one which, I think, Dr. Le Grand really means to ask. It will be found that, with one exception, "additional benefits" are confined, and intentionally so, to those who are "members" of approved "societies." This is made clear by the very wording—not only of the first paragraph itself "..... members" ["members" of what?], but also by that of the many sections in the Act in which "additional benefits" are mentioned.

An approved society may give "additional benefits" to insured persons who are "members" of that "society" if there happens to be a sufficient surplus following a Treasury valuation of the assets and liabilities of the society, which valuation may be made at irregular times and after irregular intervals, although, presumably, every three years—Sections 36 and 37. Observe "society" and "member."

The proviso to Section 9 (1) confers a favour which, although not specifically an "additional benefit," is practically such, but the favour is confined to "members" of approved societies. Section 9 (2) deals with cases (of reduction of

rate of benefit) as to which a society *or* the Insurance Committee administers the benefit, and the society *or* Insurance Committee has to make provision for the grant of *additional* benefits, whatever these may be, which are mentioned in the long list of such which is given in Part II. of the Fourth Schedule; and for these the society *or* the Insurance Committee will have to pay. This is the exception in which it is stated clearly that the Insurance Committee has to administer some "*additional* benefits." All other sections contemplate the *society* paying for any of the additional benefits in the list.

All this seems to point to the idea that the original, central, and controlling method of working the entire Act was by and through the societies, and the societies alone. Section 13 deals with those only who are "members" of an approved society. Section 14 (1) "..... additional benefits shall be administered by the society or branch of which the persons entitled thereto are *members*, *except* where such benefits are *in the nature of medical benefits*, in which case they shall be administered by, and through, the Insurance Committees."

Now, notwithstanding that the 14 paragraphs in Part II. of the Fourth Schedule are headed "Additional Benefits," it yet may become a question whether paragraph 1 can be said rightly to deal with a "medical benefit" at all, although it mentions something "in the nature of a medical benefit." The paragraph says "medical treatment and attendance," and not "medical benefit," as we find in Section 8 (1) (a) and Section 15 (1). To the extent that paragraph 1 may be said to deal with "additional benefit," the societies would administer for their "*members*"; to the extent that it is concerned with what is "in the nature of medical benefit," the societies are excluded and the Insurance Committees alone take up the work—i.e., *pay*. There is no definition in the Act of the phrase "medical treatment and attendance."

Elements of doubt might creep into Section 15 (2), Section 15 (4), and Section 17 (1). Thus, Section 15 (1) the Insurance Committee, for the purpose of medical benefit, makes arrangements with practitioners, &c.; (2) says that the arrangements shall secure that insured persons shall be attended by practitioners with whom arrangements are made, but it does not exclude the possibility that the arrangements may secure something additional, such as subsidiary arrangements for "medical treatment and attendance" on those who may happen *not* to be insured—e.g., "dependents" of those who *are* insured. Again, Section 15 (4), which mentions "*persons*" (not "insured persons" nor "members") entitled to receive "medical attendance and treatment," might be said to include "dependents." And finally, Section 17 (1), which deals with *sanatorium* benefit being extended to dependents of insured persons, says that in such a case the Insurance Committee shall arrange "for the treatment of such dependents." It does not say "for the sanatorium treatment" or "for such treatment," and he would be a bold man who would fly in the face of the plain meaning of words as they have been been arranged and declare that, "of course, *sanatorium* treatment is meant." If sanatorium treatment was meant it ought to have been stated, and since the marginal note is no part of an Act of Parliament, the marginal note here cannot be prayed in aid. A document must be interpreted as it is worded, and not as something else which the framer may have intended but did not express.

Whatever body, whether Insurance Committee *or* society, arranges the "rate of remuneration" for the work mentioned in paragraph 1 of Part II. of the Fourth Schedule with the practitioners (if any such will be forthcoming for the purpose) will have to pay.

I am, Sir, yours faithfully,

Lincoln's Inn, Feb. 26th, 1912. BERNARD O'CONNOR.

To the Editor of THE LANCET.

SIR,—We, the undersigned, being medical officers of Medical Missions in Great Britain and Ireland, beg to declare that we believe that the "National Insurance Act" will affect medical missions adversely in the following ways:—

1. Patients will not be allowed to choose mission doctors unless such doctors are on an approved panel, and there appears to be but little chance that these salaried officers will find a place on such a panel.

2. Subscriptions must necessarily decrease as the usual subscribers to medical missions will find it difficult or impossible to pay their share of the insurance contribution and subscribe to a charity.

3. The personal relationship between doctor and patient, which is a prominent factor in medical missions and a helpful part in the progress of the case, will to a great extent be lost when the patient is treated under contract practice.

We are, Sir, yours faithfully,

SIDNEY BOYD, M.S., F.R.C.S.
H. J. BUMSTEAD, M.B., B.C.
WILLIAM GAULD, M.D.
PERCY LUSH, M.B., Ch.B.
JOHN LONG, M.D.
H. A. MOODY, M.R.C.S., L.R.C.P.
W. G. MACDONALD, L.R.C.P. & S.
S. S. MCFARLANE, L.R.C.P. & S.
R. FOSTER OWEN, M.R.C.P.
W. SHRUBSHALL, L.R.C.P. & S.
JOHN STANSFELD, M.R.C.S., L.R.C.P.
G. O. TAYLOR, M.B., M.R.C.S.
P. D'ERF WHEELER, M.D., F.R.C.S.
C. VOSPER, M.R.C.S., L.R.C.P.

THE CHOLERA EPIDEMIC.

(FROM THE BRITISH DELEGATE TO THE CONSTANTINOPLE BOARD OF HEALTH.)

A SOMEWHAT prolonged absence from Constantinople has prevented me from continuing the record of the cholera epidemic in this and adjoining countries from the point to which it was brought in my last letter on the subject.[1] The excellent summary of the epidemic, however, which appeared in the Annus Medicus on Dec. 30th, 1911, has to a great extent filled the gap, and it only remains to add the following few additional details to supplement that summary and bring the record down to the present date.

Cholera in Russia.

The 1911 epidemic of cholera in Russia was an exceptionally mild one. It came to an end on Oct. 30th (Nov. 12th). The total number of cases for the whole Russian Empire was put at 3313, and that of deaths at 1596. These figures are in striking contrast with the 216,091 cases and 101,002 deaths recorded in the 1910 epidemic. They may reasonably justify the hope that the cholera infection has now lost most of its virulence in Russia, and that there may perhaps be no revival of the disease there in the coming summer. The epidemic of last year was almost entirely confined to the valley of the Volga and some of the Caucasian provinces.

Cholera in Constantinople.

The epidemic here rapidly declined (after the date of my last letter), as shown by the following figures:—

Week ending Sept.	4th	.....	324	cases,	155	deaths.
,,	,,	11th	.....	258	,,	145	,,
,,	,,	18th	.....	256	,,	140	,,
,,	,,	25th	.....	131	,,	91	,,
,,	Oct.	2nd	.....	181	,,	97	,,
,,	,,	9th	.....	179	,,	119	,,
,,	,,	16th	.....	52	,,	48	,,
,,	,,	23rd	.....	15	,,	6	,,
,,	,,	30th	.....	5	,,	1	,,

The totals since the beginning of the epidemic, on May 21st, were 2619 cases and 1484 deaths. The outbreak was rather more severe and more prolonged than that of 1910. The above figures do not include cases and deaths occurring among the troops in the capital. Such cases continued to occur in the garrison until the end of the year and well on into January. As recently as Jan. 14th one case, and on the 17th two cases were seen among the Constantinople troops, in spite of the cold weather prevailing at the time. A revival of the disease in the spring in this city must be regarded as almost certain.

Cholera Elsewhere in Turkey.

It will be impossible to give in detail, even if space permitted, the history of the epidemic in the Turkish provinces.

[1] THE LANCET, Sept. 16th, 1911, p. 853.

The returns received have been incomplete and irregular. The following figures have been officially published. It will be seen that the bulletins were issued at very unequal intervals, but the figures have a relative value sufficient to justify their publication. Before August 21st the bulletins gave no totals for the whole country. From that date onwards the totals were as follows :—

Bulletin of August		21st	... ...	163	cases,	152	deaths.
,,	,,	22nd	... ...	107	,,	124	,,
,,	,,	22nd (bis)	...	178	,,	151	,,
,,	,,	23rd	... ...	262	,,	228	,,
,,	,,	28th	... ...	86	,,	89	,,
,,	,,	30th	... ...	162	,,	115	,,
,,	,,	30th (bis)	...	155	,,	139	,,
,,	Sept.	4th	... ...	188	,,	228	,,
,,	,,	6th	... ...	164	,,	222	,,
,,	,,	6th (bis)	...	402	,,	607	,,
,,	,,	11th	... ...	352	,,	335	,,
,,	,,	11th (bis)	...	550	,,	560	,,
,,	,,	16th	... ...	207	,,	210	,,
,,	,,	16th (bis)	...	277	,,	285	,,
,,	,,	19th	... ...	303	,,	348	,,
,,	,,	19th (bis)	...	293	,,	270	,,
,,	,,	23rd	... ...	358	,,	338	,,

The above figures referred to no clearly defined periods of time Where two bulletins were issued on the same day they contained fresh figures (usually for different parts of the country), and the figures did not overlap. After Sept. 23rd an attempt was made, but not very successfully, to publish records at more or less fixed intervals, as shown in the following bulletins :—

Date of bulletin.	Period covered.	Cases.	Deaths.
Sept. 30th	Sept. 15th to 23rd ...	557 ...	682
Oct. 8th	Sept. 23rd to Oct. 1st ...	489 ...	555
,, 18th	Oct. 2nd ,, ,, 10th ...	426 ...	604
,, 27th	,, 11th ,, ,, 19th ...	519 ...	527
Dec. 10th	,, 19th ,, Dec 1st ...	1006 ...	1078
" 15th	Dec. 1st ,, ,, 8th ...	32 ...	29
,, 26th	,, 8th ,, ,, 18th ...	41 ...	933
Jan. 6th, 1912	,, 18th ,, ,, 30th ...	34 ...	34
,, 10th, ,, ...	,, 30th ,, Jan. 6th ...	37 ...	49
,, 24th, ,, ...	Jan. 6th ,, ,, 21st ...	53 ...	50

The rise in deaths in the bulletin for Dec. 8th to 18th was due to a severe outbreak of cholera among pilgrims at Mecca, 651 out of the 933 deaths figuring in that bulletin being ascribed to that city. But this figure was itself below the truth. From information received from the Board of Health's officials in the Hedjaz towns it may be gathered that the following has been the course of the cholera epidemic in that province in recent months.

The first cases in Mecca were seen on Sept. 1st, when three Javanese pilgrims from Singapore were found to be ill with the disease. The epidemic rapidly gained ground, and by Oct. 1st 366 cases and 329 deaths had been recorded. For the next seven weeks there were few or no fresh cases ; but on Nov. 21st, when the fêtes of Kurban Bairam were drawing near and the number of pilgrims at Mecca was approaching its maximum, cholera reappeared. In a week over 200 fresh cases had occurred, and by Dec. 20th the totals (including the September returns) amounted to 1648 cases and 1565 deaths.

In Medina the disease was first seen on Sept. 7th, when the bodies of two pilgrims from Malibar were found dead, and death was shown to have been due to cholera. These men had come from Mecca, so that apparently Medina obtained the infection from that city and not from the north, although a few cases of cholera were occurring in Damascus at about that time. The disease did not spread very rapidly (the numbers of pilgrims in Medina would be small at that period) ; by Nov. 19th 190 cases and 157 deaths had been recorded. No cases occurred subsequently, and Medina seems to have escaped reinfection by the pilgrims returning from Mecca after the fêtes. No cases occurred also at the Tebuk lazaret on the Hedjaz railway, and it is noteworthy that on this occasion cholera does not appear to have spread northwards by land from Mecca, though many cases (about 30) occurred among pilgrims arriving at The Tor lazaret by sea from Jeddah and Yanbo. At Jeddah 323 cases and 310 deaths were recorded between Dec. 2nd and 25th.

At Damascus 1 case of cholera occurred in August (in a pilgrim from Angora) ; in September the disease became epidemic there ; and between Sept. 8th and Nov. 5th 143 cases and 115 deaths had been registered.

Mesopotamia and Irak-Arabi (the regions round the north end of the Persian Gulf) were also visited by the disease. In the Bagdad vilayet 492 cases and 345 deaths were recorded between May 29th and Oct. 28th. (In the previous winter 819 cases and 723 deaths were registered in this vilayet between Oct. 16th, 1910, and Jan. 2nd, 1911.) In the Basra vilayet, after a few cases in July, cholera reappeared on Oct. 20th, and between that date and Oct. 27th 366 cases and 260 deaths occurred there. In the Bahrein Islands some 200 or 300 deaths from cholera were recorded in the months of November and December.

The latest bulletin for the whole of the Turkish Empire, bringing the returns down to Jan. 21st, shows that cholera was then still present at Janina, Loros, Biredjik, Aintab, Adana, Tarsus, Angora, Panderma, Hodeidah, Acre, and Kharput (or in the neighbourhood of these places)—that is to say, the infection was still present in such widely separated regions as Albania, Asia Minor, Syria, Palestine, and the Yemen. Later telegrams from Aleppo also show that cholera exists there.

Cholera in other European Countries.

For the present cholera is quiescent in European countries other than Turkey. The three last bulletins from Italy state that in the week ending Dec. 24th 35 cases and 14 deaths were recorded, in that ending Dec. 31st 6 cases and 1 death, and in that ending Jan. 7th no cases or deaths. All these cases and deaths had occurred in the Caltanisetta, Girgenti, and Syracuse provinces of Sicily, and none on the mainland.

An official statement was recently issued by the Austrian Government to the effect that during the year 1911 88 cases of cholera and 40 deaths were registered in the whole of Austria. These were distributed as follows : 6 cases and 3 deaths in Lower Austria (including Vienna) ; 2 cases and 1 death in Styria ; 70 cases and 32 deaths on the coast (including 42 cases and 16 deaths in Trieste) ; and 10 cases with 4 deaths in Dalmatia (at Cattaro and Arlu). The totals for Hungary are not given ; the disease was still present there in December ; between Dec. 10th and 16th 19 cases and 12 deaths were seen in four different places in Hungary, and between Dec. 17th and 23rd 2 cases and 1 death.

Constantinople, Feb. 14th, 1912.

MOTORING NOTES.

(FROM A SPECIAL CORRESPONDENT.)

Concerning Various Auxiliary Methods of Suspension.

Although the ordinary laminated spring fulfilled its purpose as regarded the horse-drawn vehicle, the advent of the modern motor-car and the high speeds consequent on its use have called for a further device to take up the vibrations occasioned by the rapid motion, especially on bad roads. These vibrations, the result of road inequalities, are due to the consequent rebound. Many attempts have been made to overcome these drawbacks, which cause discomfort to car passengers and slipping of the tyres on the road with its excessive wear of the tyres. Elastic spring shackles, such as are fitted on the Daimler, Rover, and Standard cars, are a favourite means. The "Hobson," made by Messrs. Hobson, Limited, of Vauxhall Bridge-road, is of this type, and so is the "Amortisseur J. M.," sold by Messrs. Jacquet, Maurel, and Condac, of 92, Gloucester-road, London. These can be fitted without modification to the existing framework of almost any make of car. The last-named shackles are enclosed in a cylindrical casing, which protects against the entrance of dirt and helps also to resist any tendency towards side-play. The "Telesco," made by the Polyrhoe Carburetters Company, of 144, Great Portland-street, combines, in addition, a sort of liquid dash-pot, a method employed on many kinds of machinery, in which work is absorbed to neutralise the rebound.

Practically it is the rebound that causes the greater part of the discomfort. An ideal solid dash-pot method has been introduced in the Gabriel Rebound Snubber, sold by Messrs. Brown, Brothers, Limited, of Great Eastern-street, London, E.C. This consists of a half-circle base secured to the frame

of the car by a clamp with a set screw; the other half of the circular base is suspended on a stud and sleeve, around which is a coil spring. The base is encircled by four coils of Balata belting, faced with a flexible metal band and enclosed in a dust-proof case. The belting is fastened to the axle by an adjustable clamp. When the car strikes an obstruction the springs compress, the expansion of the coil spring takes up the slack in the Balata belting, and as the spring starts to rebound, the coils of metal-faced belting passing over each other create a friction that increases as the coil spring compresses, thus steadying the car-springs and really making the car "forget to jar." I tried the snubber on a road after having driven over the same route on a car not fitted with it, and noticed a great difference; bumps previously felt were conspicuous by their absence, and the deadening effect to rebounds was most marked.

The Atlas Triple Expansion Pulsating Tyre Pump.

The old saying that "the luxuries of one age are the necessities of the next" certainly applies to motoring accessories. A few years ago most motorists had to pump up their tyres by hand, and but few indulged in labour-saving mechanical contrivances. Now the hand inflation of tyres is being replaced by less laborious devices. A turn at the pump may be invigorating as exercise, but it is inconvenient when engaged on a professional round. Motoring doctors, therefore, will welcome the pulsating pump, recently introduced by the Atlas Non-puncture Inner Case Syndicate, Limited, of High-street, Kensington. All that is needed is to remove a sparking plug and to turn the pump into the exposed tapping by hand. The union nut is attached to the top of the pump, and the screw hose coupling to the tyre stem; the engine is started and the air-gauge shows when the desired pressure has been obtained. There is no need to stop the engine when changing to another tyre. The pump can be attached to any car in less than three minutes, and will inflate a tyre in less than four. The only point to remember is to run the engine slowly, for the pump will not operate at its full efficiency if the engine is permitted to race.

Concerning Carbonisation.

The deposit of carbon on the piston of a petrol engine is one of the commonest causes of pre-ignition and "knocking," and occurs sooner or later with all internal combustion motors. The length of the period of immunity depends greatly, if not absolutely, on the care of the owner in regulating the quantity of lubricating oil that his motor receives, though its quality is also a factor. Curettings from pistons and cylinder walls have shown, in addition to carbon deposit, a certain amount of road grit, which might be obviated by an efficient filter over the air intake. Carbon removers have been introduced, but it is as well to adjust the flow of lubricating fluid to the minimum needed by the engine prior to experimenting with them. If efficacious, they are simpler than dismantling the engine to scrape the piston. Still, the use of a good brand of lubricant (such as the products of the Vacuum Oil Company, Messrs. Duckham and Co., Messrs. Wakefield, and Messrs. Butterworth), and *not more than is needed of it*, is preferable. An up-to-date means of rendering unnecessary the removal of the cylinder covers is the oxygen jet ignition, which consists of opening all the available orifices and directing a jet of flame and oxygen gas on all the carbonised surfaces. This method, which is known as Watkin's patent, can be carried out at the premises of Messrs. Sully and Co., Limited, 10, Old Town Clapham, S.W. I understand that other depôts for this treatment will shortly be available.

A Useful Motor Glove.

The Continental Tyre and Rubber Company, Limited, who are probably known to all motorists as makers of excellent tyres, also produce a comfortable motor glove, with a palm of leather and a back of a special waterproof material. These gloves are comfortable and keep the hands perfectly dry.

The Daimler Sliding Sleeve Engines.

Those interested in this type of engine should write to the Daimler Company for a copy of a little booklet recently issued entitled, "Some Points Concerning the Daimler Sliding Sleeve Engines." This explains in detail the working of these engines and their advantages, and includes drawings to show the operation of the sleeves.

The De Dion Bouton Motor Carriages for 1912.

THE 1912 catalogue of Messrs. De Dion Bouton, Limited, which has just been issued, is above the average level of such publications. In addition to illustrations of the numerous types of their carriages it contains interesting descriptions of the structure of their cars, which can be read with advantage by the owners of any make of car.

LIVERPOOL.

(FROM OUR OWN CORRESPONDENT.)

Health of Liverpool.

THE medical officer of health's latest report to the health committee showed a considerable fall in the annual rate of mortality. The rate was 19·9 per 1000 of the inhabitants, as compared with a rate of 22·6 per 1000 a year ago; or a decrease of 37 in the total number (288) of deaths registered during the week. It was inevitably among the aged and the young that the mortality predominated; 58 persons who had reached the age of 70 years, and 81 not exceeding a year old being cut off. The principal causes were respiratory and tuberculous diseases, chiefly the former. In the corporation hospitals last week there were 632 patients, the largest number and the most serious cases being those of phthisis.

A Wireless Telegraphy Station at the University of Liverpool.

Unmistakable evidence of the progressive character of the University is furnished by the fact that a wireless telegraphy station has been installed in connexion with the electrical engineering department. It is an experimental station, intended to enable students to obtain some practice in the operation of the system. An aerial conductor, 150 feet high, with a horizontal length of about 600 feet, has now been erected between the central tower above the electrical engineering laboratories on the west side of Brownlow-street and the Victoria Tower of the University in Brownlow-hill. The apparatus has been designed by Professor Marchant and constructed by his staff of students. It has received the official recognition of the Postmaster-General.

West Derby Guardians and the Certification of Pauper Lunatics.

At the recent meeting of the West Derby board of guardians approval was given to a recommendation of the finance committee that in the event of a medical practitioner being called in at Mill Road Infirmary to certify cases of detention under the Lunacy Act only the services of medical men residing in the union shall be obtained. This resolution partakes of the nature of a "pious opinion" on the part of the guardians, as it really rests with the magistrate, on duty for the occasion, to "call to his assistance" any qualified medical man whom he may desire, even though he may not have "paid rates in the union."

Banquet to Sir William and Lady Lever.

It has been arranged by the staff of the Liverpool School of Tropical Medicine to entertain Sir William and Lady Lever at dinner on their return from South Africa. The dinner will take place at the Adelphi Hotel this week. The Earl of Derby (Lord Mayor of Liverpool and honorary Vice-President of the school) has kindly consented to preside. Sir William Lever is the chairman of the School of Tropical Medicine.

The Fellowship of the Royal Society and the University of Liverpool.

Liverpool is much gratified at the selection by the Royal Society of two of its professors, Professor Benjamin Moore and Professor Robert Newstead. The former is the Johnston professor of bio-chemistry at the University of Liverpool. He is distinguished for his researches in physiological chemistry, especially in the domain relating to the equilibrium and metabolism of cells. Professor Moore has made important advances by his application of physico-chemical methods to the solution of biological problems. He is one of the joint editors of the *Bio-Chemical Journal*. Professor Newstead

occupies the Dutton memorial chair of entomology at the University and has done important work in connexion with the School of Tropical Medicine.

Feb. 27th.

MANCHESTER.

(FROM OUR OWN CORRESPONDENT.)

The Sex of School Medical Inspectors.

THE Lancashire Education Committee at its recent meeting decided to advertise for a school medical inspector. A discussion took place as to whether female inspectors should be debarred from applying. It was pointed out that a medical inspector for the county authority was somewhat different from that of a medical inspector of a county borough. The county inspector had a great deal of hard travelling to do and many extra difficulties to contend with. It was decided to confine the appointment to male applicants.

Day Nurseries.

An institution such as the Salford Day Nursery for Children, which has carried on its work for 22 years, and which is open each day except Sundays, for taking care of babies who cannot walk at a charge of 4*d.* daily, and for older children at 2*d.* a day, is worthy of support from the public. The attendance averaged about 20 a day, a total of 4998 during the year. The children's pence amounted to £54 and the subscriptions and donations to £74.—At the nineteenth annual meeting of the Manchester Day Nursery, which is situated in the crowded centre of Hulme, it was stated that last year there were 2912 attendances and during the past 14 years a total of 38,382. The Poor-law contribution to the funds is, with the approval of the Local Government Board, to be quadrupled. At this institution the charge for children is 3*d.* a day. One speaker at the meeting eulogised "the application of life-saving methods such as this," pointing out at the same time that there is a direct relation between the rate of infant mortality in a great city and the number of mothers who had to go out working with no one to take proper care of their children in their absence. Another speaker pointed out that the Home for Lost Dogs had received more support during the year than the Hulme Day Nursery. There were about 3000 attendances yearly, and each child received three meals, the cost of each of which was barely ½*d.*

Henshaw's Blind Asylum: its Work and its Financial Needs.

At the annual meeting of the subscribers to Henshaw's Blind Asylum it was stated that there was again a heavy deficiency on the year's working. The asylum gives the very best education, both elementary and technical, to 200 boys and girls and adults in the schools, and in addition the asylum authorities place within the reach of their pupils the means of livelihood which the blind people themselves above all things desire. In their own workshops they have 60 blind men and women, most of whom lived in houses of their own. They also gave weekly grants, amounting in the aggregate to £1000 a year, to aged and infirm blind people who were unable to work. About one-half of the blind people in the country lost their sight after reaching adult age, often after they had settled down in homes of their own with wives and children. The asylum educated, trained, and employed close upon 400 blind people ranging from infancy to old age. The annual expenditure was £2984, with a deficiency on the income and expenditure account of £978, and an actual deficiency on the year of £1169. Hence the necessity for an appeal for more funds if the usefulness of the institution is to be maintained.

Feb. 27th.

NEWCASTLE-ON-TYNE.

(FROM OUR OWN CORRESPONDENT.)

The College of Medicine.

THE annual meeting of the council of the University of Durham College of Medicine was held recently, Professor Sir G. H. Philipson, President of the College, being in the chair. Others present were Professor P. Bedson, Professor R. Howden, Professor T. W. McDowall, Mr. Cecil Cochrane, Mr. Alderman Cromie, Mr. J. E. Gibson, Mr. W. J. Sanderson, and Dr. J. T. Merz. The annual report of the council was approved for submission to the annual court of governors. Referring to the year's work, the report stated that the work had been carried on in compliance with the regulations of the Board of Education, and it was expected that a substantial grant on the year's work would shortly be paid by the Board. Further, it was stated that an agreement had been arrived at between the honorary staff of the Royal Victoria Infirmary and the council of the College, by which it was hoped that the clinical instruction in the infirmary would be recognised for the purposes of a grant by the Board of Education. The result of an appeal for funds to pay off the debt on the new buildings and to provide endowment had been disappointing. Several changes in the staff were notified. Dr. T. Eustace Hill, medical officer of health of the county of Durham, succeeds Dr. H. E. Armstrong in the chair of public health. Dr. F. A. Bainbridge is now professor of physiology, vice Sir Thomas Oliver, who has resigned this chair and has been appointed adjunct in the chair of medicine, already held jointly by Sir G. H. Philipson and Dr. David Drummond. Professor Bainbridge's appointment is the first instance of a whole-time professor of physiology in Newcastle.

Royal Victoria Infirmary.

The annual court of the governors of the Royal Victoria Infirmary was held on Feb. 24th. There was a large attendance under the presidency of the Lord Mayor, Sir William Stephenson. The reports from various committees were received and adopted. The Lord Mayor, in moving the adoption of the general report, alluded to the illness of Sir Riley Lord and to the death of Lady Oliver. It was agreed to send letters of condolence to Sir Riley Lord and to Sir Thomas Oliver. Sir William Stephenson further pointed out that for the first time the current income had met the current expenditure, and that the deficit of £3000 of last year had been turned into a surplus of £856. The most satisfactory feature about the income was that the amount of money subscribed by the workmen continued to increase year by year. Reference in one of the reports occurred to a new admission scheme, which provides that instead of admissions coming through various members of the honorary staff, all admissions shall be made through one portal and one medical authority. This would so regulate the system of admissions that each patient would get a fair turn, having strict regard to the question of urgency. In future, it was intended to make strict inquiry into the social condition of the patients, so that those who could afford to pay for outside medical aid should not be allowed to abuse the benefits of the hospital and keep out deserving cases. The cost of the new scheme would be about £4500, and it would be complete in about six or eight months. In the analysis of the subscriptions committee, Mr. Charles Irwin observed that the Northumberland miners during the past year had contributed £4232, and the Durham miners £4619. From the county of Durham, however, they had had 425 more cases than from Northumberland, and for these additional cases Durham had only paid £387. During the last six years there was a deficiency of £7125 in the receipts for the cases received from Durham. In reply to a question, Mr. Irwin stated that the miners of Northumberland paid £4 14*s.* 5*d.* per patient and the miners of Durham £3 9*s.* 10*d.* per patient. The remarks made in connexion with the new admission scheme and those above in connexion with the finance of the infirmary may be taken together and afford material for thought. It is certainly to be hoped that the new admission scheme may be able to grapple with the question of hospital abuse. Whether it will be more than a pious hope is doubtful when the remarks above quoted from the subscriptions committee are considered. The opening speech of the chairman, the statement of the finance committee that the workmen's contributions had gone up £1541 during the past year, and also that only another £1000 were needed to make these contributions into the round sum of £20,000, and the calculation of the amount subscribed per patient by different sections of the community as shown by Mr. Irwin, seem to point to the desirability of the system of coöperation by means of small weekly contributions, such as are given by the workmen of this district. The principle of contributions is proper, but there is the tendency locally to regard such contributions as "something paid to a club," and consequently necessitating a return. That

this is no mere vague idea is clear from the nature of the question asked concerning relative contributions by the Northumberland and Durham miners. Whether in these circumstances the new admission scheme will be able to work is doubtful. It may, perhaps, be remembered that I found it necessary to make observations similar to these on the occasion of the presentation of other annual reports, and the same tendency which prompted those remarks last year is to be seen in the proceedings of this year's annual court of governors at the infirmary.

Feb. 26th.

BRISTOL AND THE WESTERN COUNTIES.

(FROM OUR OWN CORRESPONDENTS.)

The University of Bristol and Agricultural Research.

A SHORT time ago allusion was made in these columns to the offer made by the Board of Agriculture to the University of Bristol of a capital sum of £5000 and an annual grant of £3500, subject to certain conditions. These were the absorption of the existing Fruit and Cider Institute into the station which the Board wishes established; the local contribution of a capital sum of £5000; and the application of £300 a year, left by the late Lord Winterstoke for agricultural research, to the upkeep of the station. Lady Greville Smyth has subscribed £1000, and sums of £500 each have been promised by Lord Portman and the Right Hon. Henry Hobhouse, while other subscriptions and promises bring the total up to £3500. The balance of £1500 should be readily forthcoming in a district where the general prosperity is so closely bound up with that of agriculture.

Queen Victoria Jubilee Convalescent Home, Bristol.

At the recent annual meeting, presided over by the Lord Mayor of Bristol, Mr. F. W. Wills, the report showed that 1971 patients had been received during the year; there had been no deaths, and the great majority of patients had been much benefited. The total expenditure had been £2794 0*s.* 7*d.*, about £30 less than in the preceding year. The income for the year was £3206 6*s.* 10*d.*, consisting mainly of revenue from investments and income-tax rebate. Mr. Herbert M. Baker, chairman of the Bristol General Hospital committee, spoke of the indebtedness of this and kindred institutions to the home, which had received 680 patients from the hospital, 673 from the Royal Infirmary, 30 from the Eye Hospital, 72 from the Bristol Dispensary, and 17 from the Clifton Dispensary. He referred to the possible effects of the Insurance Act on voluntary institutions, and said that he believed the alarm felt in some quarters was largely unnecessary. The value of the home, he said, might be further gauged by the fact that the average daily number of inmates was 80, the cost per head being about £35 per annum.

An Unqualified Practitioner at the Bristol Coroner's Court.

Fortunato Vigna, describing himself as "M.D., U.S.A.," and alleging that he had a Turin degree in medicine, gave evidence at a Bristol inquest on a woman who died from malignant disease, but who had been treated by him for indigestion, constipation, and rheumatism; he also stated in his evidence that he had suspected "kidney trouble." The friends of the deceased had been induced to call in "Dr." Vigna by a newspaper advertisement of the "Cosmopolitan Homœopathic Institute for the Cure of Chronic Diseases," which, it was said, had a large and experienced staff of graduated and fully qualified assistants. Cross-examination proved that this staff consisted of Vigna and one or two other unqualified persons. It appeared that Vigna had three or four such establishments in Bristol. The jury added a rider to their verdict to the effect that frauds of this type should be suppressed.

The Bristol Medical Mission.

The annual meeting of the friends of the Bristol Medical Mission was held on Feb. 23rd. The medical report stated that 8176 patients had been treated at the dispensary, and 2087 cases had been visited at their homes. The financial statement showed an unfavourable balance of £44.

The Remuneration of Workhouse Medical Officers.

At the meeting of the Bristol board of guardians held on Feb. 23rd it was stated that three lady medical practitioners had applied for the post of assistant medical officer at Eastville workhouse. The salary is £125 per annum, with rooms and rations. After some discussion Miss H. I. Moss was elected. The Rev. A. Bray, who opposed the appointment, according to the local press, stated "that it was a cheese-paring policy which was responsible for the fearful state of chaos they had in the two workhouses. They were only appointing the lady because they could not get a man; and they could not get a man because they were not paying sufficient money."

A District Medical Officer's Salary.

At the last meeting of the Newton Abbot (Devon) board of guardians the medical officer for the Kingsteignton district applied for an increase in salary. He stated that his salary was 11*s.* 6*d.* weekly, which would hardly pay for the cost of the medicines. He added that there were very few vaccinations to be performed, and the "association nurse" attended most of the midwifery cases. Last year she attended 39 out of the 53 confinements. After some discussion the matter was referred to a committee.

The British Dental Association.

The Western branch of the British Dental Association held its winter meeting on Feb. 17th at the Devon and Exeter Dental Hospital. There was a good attendance, under the presidency of Mr. J. J. H. Sanders, of Barnstaple. Mr. Frederick Sleep (Plymouth) read an amusing paper on the Dental Aspect of Idiosyncrasy, Susceptibility, and Responsibility. Mr. R Willcox (Clifton) contributed an interesting paper on Pyorrhœa. Dr. Brennan Dyball, the anæsthetist to the Devon and Exeter Hospital, gave an interesting demonstration on the Combination of Ethyl Chloride and Ether for Dental Operations.

Enteric Fever and Shell-fish.

The medical officer of health of Devon, Mr. G. Adkins, in his report states that during the past quarter 31 cases of enteric fever were notified, and of these 3 were due to eating raw cockles.

Royal West of England Sanatorium, Weston-super-Mare.

The annual meeting of the subscribers of the Royal West of England Sanatorium was held on Feb. 17th. The medical report stated that during 1911 the patients admitted numbered 2045 (1037 men, 1008 women). This number was 277 less than in 1910, and the reduction was due to the facts that the sea-water baths were unavailable for six weeks, and that some patients stayed longer than usual. 1496 patients remained in the institution for 14 days, while the remaining 549 remained for longer periods up to three months. The financial statement showed that the income amounted to £4482, and that the sanatorium was free from debt.

Isolation Hospitals for Devonshire.

At the meeting of the Holsworthy (Devon) rural district council, held on Feb. 21st, the medical officer of health, Mr. W. G. Gray, reported that a scheme had been proposed by which Devon would be divided into four or five sanitary districts, each provided with an isolation hospital, and probably a medical officer of health would be appointed for the districts. Mr. Gray added that the Local Government Board inspector, Dr. R. J. Reece, had commented strongly on the need of isolation hospitals in the county, for between Plymouth and Devonport and Barnstaple there is practically no isolation hospital, and no isolation accommodation exists at Tavistock, South Molton, Okehampton, Broadwoodwidger, or in the Bideford rural district.

The West Cornwall Infirmary, Penzance.

Sir Clifford Cory, M.P., has sent a cheque for £400, being his first year's salary as a Member of Parliament, to the West Cornwall Infirmary. The gift will be very acceptable, as an adverse balance of about £300 exists against the charity, and funds were required for refurnishing and decorating the institution.

The Victoria Hospital, Swindon.

At the annual meeting of the subscribers of the Victoria Hospital, Swindon, it was stated that £1000 had been

bequeathed by Miss Bell, of South Marston. The King Edward Memorial Fund brought to the institution an endowment of £1080.

Feb. 27th.

WALES.

(FROM OUR OWN CORRESPONDENT.)

The Welsh National Memorial.

THE executive committee of the Welsh National Memorial has appointed as chief medical director Dr. Marcus S. Paterson, at present medical superintendent of the Brompton Hospital sanatorium at Frimley. One of his first duties will be to prepare a scheme for the provision of sanatoriums for the whole of Wales and Monmouthshire. Progress is being made towards the acquisition by the committee of the West Wales Sanatorium at Allt-y-Mynydd, about six miles from Lampeter, in Carmarthenshire. This institution, which has accommodation for 20 patients, has been in active working since July, 1908, the annual expenditure averaging £1500. It is situated on the slope of a hill, 850 feet above sea level, in grounds 13½ acres in extent. It is constructed of stone obtained in the neighbourhood, and is well designed for its purpose. The initial cost, exclusive of the land, was about £400 per bed. The land is held on lease for 999 years at an annual rental of £11 4*s*. It is proposed, if the institution is taken over by the memorial committee, that the sum of £10,000 shall be credited to the memorial fund from the three counties of Carmarthen, Cardigan, and Pembroke. The conditions on which the sanatorium committee suggests that the sanatorium should be transferred are that the management, together with all obligations as regards staff and buildings, should be taken over by the memorial committee from July 1st next, and that until adequate provision for sanatorium benefits for the whole of Wales and Monmouthshire is provided priority of admission should be reserved for patients coming from the three counties named. It is further suggested that life governors of the sanatorium should be asked to forego their claims to recommend patients for treatment in the institution. The Cardiff board of guardians is taking definite steps to provide for those under its charge a sanatorium in the neighbourhood of Penarth, and at some distance from the Cardiff workhouse. The question of special sanatorium provision is being considered by boards of guardians in other parts of Wales, but in view of the contemplated action of the memorial committee, that body has asked the various boards to delay taking action in the direction indicated.

Aberdare Isolation Hospital.

Although the town of Aberdare has an industrial population of over 50,000 persons it is very ill-provided with accommodation for isolating cases of infectious disease. At the time of a small-pox scare in 1873 a corrugated iron building was erected, but until the appointment of Dr. Morgan Rees as medical officer of health some eight years ago it was hardly ever used, although cases of infectious disease which ought to have been removed were rarely absent from the town. Dr. Rees made good use of the hospital during his term of office, and demonstrated that the inhabitants were quite willing to take advantage even of the meagre accommodation it afforded. He also proved the need for a larger institution, and one more in accordance with modern ideas. Pressure from their own medical officer of health, added to the insistent demands of the Glamorgan county council, at last induced the members of the urban district council to take steps to provide a more suitable hospital, and a few years ago plans were chosen after competition among architects, and a site was decided upon. The consent of the Local Government Board was not at first obtained for the loan it was intended to procure, but after falling in with some of the suggestions of the Board a second attempt is now being made, and a formal inquiry has been made on behalf of the Board by Dr. S. W. Wheaton. The proposed site is the property of the council, and it is expected that the buildings will cost about £20,000, a sum equal to £400 per bed. The plans show accommodation for three diseases. For scarlet fever patients there are to be 20 beds, including four in a convalescent block; for diphtheria, 18 beds, also including four for convalescents; and for typhoid patients 8 beds are provided. In addition to these there is provision for four patients in an observation block.

Feb. 27th.

SCOTLAND.

(FROM OUR OWN CORRESPONDENTS.)

The Carnegie Trust for the Universities of Scotland.

THE annual meeting of the Carnegie Trust for the Universities of Scotland was held in London on Feb. 22nd. Lord Elgin presided, and in presenting the report referred in the first place to the fact that the work of the past year completed the first decade in the history of the Trust. During the ten years £1,000,000 had passed their hands. The grants to the universities were fixed for quinquennial periods after visitation by a committee of the trustees, when every care was taken to discover the most urgent claims in each university. He could bear testimony to the improvements in the equipment of the universities which were visible at each visitation. With regard to the increased grants promised by the Treasury, it was possible that the trust operations might be affected thereby, but probably more as to the direction in which assistance might be given than in alteration of the amount. The alteration in the regulations as to payment of class fees which had become necessary last year owing to the insufficiency of revenue to meet the claims had been carried out without any difficulty or friction. Beneficiaries of former years had been continued on the old system. The adoption of the report was seconded by Lord Reay, and Sir Donald MacAlister and Sir James Donaldson spoke in appreciation of the work of the scheme. The report of the executive committee for the year 1910–11 shows the total income for the past ten years to have been £1,062,931. Of this, £63,546 were expended on research, £368,288 in grants to universities and colleges, £445,373 in payment of class fees for students numbering 11,480, and £30,158 in administration. Referring to the endowment of research, the report shows that in the past year there had been no falling off in either the quantity or quality of the output of work. In the departments of biology and medicine the report of the examiner states that the standard of excellence exhibited by the beneficiaries had been higher than it had ever been since the trust came into existence. Applications for fellowships, scholarships, and grants for the year 1911–12 must be lodged on or before April 1st with the secretary of the trust. The laboratory of the Royal College of Physicians had proved an important supplement to the research scheme. The laboratory was purchased in 1903 under an agreement for five years with the Royal College of Physicians and the Royal College of Surgeons under which these bodies agreed to continue their respective annual contributions of £750 and £200 towards working expenses. This agreement was renewed in 1908 for a further period of five years. Exclusive of the capital sum of £10,000 invested in the purchase of the buildings, the total sum expended on the laboratory had been £14,011 2*s*. 3*d*., and the excess of expenditure over income which had been met by the trust under the agreement amounted to £5215 12*s*. 9*d*.

Memorial to Lord Lister.

The Lord Provost of Glasgow presided on Tuesday over a meeting to consider the subject of a memorial to the late Lord Lister. There was a large attendance, many prominent medical men being present, and it was unanimously agreed that a memorial should be erected in Glasgow, where the Listerian doctrines first took practical shape. A committee was appointed to consider the suggestions as to the form which the memorial should take, and this committee will make a private report before a public meeting is held.

Feb. 27th.

TUBERCULOSIS AND SANATORIUM TREATMENT.—A lecture on this subject will be given at the Central Hall, Renshaw-street, Liverpool, on Tuesday, March 5th, at 8 P.M., by Mr. C. H. Garland, chairman of the Benenden Sanatorium, Kent. The Earl of Derby has consented to preside, and all interested in the subject are invited. Communications may be addressed to the medical officer of health at the municipal offices, Liverpool.

IRELAND.

(FROM OUR OWN CORRESPONDENTS.)

The Dublin Hospitals and the Insurance Act.

FOR some months past a committee, representative of the several Dublin hospitals, has been considering the probable effects of the National Insurance Act on the interests of the hospitals. In a letter published last week in the daily papers this committee invites the moral and material support of the public, declares that the subscriptions must fall off, but that the demand for service is not likely to diminish, and concludes as follows: "This crisis threatens the utility and existence of institutions the sole function of which is to alleviate stricken and agonised humanity by unremitting, unresting, and unquestioning solicitude. To prevent such a calamity we most anxiously urge the benevolent public not to relax their interest or reduce their subscriptions or gifts unless and until they are satisfied that the usefulness and needs of the hospitals have abated."

The Royal Hospital for Incurables.

The governors of the Royal Hospital for Incurables have decided to abandon the scheme of providing additional accommodation for advanced cases of tuberculosis. In view of the opposition roused among the residents in the neighbourhood, the managing committee thought it right to consult the general body of the governors, with the result stated. It is unfortunate that the beneficent scheme of the managing committee has been defeated by an opposition based largely on misunderstanding.

Death of Two Distinguished Irish Medical Men.

The deaths have occurred during the week of two distinguished Irish medical men—Dr. Henry FitzGibbon, consulting surgeon to the Royal City of Dublin Hospital, and Sir Francis R. Cruise, consulting physician to the Mater Misericordiæ Hospital.

The Tuberculosis Committee.

The constitution of the Tuberculosis Committee gives rise to some criticism from the Irish point of view. Only two members of a committee of nearly 20 are from Ireland, and these are both public officials. It is perhaps desirable that the Local Government Board and the Insurance Commissioners should be represented, but there should also be some one who could face the problem from the point of view of the practising physician.

High Death-rate in Irish Towns.

The death-rate in the various Irish towns during the month of February has been abnormally high. In the week ending Feb. 10th the rate in the Dublin registration area was 26·6 per 1000 per annum, and in Belfast it reached the enormous figure of 41·7, though it has now dropped very considerably, the last recorded rate being 26·9.

Honours for Irish Medical Men.

Two medical men have been appointed High Sheriffs for 1912—viz., Mr. J. J. O'Sullivan for the city of Waterford, and Mr. Charles McDonnell for the city of Limerick. Surgeon-General W. J. Fawcett, A.M.S. (retired), of Leecarrow, Carrick-on-Shannon, has been appointed a Deputy-Lieutenant of the county of Leitrim.

The Samaritan Hospital, Belfast.

At the annual meeting of the supporters of the Belfast Samaritan Hospital held on Feb. 20th it was reported that during the past year 529 extern and 279 intern patients had been treated. Ninety major operations were performed. There is a debt of £340 on the hospital, and strong recommendations were made by the speakers as to the importance of increased financial support for this most excellent and useful institution.

The Ulster Hospital for Women.

In aid of the new buildings of the Ulster Hospital for Women Lady Jaffé held an exhibition and sale of dolls at her house on Feb. 26th, which was a very great success, and which will considerably add to the finances of that institution.

Feb. 27th.

VIENNA.

(FROM OUR OWN CORRESPONDENT.)

Microsporon Disease of the Scalp in School Children.

WITHIN the last few years there have been several outbreaks of microsporon disease in Vienna public schools. Under our compulsory system of education these schools are attended by children belonging to all classes of the population, and the authorities recognising the danger of an extension of the infection invited Professor Riehl to lecture, before an audience of officers of public health, on the disease in question. The present series of outbreaks commenced in Vienna in the year 1909, and since that time over 1000 cases have been noted. Professor Riehl said that the disease was caused by the fungus called microsporon, and that a considerable epidemic of a precisely similar nature had also occurred in Paris. The general health of the affected children was in no danger, but the loss of hair in various places over the head was most unsightly. As it was important to recognise the existence of this condition as early as possible it would be necessary to examine each child in this respect. The clinical appearance of the affected head was very significant, the whitish-grey scabs and the short stumps of the broken hairs being conspicuous objects. The treatment by means of X rays and the application of a disinfectant hair lotion was simple and effective, and the necesary exposures to the X rays could be easily given in the special departments of the hospitals in Vienna. Professor Riehl advised regular inspection and notification of each case as absolutely essential for the suppression of the disease. He thought that isolation of the patients was not required, as in his opinion a dressing well applied over the head was sufficient to prevent dissemination of the infection.

The New Deaf and Dumb Institution.

In a few days the inmates of the old institution for deaf and dumb children will move into their new home, a short distance from Vienna. It will accommodate 150 boys and 50 girls, and satisfies all the requirements of modern hygiene. The old institution, which is now to be pulled down, has had a long and interesting history. In 1779, when the school was founded, it had only 12 pupils (6 boys and 6 girls), but at a later period 120 children could be received as inmates, and they were kept there until they were completely able to make themselves understood, and to earn their living. The institution afterwards served chiefly as a training school for teachers of the deaf and dumb, whilst the patients were admitted only from Vienna itself, the other towns and counties erecting separate schools for the deaf and dumb children of their own populations. Finally, the old institution accommodated only 40 boys and 20 girls. The teachers were early trained in the oral teaching of the inmates according to the so-called German method, whilst the "French" method of conversing by means of the fingers was abandoned as soon as the other system had become known. Important medical investigations into the etiology of congenital deafness and deaf-mutism were conducted in this home.

Growth of the Embryonic Heart after Separation from the Body.

In a paper read before the Gesellschaft der Aerzte, Professor Braus, of Heidelberg, who was present by invitation of this society, described experiments which he had made with the hearts of certain animals in the embryonic stage. After giving a historical sketch of the previous endeavours to make the heart live and grow after separation from the body, he said that he had been able to do so by keeping the organ in a liquid equivalent to physiological solution of chloride of sodium. He found that amphibia gave the best results. He could keep and examine the heart of the embryo of the frog in a mixture of fresh plasma from a frog with the tissue-juice of the frog. It was a very delicate operation to remove the heart from an embryo having a length of not more than one-fifth or one-sixth of an inch. In his experiments he succeeded in observing the rhythmic contractions of the organ and its growth for periods varying from three to ten days. The heart subjected to this kind of "cultivation" had no muscles or nerves, but the transmission of irritation took place by means of the plasmoderma, the fine fibres connecting the cells in the embryonic organ.

Feb. 26th.

AUSTRALIA.

(FROM OUR OWN CORRESPONDENT.)

Insanity in New South Wales.

THE annual report of the Inspector-General (Dr. Eric Sinclair) sets out that the total number of insane under observation in New South Wales on Dec. 31st, 1910, was 6177, an increase of 243, a rate much above the yearly average. The proportion of insane to general population was 1–274, which is the same as the last few years. There is still an excess of patients over the available accommodation. A new asylum to be built at Orange has not yet been begun, and that opened at Norwich has merely relieved overcrowding and not removed it. The provision of temporary accommodation has seemed a lesser evil than prolonging the overcrowding, and this has had to be entered upon. Two old buildings were adapted for temporary occupation, and at some other places calico dormitories were added. The report states that the present Lunacy Act requires amending, and particularly to provide for the admission of voluntary patients to hospitals for the insane and licensed houses. The ward for uncertified cases at Darlinghurst has been more largely made use of. The staff here is an honorary and visiting one. The reception houses at Darlinghurst and Newcastle have done good work, and slight and curable cases avoid the penalty of certification in removal to asylum. The amount expended in maintenance during 1910 was £181,482, an increase of £14,000. The average cost per patient was £31 15*s.* 9½*d.* A sum of £31,000 was collected by the Master in Lunacy towards maintenance, thus lessening the actual cost to the State.

Prevention of Venereal Disease.

After much negotiation it has been announced that the Victorian Government has arranged with the authorities of the Alfred and Women's Hospitals to set apart a ward for the treatment of venereal diseases. No charge of any sort will be made, and patients will be encouraged in every way to submit themselves to treatment for a requisite period. This step has been taken on the advice of a committee of medical men appointed some time ago to assist the Government in outlining measures for the prophylaxis of venereal disease.

Education Congress.

A congress is to be held in Melbourne in March for the purpose of endeavouring to organise educational work in Victoria, so that a continuous course may be open from the primary schools to the university. Various public bodies have been asked, and have consented, to coöperate, and the Victoria branch of the British Medical Association has nominated Dr. J. F. Wilkinson (President) and Dr. A. V. Anderson and Dr. R. H. Fetherston as representatives. One of the principal speakers will be Professor R. J. A. Berry, of the Melbourne University, and Dr. J. W. Barrett, C.M.G., is the chief organising spirit. The congress will continue over four days, and a social programme will be carried out.

Suicide by Lysol.

The city coroner for Melbourne recently remarked that he had investigated the deaths of 30 persons during the last 12 months who had committed suicide by taking lysol. The fashion in suicide appears to change, for a few years ago "Rough on Rats" was the favourite destroying agent, and more recently infusions of wax-match heads had a vogue.

New Year Honour.

Among the knighthoods conferred at the New Year was that given to Dr. C. K. Mackellar, of Sydney. Sir Charles Mackellar is one of the best-known public men in Sydney, and has always taken a prominent part in movements for promoting the public health. Some years ago he was President of the Board of Public Health, and has more recently interested himself in the care of neglected children. Apart from professional interests, he has been a Member of the Legislative Council for many years, and is concerned in many large financial enterprises, being chairman of directors of the Bank of New South Wales. He has left for a trip to England, accompanied by his daughter, who recently published a volume of verse entitled "The Closed Door."

Infantile Diarrhœa.

An unfortunate situation recently arose at the Children's Hospital, Perth, owing to a lack of water-supply and the impossibility of obtaining fresh milk. A number of patients were suffering from diarrhœa, and according to the statement of the resident medical officer, "children were dying like flies." Aroused by the seriousness of affairs, the Government sent up six milch cows from the State farm, and the situation was temporarily overcome. The Government is considering the establishment of a herd of 200 cows and a milk-supply modelled on that of the Lady Talbot Institute of Melbourne.

Sickness and Accident.

The Registrar of Friendly Societies in New South Wales has stated that "experience has shown that the mining members of the friendly societies carry a 38 per cent. higher risk than other members, yet all pay the same contribution." In connexion with this statement a deputation recently waited upon the Registrar and asked for advice upon the matter. Mr. Trivett pointed out that the question was really one of accident assurance. The situation would be met either by the enforcement of higher contributions from miners or by a reduction of sick benefits or by treating accident as a separate benefit.

Miner's Phthisis.

The report of a Royal Commission appointed by the West Australian Government has been presented to Parliament. Its chief recommendations include the certification of all miners before employment as being sound within three months of first engagement. Within three months of the passing of an Act every existing miner must submit to medical examination. If found free from tubercle he is to have a certificate to that effect. If found infected, no employer under a penalty may continue to employ him. Periodical examinations of all men shall be made at six-monthly intervals and those found tuberculous shall be so notified (1) to themselves, (2) to their mine managers, and (3) to the Board of Health.

Memorial Window.

A handsome window in stained glass has been placed in St. Thomas's Church, Moonee Ponds (a suburb of Melbourne), to the memory of the late Dr. J. W. Y. Fishbourne, who died about three months ago. The memorial is the work of the parishioners of the church and the people of the district in which the late Dr. Fishbourne resided for many years.

Export of Pork.

The Victorian Government has extended the provisions of the Milk and Dairies Supervision Act to the whole State. This has been done in order to encourage an export trade in pork, and to ensure the absence of tuberculosis from all pigs, which was found to be common in districts not previously under the Act.

Jan. 20th.

Obituary.

ALFRED HARRY YOUNG, M.B., C.M. EDIN., F.R.C.S. ENG., LL.D. ST. AND.,

EMERITUS PROFESSOR OF ANATOMY IN THE VICTORIA UNIVERSITY OF MANCHESTER, ETC.

WE regret to announce the death, at the age of 60, of Professor A. H. Young, formerly professor of anatomy in the Owens College and the Victoria University of Manchester, which occurred at his home in Didsbury on Feb. 22nd.

Professor Young was born in Warrington, and his intention, after receiving a good education, was to study dentistry. With this object he began his studies at University College, Liverpool, but under the advice of the late William Mitchell Banks, then professor of anatomy at Liverpool, he decided to go to the University of Edinburgh and qualify for a medical career. He took the degrees of M.B. and C.M. in 1876, and, his leaning at this time being towards surgery, proceeded to the English F.R.C.S. diploma in 1880. After a short period spent as a junior demonstrator of anatomy under Sir William Turner in Edinburgh, Young went to Manchester, where he became demonstrator of anatomy in 1877–78, under Professor Morrison Watson. He

also acted as a demonstrator in physiology under Professor Arthur Gamgee. He held in succession the posts of pathological registrar and medical and surgical registrar at the Royal Infirmary. Shortly before this time a hospital for consumption was founded in Manchester, and Young, in 1882, was elected an honorary surgeon to this institution. In 1883 he became surgeon to the Salford Royal Hospital, a post which he held for many years along with the professorship of anatomy. At that time pathology was being taught with great efficiency by the late Professor Dreschfeld, but as Dreschfeld was a busy practitioner, he could not give more than a certain amount of time to the duties of the chair. The important section of pathology known as "surgical pathology" was entrusted to Young, who did the work remarkably well. But the tragic death of Professor Morrison Watson left the chair of Anatomy vacant in 1885, and to it Young was elected. He also acted as dean of the medical school for a long period of years, and exerted a considerable influence both directly and indirectly on its fortunes. He was always solicitous for the progress of the medical school and for the comfort of its students, who were keenly attached to him. He was an active, precise, and painstaking teacher. His powers as a draughtsman, so invaluable to the anatomical demonstrator, he utilised with the greatest skill. He was also an innovator as a lecturer, for he taught certain subjects from the embryological point of view long before this method was extensively adopted in this country.

Young had a vigorous and strenuous personality, kind and sympathetic, but never disguising his well-matured opinions, which he always expressed with perfect candour and fairness. He was a steadfast and devoted friend and unwearied in carrying out any policy which he felt constrained to adopt. During his professorship the anatomical department was well served by the assistants whom he selected, Professor Robinson of Edinburgh, Professor Peter Thompson of Birmingham, and Professor Paterson of Liverpool, among others holding demonstratorships under him. Three volumes of "Studies Issued from the Anatomical Department" (Vol. I. in 1891, Vol. II. in 1900, and Vol. III. in 1906) contained Young's work on the morphology and abnormalities of blood-vessels and the placenta. He wrote, also, the chapters on general embryology and the vascular system in Cunningham's "Text-book of Anatomy."

Professor Young was a recognised authority on education, was selected as an examiner in his subjects by many universities, and when representing the University of Manchester on the General Medical Council took an active part on the Education Committee.

The funeral took place at the Manchester Crematorium on Feb. 26th, and was attended by many former colleagues on the Senate and Council of the University as well as many friends and former pupils. Professor Young leaves a widow and one daughter.

MAXWELL OGILVY-RAMSAY, M.D. EDIN., F.R.C.S. EDIN.,

HONORARY SURGEON TO THE CUMBERLAND INFIRMARY.

THE death of Dr. Maxwell Ogilvy-Ramsay took place on Feb. 15th at his residence, Portland-square, Carlisle, after only a few days' illness. He caught a chill while performing his professional duties, and pneumonia developing he passed away, to the deep grief of a wide circle of friends and patients.

Dr. Ogilvy-Ramsay was born in 1864 at Kirriemuir and was the third son of the Rev. Dr. Ogilvy-Ramsay, the parish minister of Kirriemuir. He received his medical education at the University of Edinburgh, where he graduated M.B., C.M. in 1890. After acting as house surgeon at the Royal Infirmary, Edinburgh, he subsequently held a similar position at the Hospital for Sick Children in Liverpool, and later went to the Rotunda Hospital in Dublin, where he obtained valuable experience in midwifery, one of the subjects to which he was specially attached. In 1892 he took the Licentiateship of the Royal College of Surgeons of Edinburgh, and in the following year was elected a Fellow of the College. He then started general practice in Carlisle, and his wide professional knowledge and skill as an operator soon won for him an assured position.

Shortly after he had settled at Carlisle attention was directed by the Government to the need for some reform in the obstetric work of the city, and a committee of ladies was formed with the object of organising a scheme for the provision of a trained midwife. A nurse was appointed to the post and Dr. Ogilvy-Ramsay consented to give his assistance in difficult cases, which assistance he continued in an honorary capacity until the passing of the Midwives Act. In 1895 he proceeded to the M.D. degree of the University of Edinburgh, taking for his thesis the subject of the prevention of sepsis in midwifery. In this year he also obtained the M.A. degree, and by an interesting coincidence his father received the degree of D.D. on the same occasion. In 1903 he was appointed honorary assistant surgeon to the Cumberland Infirmary, and in the following year joint surgeon with Dr. H. A. Lediard.

Dr. Ogilvy-Ramsay in his younger days was an athlete of no mean order, and during his professional career took part in most of the popular forms of recreation, including, of course, the "roaring game" of curling, in which he excelled. Somewhat reserved in his manner to strangers, he had a warm heart, and his sympathy and kindness, integrity and unselfishness inspired in his friends an esteem which bound them to him. By patients of all classes he was greatly loved. In 1893 he married Miss Andrews, of Lichfield, who survives her husband with two children, a daughter and a son. The interment took place at Closeburn on Feb. 17th.

DEATHS OF EMINENT FOREIGN MEDICAL MEN.—The deaths of the following eminent foreign medical men are announced: Dr. Dittmar Finkler, who had very recently resigned the chair of hygiene in the University of Bonn. In early professional life he had been assistant to Professor Pflüger and *privat-docent* of physiology. He then took to clinical work and was assistant to Professor Rühle, and afterwards had charge of the University Policlinic. The Ministry of Education selected him as General Commissioner to represent the German Universities at the Chicago Exhibition, and after his return he was charged with the establishment of a Hygiene Institute, and appointed to the chair of that subject. He was a man of very varied accomplishments, and published papers on Physiology, Pathology, Clinical Medicine, Food Problems, and Bacteriology. His death occurred during his sixtieth year.—Dr. Reye, who was for many years director of the State Asylum at Friedrichsberg. He was 80 years of age.—Dr. William Alfred Grünhagen, formerly extraordinary professor of physiology and of medical physics in the University of Königsberg. He edited Wagner and Funk's well known text-book on physiology, and published as long ago as 1873 a monograph on electro-motor behaviour of living tissues. He was 69 years of age and had lived in retirement for the last 18 years.—Dr. Sigismund Rahmer, well known in literary circles. His writings include studies of Heine, Strindberg, Lenau, and especially Heinrich von Kleisch. He was 45 years of age and a general practitioner in Berlin.—Dr. Emil Stoffella, Ritter d'alta Rupe, extraordinary professor of medicine in the University of Vienna, aged 76.—Dr. Waldemar Koch, professor of physiological chemistry, a nephew of Professor Robert Koch.—Dr. Etienne Cestan, professor of clinical surgery in the University of Toulouse.—Dr. Ch. Guende, professor of clinical ophthalmology in the Marseilles Medical School.

H.R.H. Prince Arthur of Connaught has consented to become Patron of the Twenty-seventh Congress of the Royal Sanitary Institute be to held at York in July next.

LORD LISTER AND UNIVERSITY COLLEGE, LONDON.—The committee and professorial board of University College have sent a letter to Mr. J. J. Lister, F.R.S., expressing sympathy and regret at the death of Lord Lister. The letter recalls with pride that Lord Lister received his medical education within the walls of the College and of University College Hospital, and records high appreciation of the supreme value of his labours in the field of biological and medical science, as a result of which he was enabled to introduce improvements and methods which have reformed surgical practice and have been of incalculable benefit to humanity by prolonging life and alleviating suffering. The letter is signed by Lord Reay and Dr. T. Gregory Foster.

THE NATIONAL INSURANCE ACT.

BRITISH MEDICAL ASSOCIATION: SPECIAL REPRESENTATIVE MEETING.

THE Special Representative Meeting was intended to conclude on Wednesday night, Feb. 21st, but, as we stated in the report in our last issue, it was necessary to continue the meeting on Thursday, Feb. 22nd. The first part of the morning was spent in debating a motion of want of confidence in the Council, and many members took part in the discussion. The solicitor to the Association, at the request of the Chairman, answered various questions with regard to the position of the Association in the event of a wholesale resignation of the Council following the passing of such a motion. It appeared that under the Articles and By-laws a temporary state of deadlock might arise. After both sides had expressed their views with some energy, a motion that the Committee proceed to the next business was carried by a large majority. A motion advising each division to hold a general meeting as soon as possible after the Representative Meeting was agreed to, and it was also decided that a manifesto stating the objections of the profession to the Act should be prepared for presentation to the press, Members of Parliament, deans of medical schools, university tutors, and headmasters of public schools.

The meeting expressed its high appreciation of the action taken by the Royal Colleges of Physicians and Surgeons in defence of public and medical interests; and recorded its strong condemnation of the expressions used by Mr. Lloyd George with reference to the Colleges. A proposition that the Council be instructed to promote united action with the medical corporations and other representatives of professional interests in order to secure conditions satisfactory to the profession was referred to the Council. The motion that the rest of the report be approved was passed by a substantial majority and the committee stage then ended.

Dr. E. J. MACLEAN, on resuming the chair, proposed a vote of thanks to Mr. T. J. Verrall for his great ability in presiding over the Committee stage. Dr. T. A. HELME, in seconding, paid a high tribute to Mr. Verrall's fairness, and the motion was carried with enthusiasm. The meeting then considered in order the resolutions passed during the Committee stage, and, with certain modifications, these were all agreed to. The meeting closed with a vote of thanks to the Chairman, proposed by Mr. N. BISHOP HARMAN and seconded by Dr. HELME. In answer to a question during the morning, it was announced that the signatories to the Association pledge numbered in July, 1911, 18,000; in November, 1911, 23,000; and in February, 1912, 26,100.

NATIONAL MEDICAL UNION.

We have received the following communication from the National Medical Union:—

Sections of the Union have already been formed or are in the process of formation in the following centres: Ashton-under-Lyne, Hyde, Birkenhead, Colwyn Bay, Eccles, Huddersfield, Liverpool (Southern), Liscard, Oswestry, Ross (Herefordshire), Rochester and Chatham, Rochdale, Wigan, Winchester, Wrexham, and Bolton, and conveners of meetings for the formation of other sections have already been appointed. Very good progress has already been made, and it is hoped that many districts which are still undecided will follow the lead of several of the great centres and complete the establishment of local sections of the National Medical Union. Necessity for the formation of these sections has become more urgent since the recent action of the Representative Meeting of the British Medical Association in proposing a conference with the Insurance Commissioners before the six cardinal points were adequately guaranteed. All communications concerning these sections may be directed to the honorary secretary of the Organisation Subcommittee, Dr. M. Russen Rhodes, Bridge House, Didsbury, Manchester.

Medical News.

UNIVERSITY OF BRISTOL.—At examinations held recently the following candidates were successful:—

FINAL EXAMINATION FOR THE DEGREES OF M.B., CH.B.

Pass.—Edwin Vincent Foss, John Richard Kay-Mouat, and Percy Moxey.

Part I.—George Frederick Fawn and William Peach Taylor.

FINAL EXAMINATION FOR THE DEGREE OF B.D.S.

George Frederick Fawn.

EXAMINATION FOR THE DIPLOMA IN PUBLIC HEALTH.

Thomas John Williams.

FOREIGN UNIVERSITY INTELLIGENCE.—*Basle:* Dr. Max Iselin, who has charge of the surgical side of the University policlinic, has been recognised as *privat-docent* of surgery.—*Berlin:* Dr. Krückmann, professor in Königsberg, has been appointed Professor of Ophthalmology in succession to Dr. von Michel; and Dr. Cramer, professor in Göttingen, has been appointed to the Chair of Mental Diseases in succession to Dr. Ziehen retired. Dr. L. Rabinowitsch Kempner has been granted the title of Professor. This lady took the degree of Ph.D. in Berne in 1894 and since then has worked in Berlin under Professor Koch and Professor Orth.—*Berlin (Military Medical Academy):* Dr. Kurt Roscher, senior staff surgeon, has been appointed head of the Sanitary Department in place of Professor Rudolf Salzwedel.—*Breslau:* Dr. C. Prausnitz, director of the Rabies Institute, has been recognised as *privat-docent* of Hygiene.—*Budapest:* Dr. Karl Engel has been recognised as *privat-docent* of Diseases of the Circulation and Digestion.—*Erlangen:* Dr. Ernst Engelhorn has been recognised as *privat-docent* of Midwifery and Gynæcology.—*Freiburg:* Dr. Otto Kahler, of Vienna, has been offered the chair of Laryngology in succession to Dr. Killian.—*Göttingen:* Dr. Max Voit, of the Anatomical Institute, has been promoted to be Extraordinary Professor.—*Heidelberg:* Dr. Karl Wilmanns, assistant physician in the Clinic for Mental Diseases, has been granted the title of Extraordinary Professor. Dr. Czerny has been appointed Honorary President of the International Committee for Cancer Research.—*Jena:* Dr. L. Wrede, *privat-docent* of surgery, has been promoted to be Extraordinary Professor.—*Kiel:* Dr. Walter Birk has been recognised as *privat-docent* of Children's Diseases.—*Leipsic:* Dr. E. Heller has been recognised as *privat-docent* of Surgery.—*Lemberg:* Dr. Kasimir Knietniewski, extraordinary professor of comparative anatomy, has been promoted to be Ordinary Professor.—*Prague (Bohemian University):* Dr. Christian Hynek has been recognised as *privat-docent* of Medicine.—*Würzburg:* Dr. Karl Hess, who has just declined an invitation to the chair of ophthalmology in Berlin to succeed von Michel, has been decorated with the Order of the Bavarian Crown, which carries with it a title of nobility.—*Zürich:* Dr. Wilhelm Schulthess, *privat-docent* of orthopædic surgery, has been promoted to be Extraordinary Professor.

BRITISH MEDICAL BENEVOLENT FUND.—The annual general meeting of subscribers to the British Medical Benevolent Fund was held on Feb. 20th, when the present officers were re-elected and a committee appointed for the ensuing year. Dr. S. West, the treasurer, presented his financial statement for 1911 and announced that subscriptions amounting to £1980 8*s.* 6*d.* and donations amounting to £347 14*s.* 6*d.* had been received for the grant department, whilst help had been given to 216 applicants, the sum so disbursed being £2362 16*s.* 6*d.* The annuity department had received an income of £3048 7*s.* 2*d.* derived from investments in trust securities, and the sum of £2593 15*s.* had been paid to the pensioners, of whom there are 131 on the books. Legacies received during the year had amounted to £2380, including £1000 from the executors of the late Dr. F. W. Pavy, a Vice-President of the Fund, and £1000 left by Mrs. John Lowe in memory of her husband, who was for many years chairman of the committee of the Fund. After the report of the committee had been received the meeting was adjourned until 4.30 P.M. on Wednesday, March 13th, when the Lord Mayor has kindly consented to preside at a gathering at the Mansion House in support of the Fund. The adoption of the report will then be moved by Bishop

Boyd Carpenter, the other speakers being Sir Thomas Barlow, President of the Royal College of Physicians of London, Mr. Rickman J. Godlee, President of the Royal College of Surgeons of England, Sir T. Clifford Allbutt, Regius Professor of Physic at Cambridge, Sir John Tweedy, and Dr. West.

A SOMERSET CENTENARIAN.—Mr. W. Edwards, of West Monkton, died recently at the age of 100 years.

DONATIONS AND BEQUESTS.—Under the will of the late Mrs. Ellen Penn, the Miller Hospital, Greenwich, will receive £3000, and the St. John's Hospital, Lewisham, £2000.

MIDDLESEX HOSPITAL.—After the great success achieved last year by the production of *The Belle of New York* by amateurs in aid of the Middlesex Hospital, the experiment is to be tried again this year. A company of over 70 ladies and gentlemen are rehearsing a new and original musical play, entitled *The Military Girl*, written and composed by Charles and Muriel Scott-Gatty. The performances will be at 8.30 P.M., from April 16th to 20th, at the Savoy Theatre, kindly lent for the occasion by Mrs. D'Oyly Carte. Notices as to where tickets are obtainable will be issued later.

DEVON AND EXETER HOSPITAL.—The annual meeting of the subscribers to this hospital was recently held. The medical report stated that during 1911 the in-patients were 1647, against 1614 in 1910. The out-patients numbered 5116, as compared with 5014 in the previous year. The average daily number of in-patients was 160, and the average stay in hospital 35 days. The financial statement showed that the ordinary income was £9972 and the ordinary expenditure £11,512. Legacies were received during the year amounting to £1341, and £1000 were given by Mrs. G. Walker for the endowment of two cots.

Parliamentary Intelligence.

NOTES ON CURRENT TOPICS.

National Insurance Commission.

THERE has been laid on the table of the House of Commons a copy of a memorandum on the steps taken preliminary to the operation of Part I. of the National Insurance Act.

International Opium Convention.

The text of the International Opium Convention signed at the Hague on Jan. 23rd, 1912, has been communicated to Parliament in an official White Paper.

Dogs' Protection Bill.

Sir FREDERICK BANBURY has presented a Bill in the House of Commons for the purpose of prohibiting experiments on dogs. The measure is "backed" by Mr. GEORGE GREENWOOD and Mr. FIELD, and has been read a first time.

Small-pox and Infantile Mortality Statistics.

A return has been ordered by the House of Commons, on the motion of Mr. RAMSAY MACDONALD, which will provide in the first place statistics showing for each year from 1890 to 1910 the number of deaths from small-pox in England and Wales. These figures will be given in considerable detail. In the second place, the return will set out for each year from 1890 to 1910 inclusive the deaths of infants under one year of age per million births from each of the following causes: syphilis, scrofula, tuberculous peritonitis, and tabes mesenterica; skin diseases, erysipelas, pyæmia, and phlegmon; bronchitis, diarrhœa, atrophy, and debility (including premature birth).

The Increase of the Feeble-minded.

Amongst the notices of motion for Tuesday, Feb. 27th, in the House of Commons was one in the name of Mr. HOUSTON, which related to the increase of the feeble-minded. The terms of the honourable Member's motion were as follows: "That in view of the great and rapid increase of feeble-minded, unhealthy, and useless members of the community, a Commission should be appointed to consider the advisability of adopting such drastic methods as sterilisation to arrest the increase of undesirable subjects in the United Kingdom." As the motion was the fourth on the notice paper no opportunity was found for moving it.

Abolition of Vivisection Bill.

Mr. LANSBURY has introduced in the House of Commons a bill "to provide for the abolition of vivisection." The members who support him in doing so are Mr. KEIR HARDIE, Sir JOHN ROLLESTON, Mr. CHANCELLOR, Mr. WILLIAM THORNE, Mr. JOHN WILSON, Mr. TYSON WILSON, Mr. JOHN TAYLOR, Mr. JAMES THOMAS, Colonel LOCKWOOD, Mr. SNOWDEN, and Mr. ALBERT SMITH.

Asylum Officers (Employment, Pensions, and Superannuation) Bill.

Lord WOLMER has presented a Bill in the House of Commons "to limit the hours of employment of officers and servants in asylums and to amend the Asylum Officers' Superannuation Act, 1909." It has been read a first time. The honourable Members backing the Bill are Mr. CHARLES ROBERTS, Mr. STANIER, Mr. WATSON RUTHERFORD, Mr. HIGHAM, Mr. MCCALLUM, Mr. WARDLE, Mr. COTTON, Mr. CHARLES CRAIG, Mr. WILLIAM REDMOND, Sir DAVID BRYNMOR JONES, and Sir REGINALD POLE-CAREW. The framers of the Bill have had before them the report of the Select Committee of the House of Commons, which considered last year the various matters with which the measure deals.

The Capital of India.

In the debate in the House of Lords last week on changes in Indian policy some comment was made on the sanitary condition of the proposed site of the new capital at Delhi. Lord CURZON OF KEDLESTON pointed out that it had been subject to inundations. The Marquis of LANSDOWNE alluded to the successful efforts which had been made to improve the sanitary condition of Calcutta, to its broad avenues and abundant water-supply. One thing, he said, was established, and that was that the sanitary condition of Delhi was inferior to that of Calcutta. He also referred to an ailment called "the Delhi boil," which he understood was to be found at the new capital of India. An American investigator had been devoting a considerable amount of attention to this mysterious complaint, which lasted about ten months.

HOUSE OF COMMONS.

WEDNESDAY, FEB. 21ST.

Qualified Medical Practitioners in India.

Mr. H. W. FORSTER asked the Under Secretary of State for India how many duly qualified medical practitioners there were in India, how many of these were men, how many were women, and how many of either sex were in the service of the Government of India.—Mr. MONTAGU wrote in reply: As no system of medical registration exists in India it is impossible to give an exact answer to the first part of the question, although approximate figures could probably be obtained from non-official publications. As regards the Government service, lengthy and somewhat complicated consultation of the official lists for the various provinces, and probably even reference to the Government of India, would be necessary to arrive at the statistics asked for. I shall be glad to have the matter investigated for the honourable Member and let him know the result as soon as it is obtained.

National Insurance Act Topics.

Sir RANDOLF BAKER asked the Secretary to the Treasury whether it was proposed that approved societies should pay salaries to their secretaries, sick visitors, or inspectors out of funds raised under the operation of the Insurance Act from their members, whether societies would be allowed to institute a medical test for new members, and, if so, whether the fees for medical examination might be paid out of the administration expenses fund.—Mr. MASTERMAN answered: Approved societies are authorised by the Act under Section 3 to pay such salaries, if any, as may be required to secure visitors and inspectors subject to the limitation of general administration expenses to be fixed by regulations of the Commissioners. The institution of a medical test is optional to the societies, and, if enforced, must be borne either by the individual concerned or out of the amount to be set aside for the administration expense fund of the society.

Answering a series of questions Mr. MASTERMAN said: The Insurance Commissioners recognised from the first their duty to supply authentic information and advice to persons affected by the Insurance Act, especially in view of the most important decisions which over 14 millions of insured persons must necessarily take before next July unless they sink into the class of deposit contributors. In the absence of any permanent staff, who in established Government departments provide information, both by lectures and otherwise, concerning all new Acts of Parliament to persons affected, all four Insurance Commissions engaged persons for temporary assistance for this purpose. The engagements were, of course, entirely non-political. It may interest the honourable gentlemen to know that they included two ex-Unionist candidates for Parliament, and that one of the two English organisers, who also arranged the general course of instruction, is the late secretary of the Unionist Insurance Committee. The English Commissioners, at meetings held at the Foreign Office with representatives of Friendly Societies and trade unions, were strongly urged in the first instance to limit themselves to private conference with members of the various organisations concerned. A large number of very successful conferences have been held, and through such conferences they hope that the necessary information may be conveyed to the bulk of insured persons; but they recognise that in the case of women and the remoter rural districts some further methods will have to be devised. In Scotland, Ireland, and parts of Wales, where the ground is not covered by Friendly Societies, it has been found impossible to convey the required information through such organisations, and lectures and addresses are therefore being given open to all who are interested in the Insurance Act. All the conferences and lectures are non-political and uncontroversial in character. The lecturers are under instructions to make no political allusion, direct or indirect, to be careful not to dogmatise on any doubtful points of law, and to confine themselves to plain exposition of what is now the law of the land. Never at any time has there been any connexion between the Government insurance organisation and the body now called the Liberal Insurance Committee, nor did any of the lecturers of the Commission attend the meeting of the Liberal lecturers addressed by the Chancellor of the Exchequer on Feb. 1st.

Leaflets explanatory of the Act are in preparation and will shortly be issued. The enormous number of letters of inquiry received—quite beyond the possibility of treatment by the present staff of the Commissioners—has demonstrated at once the necessity for this work and also the amazing misunderstanding which prevails concerning the details of the Act by which the interests of many persons affected by the Act would be seriously prejudiced. A Paper is in preparation detailing the work already done by the Commissioners to bring the Act into operation, which will include a full account of this preliminary work of exposition. I propose to add to the Paper a list of the permanent and temporary appointments (other than clerical) at present made by the National Insurance Commissioners and the Joint Committee and to lay it on the table of the House.

THURSDAY, FEB. 22ND.

The Italian Government and Red Crescent Expeditions.

Mr. DILLON asked the Secretary of State for Foreign Affairs whether he could state on what grounds the Italian Government withdrew the permission given by them last autumn to a Red Crescent expedition to proceed by sea from Egypt to Tripoli; whether it was at present possible for supplies or *personnel* connected with Red Crescent societies to go from Egypt to Tripoli; and, if not, whether the British Government would request the Italian Government to withdraw their prohibition.—Sir E. GREY replied: I have been informed that the objections of the Italian Government to the despatch of the Red Crescent Mission by sea were based on a report from General Caneva contending that the landing of such a mission at the time would be regarded by the local population as a reaffirmation of Turkish influence in Tripoli. The Italian Government further argued that, as other missions organised by the Red Crescent had entered Tripoli from Tunis, the Turkish orces were already amply provided in this respect. They also entertained apprehensions that, although the character of the doctors attached to the mission could be established, it would be impossible to apply a similar test to other members of the mission and thus guard against the presence amongst them of disguised officers. There is no prohibition against the dispatch of such missions from Egypt to Tripoli by land.

The Milk Bill.

Mr. EDWARD WOOD asked the President of the Local Government Board on what date it was proposed to introduce the Milk Bill.—Mr. BURNS answered: I am not yet able to fix a date for the introduction of the Bill, but I hope it may not be long deferred.

Improper Literature Bill.

Sir HILDRED CARLILE asked the Home Secretary whether he proposed to introduce this session his Bill dealing with improper literature, and whether time would be allotted to it in the Government programme.—Mr. MCKENNA replied: I propose to introduce this Bill and I hope that time may be found to pass it.

Mr. WEDGWOOD: Does the Government propose to set up a censorship of books as well as of plays?—Mr. MCKENNA: No; it is not proposed to censor anything.

MONDAY, FEB. 26TH.

Milk Preservatives.

Mr. STANIER asked the President of the Local Government Board whether mystin, used as a preservative for milk, was allowed under the regulations of the Board; and whether it contained sodium nitrate, and was therefore a danger to a person consuming it.—Mr. BURNS replied: Draft regulations have been prepared by the Local Government Board prohibiting the addition of any preservative substance to milk intended for sale for human consumption. Notice of these regulations was given in the *London Gazette* of Feb. 22nd, in accordance with the provisions of the Rule Publication Act, 1893. I am advised that "mystin" contains sodium nitrite (not nitrate), and that this is a drug with a powerful physiological action.

Foreign Milk and Tubercle Organism.

Mr. TOUCHE asked the President of the Local Government Board whether he could say approximately what proportion of the fresh milk imported from abroad was examined bacterially in regard to tubercle, and how long it took to examine a sample, and had any tubercle been found in the samples reported on in recent months.—Mr. BURNS answered: During the last five months of last year 50 consignments of fresh milk were imported. Forty-three samples were examined bacteriologically, but in no case was the tubercle organism found to be present. A conclusion that the organism is absent is not arrived at until six weeks after the receipt of the sample.

Milk and Tuberculosis.

Mr. TOUCHE asked the President of the Local Government Board whether he had received and considered a report by Dr. Harris, the medical officer of health of the borough of Islington, submitted to the public health committee of that borough, with reference to the finding of the Royal Commission on Tuberculosis, that a considerable proportion of the tuberculosis of childhood was to be ascribed to infection with bacilli transmitted in the milk of cows; and could he say when legislation on the subject would be introduced with a view to dealing effectively with this evil.—Mr. BURNS said in reply: The report has been received and is being considered in connexion with the general question to which it relates. With regard to the last part of the question I may refer to the answer which I gave on Thursday last to the honourable Member for Ripon (Mr. E. Wood).

The Notification of Tuberculosis.

Mr. FRED HALL (Dulwich) asked the President of the Local Government Board whether it was the intention of the Local Government Board that notification of tuberculosis made under its recent Order should be communicated by the medical officers of health to the Metropolitan Asylums Board in the same way as other infectious diseases.—Mr. BURNS answered: The reply is in the negative.

Medical Attendance and the Insurance Act.

Sir PHILIP MAGNUS asked the Secretary to the Treasury whether the official lecturers appointed to explain the details of the National Insurance Act had been instructed to inform insured persons as to the conditions under which they could obtain, in cases of sickness, medical attendance from duly qualified practitioners; and whether, having regard to the fact that these conditions were not yet settled, he would consider the advisability of postponing the lectures now being provided at the public expense till such time as should enable the Commissioners to state whether and, if so, under what arrangements the members of the medical profession had expressed their willingness to coöperate in giving effect to the Act.—Mr. MASTERMAN said in reply: The official lecturers have been given careful instruction to explain the Act as it stands on the statute book. The Act allows alternatives in respect of medical benefit; either that it shall be given from a panel with free choice of doctors, or that alternative arrangements shall be made by the Insurance Committee or the Commissioners, or that medical benefit shall be suspended and the money equivalent returned to the insured person.

Official Lectures on the Insurance Act.

Sir PHILIP MAGNUS asked the Secretary to the Treasury whether Members of that House, medical practitioners, and medical students, to whom a knowledge of the details of the Insurance Act was of especial value, were or would be admitted to the lectures of the official lecturers.—Mr. MASTERMAN replied: If any body of medical practitioners or other persons affected by the Act apply for the attendance of an official lecturer, the Commissioners will be happy to consider their request.

The Transmission of Sleeping Sickness.

Dr. CHAPPLE asked the Secretary of State for the Colonies whether any additional evidence had been brought to his notice that game in Nyasaland was a reservoir, and Glossina morsitans a carrier, of the trypanosome of sleeping sickness; and whether, in view of the evidence so far available and the consequences of delay, fraught with peril to the natives, the whites, their domestic animals, and their trade, he would propose such a modification of the game laws as would enable those who suffered to drive off the game, and with it the tsetse fly, from the vicinity of villages and transport routes.—Mr. L. HARCOURT replied: I am in consultation with my expert advisers, the managing committee of the Sleeping Sickness Bureau, on the whole question, and I am not in a position to make any statement at present, but I can promise my honourable friend that there will be no avoidable delay. With regard to the latter part of my honourable friend's question, I would point out that under Section 19 of the Nyasaland Game Ordinance, 1911, any land-holder or his servant finding a protected animal doing damage to his holding may kill the same without a licence if such act is necessary for the protection of his holding, and that under Section 30 of the same ordinance, when it is shown that any wild animals are causing damage to any native, the resident of the district may authorise the tribesmen or inhabitants of the village to kill the animals. Any person would, of course, be allowed to drive away game from his holding.

TUESDAY, FEB. 27TH.

The Tuberculosis Committee.

Mr. EDWARD WOOD asked the Chancellor of the Exchequer whether any of the gentlemen appointed to the committee of inquiry into the problem of tuberculosis were professors of the veterinary profession; and if not, whether, in view of the intimate connexion of the problems of human and animal tuberculosis, he could see his way to add such representation to the committee.—Mr. LLOYD GEORGE: The answer to the first part of the question is in the negative. I will bring the honourable Member's suggestion before the Chairman of the Committee. In fact, I have already done so.

WEDNESDAY, FEB. 28TH.

Scottish Medical Insurance Commissioner.

The Marquis of TULLIBARDINE asked the Secretary to the Treasury why the Medical Commissioners appointed under the provisions of Section 52 (1) of the National Insurance Act must have had personal experience of general practice; whether there was the same proviso with regard to the Scottish Medical Commissioner, and, if not, would he say why a different course had been adopted; and whether the Scottish Medical Commissioner had had experience of general practice.—Mr. MASTERMAN said in reply: Sections 57 and 80 of the Act require that all the Commissioners must have among their members a duly qualified Medical Commissioner. In England only is experience of general practice a statutory condition of his appointment; but this condition, though not statutory, is also fulfilled by the Scottish Medical Commissioner.

The Marquis of TULLIBARDINE: Then this gentleman has experience of general practice?—Mr. MASTERMAN: Yes, many years' experience.

BOOKS, ETC., RECEIVED.

AMERICAN CLIMATOLOGICAL ASSOCIATION, Philadelphia. (Secretary, Dr. Guy Hinsdale, Hot Springs, Virginia, U.S.A.)

Transactions of the American Climatological Association. For the Year 1911. Volume XXVII. Price not stated.

CHURCHILL, J. AND A., London.

Guy's Hospital Reports. Edited by F. J. Steward, M.S., and Herbert French, M.D. Vol. LXV., being Vol. L. of the Third Series. Price not stated.

DORNAN, WILLIAM J., Printer, Philadelphia.

Transactions of the American Gynecological Society. Volume 36. For the year 1911. Price not stated.

FISCHER, GUSTAV, Jena.

Die Ursachen des chronischen Magengeschwürs. Von. J. W. Th. Lichtenbelt, Arzt. (Aus der medizinischen Klinik zu Utrecht.) Price M.3.

Handbuch der Pathogenen Mikroorganismen. Herausgegeben von Dr. W. Kolle und Dr. A. von Wassermann. Zweite vermehrte Auflage. Fünfte Lieferung (Bd. I., Bogen 26-35). Price M.5.

Herzmissbildungen. Ein Atlas angeborener Herzfehler in Querschnitten mit besonderer Berücksichtigung des Atrioventrikularsystems. Von J. G. Mönckeberg, a.o. Professor an der Universität Giessen. Price M.30.

HIRSCHWALD, AUGUST, Berlin.

Arznei- und Diätverordnungen für die Gynäkologische Praxis aus der Frauenklinik von Prof. Dr. Paul Strassmann in Berlin. Price M.1.60.

Gelöste und ungelöste Aufgaben der Ohrenheilkunde. Festrede gehalten am Stiftungstage der Kaiser Wilhelms-Akademie für das Militärärztliche Bildungswesen, 2 Dezember, 1911. Von A. Passow. Price Pf.80.

Veröffentlichungen aus dem Gebiete des Militär-Sanitätswesens. Herausgegeben von der Medizinal-Abteilung des Königlich Preussischen Kriegsministeriums. Heft 50. Sonnenbäder. Von Dr. W. Haberling, Oberstabsarzt und Regimentsarzt des 5. Rheinischen Inf.-Regts. Nr. 65. Price M.1.

Beiträge zur Experimentellen Therapie. Herausgegeben von Prof. Dr. E. v. Behring, Wirklicher Geheimer Rath, Director des Instituts für Hygiene und Experimentelle Therapie der Universität Marburg. Heft 12. Meine Blutuntersuchungen. Von E. v. Behring, Marburg. Price M.6.

Ueber das konditionale Denken in der Medizin und seine Bedeutung für die Praxis. Von Dr. v. Hansemann. Price M.5.

Soziale Pathologie. Versuch einer Lehre von den sozialen Beziehungen der menschlichen Krankheiten als Grundlage der sozialen Medizin und der sozialen Hygiene. Von Dr. med. Alfred Grotjahn, Berlin. Price M.18.

HODDER AND STOUGHTON, London. (For the UNIVERSITY OF LONDON PRESS, Limited, London.)

The Westminster Hospital Reports. Edited by E. D. Macnamara and E. Rock Carling. 1909–1910. Volume XVII. Price 6*s*. net.

INCORPORATED INSTITUTE OF HYGIENE, 34, Devonshire-street, Harley-street, London, W. SMITH, W. H., AND SONS, London.

The Home Handbook. Health and Hygiene. Price 1*d*.

KABITZSCH, CURT, Würzburg.

Das Klima von Schömberg, O.-A. Neuenbürg bei Wildbad (Württembergischer Schwarzwald) und seine Bedeutung für die Behandlung der chronischen Lungentuberkulose. Unter Mitwirkung von Prof. Dr. Meyer, Stuttgart und weil. L Pfeiffer, Schömberg. Herausgegeben von Dr. med. G. Schröder, Dirig. Arzt der neuen Heilanstalt für Lungenkranke in Schömberg, A.-O. Neuenbürg. Price M.2.

LAYTON, CHARLES AND EDWIN, 56, Farringdon-street, London, E.C.

The Insurance Register (Life). 1912. (First Edition.) Containing a Record of the Yearly Progress and the Present Financial Position of British Life Assurance Associations. Forty-third Year of Publication. Price 1*s*.

NETHERLANDS-INDIES ASSOCIATION FOR THE PROMOTION OF THE INTERESTS OF THE CINCHONA PLANTERS, Buitenzorg, Java.

The Value of Quinine in Combating Malarial Fever. By S. S. Abrahamson, Official of the Netherlands-Indies Association, &c. Price 6*d*.

NORSTEDTOCH SÖNER, Kungl. Boktryckeriet, Stockholm,

Verhandlungen des Ersten Kongresses des Nordischen Dermatologischen Vereins zu Kopenhagen den 17–19 Mai, 1910. Redigiert von C. Rasch, Kopenhagen. Price not stated.

ST. CLEMENT'S PRESS, LIMITED, Portugal-street, Kingsway, London, W.C.

The Key to Perfect Health and the Successful Application of Psycho-Therapeutics. A Practical Guide to both Operator and Patient. By Arthur Hallam, Founder and Hon. Secretary of the Psycho-Therapeutic Society, Editor of the *Health Record*. Price 4*s*. net; by post 4*s*. 4*d*.

SMITH, ELDER, AND CO., 15, Waterloo-place, London.

A Junior Course of Practical Zoology. By the late A. Milnes Marshall, M.D., D.Sc., M.A., F.R.S., and the late C. Herbert Hurst, Ph.D. Seventh edition. Revised by F. W. Gamble, D.Sc., F.R.S., Mason Professor of Zoology and Comparative Anatomy in the University of Birmingham. Price 10*s*. 6*d*.

Charles Dickens as Editor. Being Letters written by him to William Henry Wills, his Sub-Editor. Selected and edited by R. C. Lehmann. With Portraits. Price 12*s*. 6*d*. net.

SPRINGER, JULIUS, Berlin.

Praktische Anleitung zur Syphilisdiagnose auf biologischem Wege. (Spirochaeten-Nachweis, Wassermannsche Reaktion.) Von Dr. P. Mulzer, I. Assistenzarzt der Universitätsklinik für Haut- und Geschlechtskrankheiten zu Strassburg i.E. Zweite Auflage. Price M.4.80.

Die Lungensaugmaske in Theorie und Praxis. Physikalische Behandlung von Lungenkrankheiten, Blutarmut, Keuchhusten, Asthma, Kreislaufstörungen und Schlaflosigkeit. Zusammenfassende Ergebnisse aus Literatur und Praxis. Von Stabsarzt Dr. E. Kuhn. Price not stated.

Die heteroplastische und homöoplastische Transplantation. Eigene Untersuchungen und vergleichende Studien. Von Dr. Georg Schöne, Privatdozent der Chirurgie und I. Assistent der Königlichen Chirurgischen Klinik zu Marburg. Price, paper, M.8; bound, M.9.

Charakter und Nervosität. Vorlesungen über Wesen des Charakters und der Nervosität und über die Verhütung der Nervosität gehalten im I. Semester des Jahres 1910/11 an der medizinischen Fakultät in Budapest. Von Dr. Jenö Kollarits, privatdozent, Adjunkt der II. Med. Universitäts-Klinik. (Direktor: Hofrat Prof. Dr. E. Jendrássik.) Price, paper, M.7; bound, M.8.40.

Die Arzneimittel-Synthese auf Grundlage der Beziehungen zwischen chemischem Aufbau und Wirkung. Für Aerzte, Chemiker und Pharmazeuten. Von Dr. Sigmund Fränkel, a.o. Professor für medizinische Chemie an der Wiener Universität. Dritte, umgearbeitete Auflage. Price, paper, M.24; bound, M.26.50.

UNIVERSITY CORRESPONDENCE COLLEGE, Burlington House, Cambridge. London Office: 32, Red Lion Square, Holborn, W.C.

The University Tutorial Series. Matriculation Directory. No. 60. January, 1912. With Articles on Text-books. Price 1*s*. net.

UNIVERSITY PRESS, Cambridge. CAMBRIDGE UNIVERSITY PRESS, Fetter-lane, London, E.C. (C. F. CLAY, Manager).

Prehistoric Man. By W. H L. Duckworth, M.A., M.D., Sc.D., University Lecturer in Physical Anthropology, Cambridge. Price 1*s*. net.

UNIVERSITY PRESS, 57, Ashton-street, Liverpool.

Tables of Statistical Error. By Professor Sir Ronald Ross, K.C.B., F.R.S., and Walter Stott, Honorary Statistician, Liverpool School of Tropical Medicine. Reprinted from the Annals of Tropical Medicine and Parasitology, Vol. V., No. 3, December, 1911. Issued by the Liverpool School of Tropical Medicine. Price 2*s*. 6*d*.

WATTS AND CO., 17, Johnson's-court, Fleet-street, London, E.C.

Practical Anthropology. With two large Charts: (1) A Diagram of Facial Contours; (2) the Normal Cranial Shapes. By Thomas E. Smurthwaite, F.R.A.I., L.M.S.S.A., Assistant School Medical Officer, Willesden. Price 2*s*. 6*d*. net.

WOMEN'S INDUSTRIAL COUNCIL, 7, John-street, Adelphi, London, W.C.

How to Cook a Simple Meal. How to Clean a House. How to Do the Weekly Wash. How to Do the Weekly Mending. How to Do your own Upholstery and Machining. By Marguerite Fedden, 1st Class Diplomée N.T.S.C., Principal of St. Martha's College of Housecraft. Price 1*d*. each, or 1½*d*. each post free.

WRIGHT, JOHN, AND SONS, LIMITED, Bristol. SIMPKIN, MARSHALL, HAMILTON, KENT, AND CO., LIMITED, London.

The Prescribing of Spectacles. By Archibald Stanley Percival, M.A., M.B., B.C. Cantab., Senior Surgeon, Northumberland and Durham Eye Infirmary. Illustrated with diagrams. Second edition, revised. Price 5*s*. 6*d*. net.

Appointments.

Successful applicants for Vacancies, Secretaries of Public Institutions, and others possessing information suitable for this column, are invited to forward to THE LANCET *Office, directed to the Sub-Editor, not later than 9 o'clock on the Thursday morning of each week, such information for gratuitous publication.*

ANDREW, HENRY, L.R.C.P. Lond., M.R.C.S., has been appointed Honorary Consulting Surgeon to the Exeter Dispensary.

ARNOLD, M. B, M.D. Vict., D.P.H., has been appointed Medical Officer of Health of Croydon.

ASHKENNY, A., M.B., Ch.B. Edin., B.Sc. (Public Health), has been appointed School Medical Officer to the City of Birmingham Education Department.

BEAN, KENNETH, M.B., Ch.B. Vict., has been appointed House Physician at the Manchester Royal Infirmary.

BLACK, J., M.B., B.S. Edin., has been appointed Certifying Surgeon under the Factory and Workshop Acts for the Milnthorpe District of the county of Westmorland.

CLAPP, GEORGE TUCKER, M.B. Cantab., M.R.C.S., has been appointed Surgeon to the Royal West of England Institution for Deaf and Dumb Children, Exeter.

DIX, C., M.R.C.S., L.R.C.P. Lond., has been appointed Certifying Surgeon under the Factory and Workshop Acts for the Bruton District of the county of Somerset.

GREY, E., M.B., Ch.B. Vict., has been appointed Senior House Surgeon at the Manchester Royal Infirmary.

LEA, C. E., M.D. Vict., has been reappointed Assistant Director of the Clinical Laboratory at the Manchester Royal Infirmary.

MORITZ, E., M.B., Ch.B. Vict., has been appointed Senior House Surgeon at the Manchester Royal Infirmary.

MOSS, HELEN IRENE, M.B., B.S. Lond., has been appointed Assistant Medical Officer at the Eastville Workhouse by the Bristol Board of Guardians.

NICHOLL, ERNEST EDWARD, L.R.C.P. Lond., M.R.C.S., has been appointed Medical Officer of Health by the South Molton (Devon) Urban District Council.

PICKARD, RANSOM, M.D., B.S. Lond., F.R.C.S., L.R.C.P., D.P.H. Camb., has been appointed Ophthalmic Surgeon to the Royal West of England Institution for Deaf and Dumb Children, Exeter.

SAWDON, G. E., M.B., Ch.B. Vict., has been appointed Junior House Surgeon at the Manchester Royal Infirmary.

WALKER, JAMES, M.B., Ch.B. Vict., has been appointed House Physician at the Manchester Royal Infirmary.

WEBB, WILLIAM TUDOR, L.R.C.P. Lond., M.R.C.S., has been appointed Medical Officer of Health by the Kingsbridge (Devon) Urban District Council.

WOODALL, A. E., M.D., Ch.B., M.Sc. Vict., has been appointed Medical Officer at the Central Branch of the Manchester Royal Infirmary.

WRIGHT, E. A., M.B., B.C. Cantab., has been appointed Certifying Surgeon under the Factory and Workshop Acts for the Romford District of the county of Essex.

YOUNG, S. L. O., M.D. Cantab., has been appointed Certifying Surgeon under the Factory and Workshop Acts for the Yarmouth (Isle of Wight) District of the county of Hants.

Vacancies.

For further information regarding each vacancy reference should be made to the advertisement (see Index).

BARNSLEY, BECKETT HOSPITAL.—Second House Surgeon, unmarried. Salary £100 per annum and all found.

BIRMINGHAM AND MIDLAND EYE HOSPITAL.—Second and Third House Surgeons. Salaries £80 and £75 per annum respectively, with board, rooms, and laundry.

BIRMINGHAM AND MIDLAND FREE HOSPITAL FOR SICK CHILDREN.—Resident Medical Officer and Resident Surgical Officer for six months. Salary £80 per annum each, with board, washing, and attendance.

BIRMINGHAM AND MIDLAND HOSPITAL FOR SKIN AND URINARY DISEASES.—Clinical Assistant. Salary at rate of 52 guineas per annum.

BIRMINGHAM, ROYAL ORTHOPÆDIC AND SPINAL HOSPITAL.—Clinical Assistant. Salary £25 per annum.

BRADFORD ROYAL INFIRMARY.—Two House Surgeons, unmarried. Salary £100 per annum, with board, residence, and washing.

BRADFORD TUBERCULOSIS DISPENSARY.—Medical Officer. Salary £350 per annum.

BRIGHTON AND HOVE HOSPITAL FOR WOMEN.—House Surgeon, unmarried, for six months. Salary £80 per annum, with apartments, board, light, attendance, &c.

BRISTOL EYE HOSPITAL.—House Surgeon. Salary £80 per annum, with board and residence.

BRISTOL ROYAL HOSPITAL FOR SICK CHILDREN AND WOMEN.—Junior Resident Officer. Salary £90 per annum, with rooms and attendance.

BURTON-ON-TRENT INFIRMARY.—House Surgeon. Salary £120 per annum, with rooms, board, coal, and light.

CANCER HOSPITAL (FREE), Fulham-road, S.W.—Assistant Pathologist. Salary £350 per annum. Also House Surgeon for six months. Salary £70 per annum.

CARLISLE, CUMBERLAND INFIRMARY.—Resident Medical Officer. Salary at rate of £80 and £100 per annum respectively, with board, lodging, and washing.

CARLISLE NON-PROVIDENT DISPENSARY.—Resident Medical Officer. Salary £150 per annum, with apartments.

CHELSEA HOSPITAL FOR WOMEN, Fulham-road, S.W.—Clinical Assistant for three months.

CHELTENHAM GENERAL HOSPITAL.—House Physician, unmarried. Salary £80 per annum, with board, lodging, and washing.

CITY OF LONDON HOSPITAL FOR DISEASES OF THE CHEST, Victoria Park, E.—Clinical Assistant.

DAVOS, QUEEN ALEXANDRA SANATORIUM.—Junior Medical Officer. Salary £100 per annum, with board, residence, and washing.

DERBY COUNTY ASYLUM, Mickleover.—Junior Assistant Medical Officer. Salary £120 per annum, with apartments, board, washing, and attendance.

DORCHESTER, DORSET COUNTY HOSPITAL.—House Surgeon, unmarried. Salary £100 per annum, with board and lodging.

DOVER, ROYAL VICTORIA HOSPITAL.—House Surgeon, unmarried. Salary £100 per annum, with board, lodging, and washing.

DUNBARTON, COUNTY OF.—Medical Officer. Salary £450 per annum.

EALING, KING EDWARD MEMORIAL HOSPITAL.—Resident Medical Officer for six months. Salary at rate of £80 per annum, with board, lodging, and laundry.

GLOUCESTER, GLOUCESTERSHIRE ROYAL INFIRMARY AND EYE INSTITUTION.—Senior House Surgeon. Salary £100 per annum, with board, residence, and washing.

HEMEL HEMPSTEAD, WEST HERTS HOSPITAL.—Resident Medical Officer. Salary £100 per annum, with rooms, board, and washing.

KENSINGTON DISPENSARY AND CHILDREN'S HOSPITAL.—Resident Medical Officer, unmarried. Salary £100 per annum, with board, apartments, and laundry.

LANCASHIRE EDUCATION COMMITTEE.—School Medical Inspector. Salary £250 per annum.

LIVERPOOL INFIRMARY FOR CHILDREN.—Resident House Surgeon and Resident House Physician. Salary at rate of £60 per annum, with board and lodging.

LOUGHBOROUGH AND DISTRICT GENERAL HOSPITAL AND DISPENSARY.—Resident House Surgeon. Salary £100 per annum, with rooms, attendance, board, and washing.

MACCLESFIELD GENERAL INFIRMARY.—Junior House Surgeon. Salary £60 per annum, with board and residence.

MANCHESTER CHILDREN'S HOSPITAL, Gartside-street.—Assistant Medical Officer for six months. Salary £50 per annum.

MANCHESTER CHILDREN'S HOSPITAL, Pendlebury.—Resident Medical Officer for six months, unmarried. Salary £40.

MANCHESTER SCHOOLS FOR MOTHERS.—Medical Officer. Salary £250 per annum.

METROPOLITAN HOSPITAL, Kingsland-road, N.E.—Physician.

NAVAL FORCES IN THE UNITED KINGDOM.—Dental Surgeon. Salary £1 per day.

NEWCASTLE-UNDER-LYME, BOROUGH OF.—Medical Officer of Health. Salary £250 per annum.

OXFORD, RADCLIFFE INFIRMARY AND COUNTY HOSPITAL.—Casualty Officer, unmarried, for six months. Salary at rate of £80 per annum, with board, &c.

OXFORD UNITED DISTRICTS.—Medical Officer of Health. Salary £400 per annum.

PLYMOUTH, SOUTH DEVON AND EAST CORNWALL HOSPITAL.—House Physician for six months. Salary £75 per annum, with board, residence, and washing.

PORTSMOUTH, ROYAL PORTSMOUTH HOSPITAL.—House Physician for six months. Salary £75 per annum, with board, &c.

PRESCOT UNION WORKHOUSE AND INFIRMARY, Whiston, Prescot, near Liverpool.—Resident Assistant Medical Officer, unmarried. Salary £120 per annum, with apartments, board, washing, attendance, &c.

PRESTON ROYAL INFIRMARY.—Junior House Surgeon, unmarried, for six months. Salary £60 per annum, with board, residence, and washing.

QUEEN'S HOSPITAL FOR CHILDREN, Hackney-road, Bethnal Green, E.—Surgeon-in-Charge of Ear, Nose, and Throat Department.

ROBBEN ISLAND LEPER SETTLEMENT, Cape of Good Hope.—Bacteriologist. Salary £400 per annum, with board and lodging.

ROCHDALE UNION.—Resident Workhouse Medical Officer. Salary £300 per annum.

ROTHERHAM HOSPITAL AND DISPENSARY.—Assistant House Surgeon. Salary £80 per annum, with board, lodging, and washing.

ROYAL EAR HOSPITAL, Soho.—House Surgeon. Salary £40 per annum.

ROYAL FREE HOSPITAL, Gray's Inn-road, W.C.—Senior Resident Medical Officer. Salary £100 per annum, with board, residence, and washing.

ROYAL NAVAL MEDICAL SERVICE.—Fifteen Appointments.

ST. BARTHOLOMEW'S HOSPITAL.—Assistant Physician.

ST. THOMAS'S HOSPITAL.—Visiting Anæsthetist.

SALFORD ROYAL HOSPITAL.—House Surgeon. Salary at rate of £75 per annum. Also Junior House Surgeon and Casualty House Surgeon. Salaries at rate of £65 per annum. All for six months, with board and residence.

SHEFFIELD UNION HOSPITAL, Firvale.—Resident Assistant Medical Officer, unmarried. Salary £100 per annum, with apartments, rations, &c.

SHREWSBURY, SALOP INFIRMARY (COUNTY HOSPITAL).—House Physician Salary at rate of £70 per annum, with board and apartments.

SLEAFORD, KESTEVEN COUNTY ASYLUM.—Assistant Medical Officer. Salary £150 per annum, with board, &c.

STAFFORD, STAFFORDSHIRE GENERAL INFIRMARY.—House Physician. Salary £82 per annum, with board, residence, and laundry.

THROAT HOSPITAL, Golden-square, W.—Resident House Surgeon. Salary £75 per annum, with board, residence, and laundry. Also Surgical Registrar.

VICTORIA HOSPITAL FOR CHILDREN, Tite-street, Chelsea, S.W.—Radiographer. Salary £75 per annum.

WALSALL AND DISTRICT HOSPITAL.—House Surgeon. Salary £120 per annum, with board, residence, and laundry. Also House Physician and Casualty Officer. Salary £90 per annum, with board, residence, and laundry.

WARRINGTON INFIRMARY AND DISPENSARY.—Junior House Surgeon. Salary at rate of £100 per annum, with board, lodging, and laundry.

WEST-END HOSPITAL FOR DISEASES OF THE NERVOUS SYSTEM, &c., 73, Welbeck-street, W.—Resident House Physician for six months. Salary at rate of £50 per annum.

WEST LONDON HOSPITAL, Hammersmith-road, W.—Two House Physicians and Three House Surgeons for six months. Board, lodging, and laundry provided.

WEST SUSSEX SOUTHERN UNITED (M.O.H.) DISTRICTS.—Medical Officer of Health. Salary at rate of £350 per annum. Also in connexion with the above, Assistant School Medical Officer for the West Sussex and Chichester Joint Education Committee. Salary at rate of £150 per annum.

WOLVERHAMPTON AND STAFFORDSHIRE GENERAL HOSPITAL.—Resident Medical Officer. Salary at rate of £100 per annum, with board, rooms, and laundry.

THE Chief Inspector of Factories, Home Office, London, S.W., gives notice of vacancies as Certifying Surgeons under the Factory and Workshop Act at Drum, in the county of Monaghan; at Morley, in the county of York, West Riding; at Cliffe, in the county of Kent; and at Penarth, in the county of Glamorgan.

Births, Marriages, and Deaths.

BIRTHS.

CODD.—On Feb. 22nd, at Holwood Lodge, Bromley, Kent, the wife of Arthur F. G. Codd, M.B., F.R.C.S., of a son.

DE COURCY WHEELER.—On Feb. 20th, at Dublin, the wife of William Ireland de Courcy Wheeler, M.D., F.R.C.S.I., of a daughter.

PRICE.—On Feb. 21st, at Castle Cary, Somerset, the wife of David Price, M.B., of a son.

MARRIAGES.

ALDRIDGE—WHITE.—On Feb. 17th, at St. John's, Ladbroke-grove, Frederick James Aldridge, M.B. Oxon., to Kathleen Marietta White, daughter of Mrs. J. Addyman Gardner.

EATON—GRIMALDI.—On Feb. 20th, at Sidmouth Parish Church, Oliver Eaton, M.R.C.S., to Gertrude Frances, third daughter of Mrs. Grimaldi, of Sidmouth.

LLOYD—PRATT.—On Feb. 14th, 1912, by the Lord Bishop of Woolwich, assisted by the Rev. J. J. Burton, Reginald Broughton Lloyd, Captain, I.M.S., to Elizabeth Ellen, eldest daughter of the Rev. J. W. Pratt, of 86, Regent's Park-road, N.W.

DEATHS.

CRUISE.—On Feb. 26th, at his residence, Merrion-square, Dublin, Sir Francis R. Cruise, M.D., D.L., K.S.G., Honorary Physician to His Majesty King George V. in Ireland, aged 77 years.

DILL.—On Feb. 24th, at Birch Wood, Burgess Hill, Sussex, Richard Dill, M.D., in his 90th year.

LAMB.—On Feb. 27th, at Glenera, Pudsey, James Henry Lamb, M.B., C.M. Edin., second son of the late James Henry Lamb, The Latch, Brechin.

MCGAVIN.—On Feb. 22nd, on board H.M.S. *Conway*, Cadet John Beauchamp McGavin, aged 13 years, only son of Mr. and Mrs. Lawrie McGavin, of 32, Weymouth-street, W.

MUNYARD.—On Feb. 22nd, at Villa Solaro, San Remo, Italy, Thomas Guillaume Munyard, L.R.C.P., L.R.C.S., aged 57 years.

OLIVER.—On Feb. 22nd, at 7, Ellison-place, Newcastle-on-Tyne, Emma Octavia, aged 58, wife of Sir Thomas Oliver, M.D.

YOUNG.—On Feb. 22nd, at Raynham-avenue, Didsbury, Lancashire, Alfred Harry Young, LL.D., F.R.C.S., aged 60, Emeritus Professor of Anatomy, Manchester University.

N.B.—A fee of 5s. is charged for the insertion of Notices of Births, Marriages, and Deaths.

Notes, Short Comments, and Answers to Correspondents.

A PORT AUTHORITY AND FOOD REGULATIONS.

THERE is no need to enlarge on the importance of every precaution being taken to protect our food-supply. We are exposed on every side to quite enough risks without having to fear as to the foreign goods which come into our ports. The tinned-meat scandals of five years ago are not forgotten, nor how, after revelations which profoundly affected the public mind not only in America but in England, Mr. Burns, with a full conception of his duty as the head of the Local Government Board, set to work to see what could be done to prevent their repetition. The outcome, it will be remembered, was the passing by both Houses of Parliament of the Public Health (Regulations as to Food) Act, 1907. There were two sets of regulations, one as regards foreign meat and the other as regards unsound food, and it is interesting to note that the Local Government Board has been taking steps to see that these regulations are being carried out. An inspector visited Newhaven in July last and found that the administration of the regulations in the port was not only unsatisfactory, but, as a matter of fact, that the report agreed upon following a conference which the inspector had with the officers of the port sanitary authority four months previously, in which was indicated the minimum amount of inspection necessary for carrying out the regulations in the district, had been seriously curtailed, with the result that a large and relatively important section of foreign foodstuffs was not being dealt with by the authority, while the inspection of coastwise traffic had been entirely suspended. The reason for this, the inspector ascertained, was in consequence of certain definite instructions of a confidential nature issued by the port sanitary authority to its officers. These were to the effect that as the medical officer was not given an increase of salary the authority informed him that he need not make any visits of inspection unless required by the inspector or customs official; and it appears from the discussion at the port sanitary authority meeting when the whole subject was ventilated, that the authority declines to increase the salary of its medical officer because of the extra duties on the ground that as the foodstuffs which come into the port are not for Newhaven but for the nation, the cost of carrying out the regulations should be borne by the Imperial exchequer. Thus because the Newhaven port sanitary authority has refused to discharge its obligations in this important matter by paying its medical officer an adequate remuneration the food-supply of London—for the vast majority of the cargoes arriving at the Sussex port goes to the metropolis—has been jeopardised. Newhaven may be a small place—its population at the last census was 6665, against 6772 in 1901—and composed entirely of the working classes, but that is no argument why the port sanitary authority declines to pay its medical officer more than £30 per annum to carry out what is probably the most important regulations issued from Whitehall within recent years. The inspection of imported foodstuffs at the port of discharge is the governing principle of the regulations, and the Local Government Board will see that the inspection is carried out in such a way as to secure the country against the introduction of unsound food of all descriptions. The port sanitary authority is taking up quite a defiant attitude in the matter, an attitude ridiculous in the extreme. The members must be aware it is absolutely essential that all authorities must carry out the regulations in the same spirit and with the same degree of uniformity, or it will be found that importers will direct their supplies to a port where a less stringent or no inspection at all is enforced. The town of Newhaven must benefit to some extent by the trade of the port, and if the port sanitary authority is so obsessed with the idea of economy that it is unable to breathe the atmosphere of sanitary advance, it had better take steps to have the port closed to all kinds of foodstuffs and foreign meat.

ROLLER SKATES IN THE STREET.

IT will probably have been noticed by many that the small boy who used to be a common object in our streets floundering along with a roller skate attached to one foot has recently been superseded and rendered inconspicuous by boys generally of a larger size, and no doubt of greater affluence, furnished with pairs of skates, and making vigorous if not expert use of them. The lad who contrived to slide along poised uncertainly on his one skate, and, punting himself about on the pavement with the other foot, was a comparatively harmless nuisance. He made a disagreeable amount of noise in a quiet street, and not infrequently he got in the way of pedestrians, but he made few enemies, and hardly deserved such reprobation as fell to his lot. Some people indeed used to pity him because he only had one skate, which suggested poverty, although others who claimed to be better informed explained that the police would interfere with the enjoyment of a pair, whereas they regarded the slow progress possible with one as harmless and negligible. Apparently this was a mistake. The police do not interfere with the use of pairs of skates in the street, and it is stated that the Home Office declines to instruct them to do so. Why this should be it is difficult to see. The public have a right to pass along the highway, and none to turn it into a place of amusement. They have also the right to proceed upon their lawful purposes without being interfered with and hampered by others who use the same thoroughfare improperly. Boys skating at full speed along the footway either regard it as a playground only, or if going from one place to another are doing so in a manner inconvenient to others. They are, in fact, not only a nuisance but a dangerous one. Intent upon their own amusement, they are not likely to make allowance for the slower movements or sudden hesitancies of the ordinary pedestrian, who, moreover, may be elderly and infirm. Roller skates carry no brakes, and collision in the case of the unskilful performer when once imminent is usually inevitable. If it takes place it may or may not be serious, but a fall upon stone pavement is not unlikely to result in a broken limb, and even when no fall takes place a foot armed with a heavy roller skate will inflict a kick more severe than most of us have experienced since our football days. Moreover, if nothing is done to put a stop to this dangerous and selfish amusement at an early stage of its development the number of its devotees will inevitably increase during the coming summer. As rinks become less popular, stocks of skates will come upon the market at a price that will suit the pocket of their only likely purchaser, the schoolboy, with the result that street-skating will become a popular pastime. Without, therefore, wishing to see the healthy amusements of the town-bred boy needlessly diminished, we may be excused for protesting against their being added to by the introduction of a new form of exercise inconvenient or dangerous to other members of the community.

A DISCLAIMER.

To the Editor of THE LANCET.

SIR,—In view of the accounts of the so-called "Miracle Case" which appeared in the papers during the past few days, I should like to make it quite clear that I am not responsible for any publicity that has been given to my name in connexion therewith.

I am, Sir, yours faithfully,

Seymour-street, W., Feb. 27th, 1912. EDWIN ASH.

THE HISTORY OF ST. GEORGE'S HOSPITAL.

IN THE LANCET of June 11th, 1910, and Jan. 21st, 1911, respectively we reviewed the first two parts of the "History of St. George's Hospital," remarking at the end of the second notice "that it certainly should appeal to all past and present students of St. George's Hospital," and that "the medical profession generally might like to learn the history of an institution associated for years with men like John Hunter, Edward Jenner, Matthew Baillie, Benjamin Brodie, and Thomas Young." No further part of this interesting work has yet been issued, and we notice, with regret, from a letter in the current issue of the *St. George's Hospital Gazette* that Mr. George C. Peachey, who undertook to write the book, has failed to receive the financial support which had been promised. Ill-health has added to his burden, but with praiseworthy courage he writes, "The one thing I am sure of is that the work will not be abandoned in my life-time." There should be many members of the medical profession and even of the lay public to subscribe to a work which adds to a neglected side of historical literature, and we feel sure that the labours of Mr. Peachey would be more fully appreciated and encouraged if the difficulties under which he is working were widely known.

PHARMACOLOGICAL RESEARCH.

WE have received from Messrs. Burroughs, Wellcome, and Co., Snow Hill Buildings, London, E.C., a series of reprints of the scientific papers contributed recently by the chemists of the Wellcome Chemical Research Laboratories to the Chemical Society. In the paper by Frederic B. Power, Ph.D., and Charles W. Moore, Ph.D., on the Constituents of Bryony Root, the authors conclude that the activity of bryony root cannot be attributed to a single definite principle, and that it would appear that its purgative property resides chiefly in the resinous and alkaloidal constituents. There is, further, no reason for assuming that the active principle is a glucoside. In a paper on the Constituents of Rhubarb, Mr. Frank Tutin and Mr. Hubert W. B. Clewer summarise the investigation by reporting that the percentages of the various substances actually present in rhubarb are as follows: Essential oil, 0·005; verosterol, 0·1; mixture of fatty acids, 0·31; cinnamic acid (free), 0·01; gallic acid (free), 2·2; rhein, 0·12; rheinolic acid, 0·003; emodin, 0·78; aloe-emodin, 0·16; emodin monomethyl ether, 0·22; chrysophanic acid, 0·49; non-glucosidic resin, 10·4; tannin, 0·52; crystalline mixture of glucosides of the anthraquinone derivatives, 2·0. Of the anthraquinone derivatives rhein, emodin, and emodin monomethyl ether were found to be devoid of purgative action, the first two compounds being quickly excreted in the urine. Aloe-emodin and chrysophanic acid were distinctly, although not very actively, purgative. The glucosides of the anthraquinone derivatives had a bitter, astringent taste, but were quite devoid of purgative action. One of the non-glucosidic resins had a prompt purgative action, 0·1 gramme causing a much more pronounced

effect than the same weight of aloe-emodin or of chrysophanic acid, although it represented a much smaller amount of the drug. In a paper on the Constituents of the Bulb of Buphane Disticha ("poison bulb," a native of South Africa, or the "gift bol," as the Dutch call it) the principal alkaloid found was not brucine, as has been asserted, but an amorphous base called buphanine, which resembles hyoscine in its physiological action. Another alkaloid—narcissine—is also present, but it is not very toxic. In a paper on the Constituents of the Seeds of Casimiroa Edulis, the authors—Frederic B. Power, Ph.D., and Thomas Callan, Ph.D.—conclude that there is no evidence of the presence of a definite glucoside, as has previously been affirmed, and physiological tests have failed to confirm the reputed hypnotic or toxic properties of the seeds. A note upon Casimiroa edulis appeared in THE LANCET of August 21st, 1909, p. 561, in which, on the authority of certain French investigators, it was stated that this Mexican plant had hypnotic and analgesic properties. Lastly, a paper on the Chemical Examination of Calabar Beans, by Arthur H. Salway, Ph.D., D.Sc., shows that the bean, in addition to some essential oil, resin, and other amorphous substances, contains physostigmine; physovenine, a newly recognised alkaloid which, like physostigmine, produces a powerful myotic effect on the pupil of the eye; eseramine, another alkaloid; and oils. No evidence was obtained of the presence in Calabar beans of the alkaloid "isophysostigmine" or of "eseridine," said to have been isolated by previous investigators.

VITAL STATISTICS OF THE EAST AFRICA PROTECTORATE.

THE annual report of the Governor, Sir E. P. C. Girouard, K.C.M.G., on the administration of the East Africa Protectorate has been received at the Colonial Office, and is to be presented to Parliament in due course. The territories comprised in the Protectorate have an area of approximately 200,000 square miles, and include the whole of the coast from Umba to the Juba River, granted on a 50 years' lease by the Sultan of Zanzibar, as also the vast territories in the interior bounded in part by international conventional lines. On the west the Protectorate adjoins that of Uganda. A great portion consists of pasture lands or barren wastes, but there are not lacking extensive districts of great natural fertility on the coast, as well as in the interior.

It is stated in the report that the public health during 1910 was more satisfactory than in the previous five years. The improvement resulted largely from weather conditions, a third year of scanty rainfall in succession having modified the courses of various diseases. The total numbers of patients attended to in the Government hospitals during the past three years were: In 1908, 90,712 (with 940 deaths); in 1909, 90,924 (1034 deaths); and in 1910, 89,044 (1110 deaths).

The decrease in cases was most noticeable in the blackwater and malarial admissions; of the latter there were over 1500 fewer, with 45 per cent. less deaths. The year was fortunate in that there was no particular outbreak of epidemic disease to record. Of the endemic diseases, small-pox and plague showed a considerable subsidence, while there was a continued existence of sleeping sickness, which is restricted to the shores of Lake Nyanza. Two diseases—tuberculosis and enteric fever—are on the increase, and though the number of recorded cases of the former is very small, there is the evidence of various medical missions, which are in closer contact with the native life of the country than is possible at Government dispensaries, that it is spreading. The bulk of the enteric cases occurred among Europeans, and from the list of localities to which the infection has been attributed it has a wide range. Before 1906 it was practically unknown. An increase in the number of cases of amœbic dysentery has also to be recorded. Of other diseases, those affecting the nervous system remained stationary. There was an increased number both of digestive and respiratory illnesses; the latter, however, showed a largely lowered death-rate compared with the previous year. A large number of local injuries were treated, with 50 per cent. less deaths. 3071 surgical operations were performed, with 9 fatalities, 2 more than last year out of 1547 operations.

In 1910 diseases of the nervous, respiratory, circulatory, digestive, and urinary systems, generative organs, and locomotory systems, &c., numbered 38 per cent. of the total admissions, or 35,742, with 298 deaths. 229 of these deaths were caused by respiratory and digestive ailments. General and local injuries amounted to 19,173 cases, with 20 deaths. The details as to insect-borne diseases were: sleeping sickness, 96 admissions and 22 deaths; plague, 8 and 4; dengue, 1 and *nil*; malaria, 11,205 and 50; blackwater fever, 10 and 5. The figures for the following diseases were: small-pox, 21 admissions and 8 deaths; enteric fever, 30 and 2; beri-beri, 32 and 1; tetanus, 4 and 3; tuberculosis, 49 and 7; syphilis, 1413 and 12; gonorrhœa, 978 and 1; leprosy, 5 and *nil*.

Alienist would be much obliged if any of our readers would kindly inform him what is the maximum daily quantity of thyroid extract it is safe to give to a young plethoric adult suffering from threatened dementia. He is at present taking each day eight of the 5 grain thyroid gland tabloids manufactured by Burroughs, Wellcome, and Co., each of which is supposed to be equivalent to one grain of the desiccated gland. Again, is it safe to continue this treatment indefinitely? An answer to the above queries by those having had experience of the above treatment in mental cases would greatly oblige.

Arthur.—There is no doubt that difficulty attends the sale of practices at the present moment. There is no great likelihood that the value of the appointments will decrease to such an extent, but should a successor obtain them he still runs a risk of not making in other directions the income which the practice has hitherto commanded.

Mr. W. G. Walford.—The friend who is quoted is not trustworthy. No one has commented upon the views here; and so far from the Listerian doctrines being ridiculed in THE LANCET all Lord Lister's early work was published in these columns, where the first account of the new methods and new system appeared.

A. E. H.—Our correspondent would seem to have entirely misunderstood the scope and results of the work of the pathologist to the Scottish Asylums.

J. S.—The address of the honorary secretary of the Association of Public Vaccinators is 1, Mitre-court-buildings, Temple, E.C.

Mr. Algernon Ashton.—In our notice of Lord Lister's career the error was not made.

J. G. (*Lancs.*) has, we consider, assumed too much.

COMMUNICATIONS not noticed in our present issue will receive attention in our next.

A DIARY OF CONGRESSES.

WE shall publish this diary from time to time that our readers may have under their hands the dates of the approaching scientific Congresses. It is unnecessary to issue the lists of all these functions week by week, and we propose to make only such gatherings as will occur in the immediate future the subject of regular announcement. The following Congresses, Conferences, and Exhibitions are announced for March and April:—

March 7th–11th (Berlin).—Thirty-third Balneological Congress.
March 23rd–April 4th (London, Royal Agricultural Hall).—International Smoke Abatement Exhibition.
April 1st and 2nd (Milan).—Italian National Convention upon the Sexual Question.
" (London).—First Congress of Pure Food and Health Society of Great Britain.
" 1st–7th (Tunis).—Twenty-second Congress of French-speaking Alienists and Neurologists.
" 8th–13th (Rome).—Seventh International Congress of Dermatology and Syphilology.
" 8th–15th (Johannesburg).—Thirteenth South African Medical Congress.
" 9th–11th (Paris).—Congress of Physiotherapy for French-speaking Physicians.
" 9th (Berlin).—Eleventh Congress of the German Society for Orthopædic Surgery.
" 9th–13th (Giessen).—Congress on Study of Families, Inheritance, and Race Hygiene.
" 10th–13th (Berlin).—Forty-first Congress of the German Surgical Society.
" 14th (Berlin).—Eighth Congress of the German Röntgen Society.
" 14th–20th (Rome).—Seventh International Congress on Tuberculosis.
" 15th–18th (Wiesbaden).—Twenty-ninth German Congress for Internal Medicine.
" 21st–24th (Munich).—Twenty-sixth Meeting of the Anatomical Society.
" (London, Olympia).—Ideal Homes Exhibition.

METEOROLOGICAL READINGS.

(Taken daily at 8.30 a.m. by Steward's Instruments.)

THE LANCET Office, Feb. 28th, 1912.

Date.	Barometer reduced to Sea Level and 32° F.	Direction of Wind.	Rain fall.	Solar Radio in Vacuo.	Maximum Temp. Shade.	Min. Temp.	Wet Bulb.	Dry Bulb.	Remarks.
Feb. 22	29·98	S.W.	0·02	57	55	41	50	51	Raining
" 23	29·89	S.W.	0·14	61	56	51	52	53	Overcast
" 24	29·93	N.E.	0·37	65	50	44	44	45	Overcast
" 25	29·85	S.W.	0·04	83	54	45	47	49	Cloudy
" 26	30·01	S.W.	...	79	52	39	41	42	Overcast
" 27	30·04	W.	0·02	90	58	42	47	51	Cloudy
" 28	30·16	S.W.	...	86	59	51	50	52	Overcast

The following journals, magazines, &c., have been received:—
St. Thomas's Hospital Gazette, St. George's Hospital Gazette, Medical Chronicle, Archives Internationales de Neurologie, Annales de Gynécologie et d'Obstétrique, Archives de Médecine et Pharmacie Navales, Bulletins et Mémoires de la Société Médicale des Hôpitaux de Paris, Malaria e Malattie dei Paesi Caldi, Zentralblatt für die gesamte innere Medizin und ihre Grenzebiete, Revista de los Hospitales, Revista Médica del Uruguay, Archivo Brasileiros de Medicina.

Medical Diary for the ensuing Week.

SOCIETIES.

ROYAL SOCIETY OF MEDICINE, 15, Cavendish-square, W. (temporary address during building of new house).

TUESDAY.

SECTION OF ANÆSTHETICS (Hon. Secretaries—Mrs. Dickinson Berry, H. J. Scharlieb, C.M.G.): at 5.30 P.M.

Joint Meeting with
SURGICAL SECTION and
MEDICAL SECTION.

Adjourned Debate:
On Partial Thyroidectomy under Local Anæsthesia, with Special Reference to Exophthalmic Goitre.

The Debate will be opened by Mr. A. E. Barker. The following will take part in the Debate:—Mr. Charters Symonds, Mr. Donald Armour, Mr. Walter Edmunds, Dr. J. Blumfeld, Mr. C. H. Fagge, Dr. H. J. Scharlieb, C.M.G., Dr. G. A. H. Barton, Mr. Rupert Farrant, Mr. H. J. Paterson, and Mr. James Berry.

PATHOLOGICAL SECTION (Hon. Secretaries—J. C. G. Ledingham, A. E. Boycott), at Pathological Laboratory, Royal Army Medical College, Grosvenor-road, S.W.: at 8.30 P.M.

Colonel W. H. Horrocks: Variability of the Typhoid Bacillus.
Major W. S. Harrison: Joint Culture in Rheumatic Fever.
Lt.-Col. Sir William Leishman: Further Observations on Tick Fever.
Major S. L. Cummins: Observations on a Typhoid Carrier.
Captain J. C. Kennedy: A Case of Actinomycosis.

WEDNESDAY.

BALNEOLOGICAL AND CLIMATOLOGICAL SECTION (Hon. Secretaries—A. Manuel, F. A. de T. Mouillot): at 5.30 P.M.

Paper:
Dr. Armstrong (Buxton): The Spa Treatment of Neuritis.

(After the meeting Members will dine together at Pagani's Restaurant, Great Portland-street, W., at 7 P.M. Price of dinner 3*s.* 6*d.* All Fellows and Members are invited to attend and bring guests. In order that proper arrangements may be made Members are requested to reply to the Hon. Secretaries of the Section, 15, Cavendish-square, W.)

THURSDAY.

OBSTETRICAL AND GYNÆCOLOGICAL SECTION (Hon. Secretaries—J. H. Targett, W. W. H. Tate): at 8 P.M.

Specimens:
Dr. Lediard: (1) Extra-peritoneal Suppurating Dermoid; (2) Sacral Teratoma in an Infant Two Days Old—Operation and Recovery; (3) Large Warty Fibroma of Labium.
Dr. Briggs: (1) Large Placenta in Case of Ectopic Gestation Three Months Beyond Term; (2) Fibroid of Uterus of Unusual Character.
Dr. Clifford White: Fœtus with Congenital Hereditary Graves's Disease.

Short Communications:
Dr. Briggs: Cæsarean Section in a Case of Dystocia Due to Loops of Cord Round Fœtus at Term.
Dr. Fothergill: The Classification of Disease.
Dr. Glendining: Fibro-adenoma of the Ovarian Fimbria and the Question of Accessory Ovary.
Dr. Lockyer: Embryotomy after Version for Placenta Prævia.

(N.B.—On Friday, March 15th, at 8.30 P.M., Members are specially invited to attend the meeting of the Electro-Therapeutical Section, when Dr. Bordier (of Lyons) will read a paper on the Radio-therapeutic Treatment of Uterine Fibroma.)

FRIDAY.

GENERAL MEETING OF FELLOWS at 4.45 P.M.
Election of Candidates for Fellowship.

CLINICAL SECTION (Hon. Secretaries: James Galloway, Charles H. Fagge): at 8.30 P.M.

Demonstration of Cases:
Dr. Galloway: Case of Muscular Dystrophy.
And other Cases.

MEDICAL SOCIETY OF LONDON, 11, Chandos-street, Cavendish-square, W.

MONDAY.—9 P.M., Dr. A. E. Garrod: Glycosuria. (Lettsomian Lecture III.)

RÖNTGEN SOCIETY, City and Guilds Technical College, Leonard-street, City-road, Finsbury.

TUESDAY.—8.15 P.M., Demonstrations:—Prof. S. P. Thompson: Physiological Action of an Alternating Magnetic Field.—Mr. W. Hampson: Radiometer.

NORTH-EAST LONDON CLINICAL SOCIETY, Prince of Wales's Hospital, Tottenham, N.

THURSDAY.—4.15 P.M., Clinical Cases.

WIMBLEDON AND DISTRICT MEDICAL SOCIETY, Johnston's Rooms, 6, Broadway, Wimbledon.

FRIDAY.—9 P.M., Dr. G. P. Shuter: Anæsthetics

LECTURES, ADDRESSES, DEMONSTRATIONS, &c.

ROYAL COLLEGE OF SURGEONS OF ENGLAND, Lincoln's Inn Fields, W.C.

MONDAY, WEDNESDAY, AND FRIDAY.—5 P.M., Prof. A. Keith Important Phases in the Evolution of Man.

MEDICAL GRADUATES' COLLEGE AND POLYCLINIC, 22, Chenies-street, W.C.

MONDAY.—4 P.M., Dr. H. MacCormac: Clinique (Skin). 5.15 P.M. Lecture:—Dr. F. W. Price: Showing Cases to Illustrate Lectures.

TUESDAY.—4 P.M., Dr. T. Thompson: Clinique (Medical). 5.15 P.M., Lecture:—Dr. G. E. Herman: Some Points in the Hygiene of Pregnancy.

WEDNESDAY.—4 P.M., Mr. P. Turner: Clinique (Surgical). 5.15 P.M., Lecture:—Dr. A. F. Tredgold: Some Medical Aspects of Eugenics.

THURSDAY.—4 P.M., Mr. H. Lett: Clinique (Surgical). 5.15 P.M., Lecture:—Dr. C. Riviere: The Action of Tuberculin and its Application to the Treatment of Different Forms of Tuberculosis.

FRIDAY.—4 P.M., Mr. H. T. Mant: Clinique (Ear, Nose, and Throat). 5.15 P.M., Lecture:—Dr. W. Wingrave: Cerebro-spinal Fluid.

POST-GRADUATE COLLEGE, West London Hospital, Hammersmith-road, W.

MONDAY.—10 A.M., Dr. Simson: Diseases of Women. 10.30 A.M., Surgical Registrar: Demonstration of Cases in Wards. 12 noon, Dr. Bernstein: Pathological Demonstration. 2 P.M., Medical and Surgical Clinics. X Rays. Operations. 2.30 P.M., Mr. Dunn: Diseases of the Eye. 5 P.M., Lecture:—Mr. R. Lloyd: Administration of Anæsthetics.

TUESDAY.—10 A.M., Dr. Robinson: Gynæcological Operations. 11 A.M., Mr. Etherington-Smith: Demonstration of Minor Operations. 2 P.M., Medical and Surgical Clinics. X Rays. Operations. Dr. Davis: Diseases of the Throat, Nose, and Ear. 2.30 P.M., Dr. Abraham: Diseases of the Skin. 5 P.M., Lecture:—Mr. Pardoe: Clinical (Urinary Surgery).

WEDNESDAY.—10 A.M., Dr. Saunders: Diseases of Children. Dr. Davis: Operations of the Throat, Nose, and Ear. 10.30 A.M., Surgical Registrar: Demonstration of Cases in Wards. 2 P.M., Medical and Surgical Clinics. X Rays. Operations. Mr. B. Harman: Diseases of the Eye. 2.30 P.M.. Dr. Simson: Diseases of Women. 5 P.M., Lecture:—Dr. Low: Insects as Carriers of Disease in Tropical Medicine.

THURSDAY.—10 A.M., Dr. Simson: Gynæcological Demonstration. 12.15 P.M., Lecture:—Dr. G. Stewart: Practical Medicine. 2 P.M., Medical and Surgical Clinics. X Rays. Operations. 2.30 P.M., Mr. Dunn: Diseases of the Eye. 5 P.M., Lecture:—Mr. Baldwin: Practical Surgery. (Lecture VI.)

FRIDAY.—10 A.M., Dr. Robinson: Gynæcological Operations. 12.15 P.M., Lecture:—Dr. Pritchard: Practical Medicine. 2 P.M., Medical and Surgical Clinics. X Rays. Operations. Dr. Davis: Diseases of the Throat, Nose, and Ear. 2.30 P.M., Dr. Abraham: Diseases of the Skin. 5 P.M., Lecture:—Dr. Morton: The X Ray Diagnosis of the Digestive System.

SATURDAY.—10 A.M., Dr. Saunders: Diseases of Children. Dr. Davis: Operations of the Throat, Nose, and Ear. Mr. Bishop Harman: Diseases of the Eye. 10.30 A.M., Medical Registrar: Demonstration of Cases in Wards. 2 P.M., Medical and Surgical Clinics. X Rays. Operations.

NORTH-EAST LONDON POST-GRADUATE COLLEGE, Prince of Wales's General Hospital, Tottenham, N.

MONDAY.—Clinics:—10.30 A.M., Surgical Out-patient (Mr. E. Gillespie). 2.30 P.M., Medical Out-patient (Dr. T. R. Whipham): Nose, Throat, and Ear (Mr. H. D. Gillies). 3 P.M., Clinical Pathology and Pathological Demonstration (Dr. W. H. Duncan).

TUESDAY.—Clinic; 2.30 P.M., Operations. Clinics:—Medical Out-patient (Dr. A. G. Auld).; Surgical (Mr. Howell Evans); Gynæcological (Dr. A. E. Giles). 3.30 P.M., Medical In-patient (Dr. A. J. Whiting). 4.30 P.M., Lecture:—Dr. G. G. Macdonald: The Bacteriology of Catarrh.

WEDNESDAY.—Clinics:—2 P.M., Throat Operations (Mr. Gillies). 2.30 P.M., Children's Out-patient (Dr. T. R. Whipham); Skin (Dr. G. N. Meachen): Eye (Mr. R. P. Brooks). 3 P.M., X Rays (Mr. W. Steuart); Clinical Pathology and Pathological Demonstration (Dr. W. H. Duncan). 5.30 P.M., Eye Operations (Mr. Brooks).

THURSDAY.—2.30 P.M., Gynæcological Operations (Dr. A. E. Giles). Clinics:—Medical Out-patient (Dr. A. J. Whiting); Surgical (Mr. Carson). 3 P.M., Medical In-patient (Dr. G. P. Chappel).

FRIDAY.—2.30 P.M., Operations. Clinics:—Medical Out-patient (Dr. A. G. Auld): Surgical (Mr. E. Gillespie); Eye (Mr. R. P. Brooks). 3 P.M., Medical In-patient (Dr. R. M. Leslie); Clinical Pathology and Pathological Demonstration (Dr. W. H. Duncan).

LONDON SCHOOL OF CLINICAL MEDICINE, Dreadnought Hospital, Greenwich.

MONDAY.—2 P.M., Operations. 2.15 P.M., Mr. Turner: Surgery. 3.15 P.M., Sir Dyce Duckworth: Medicine. 4.30 P.M., Mr. R. Lake: Ear and Throat. Out-patient Demonstrations:—10 A.M., Surgical and Medical. 12 noon, Ear and Throat.

TUESDAY.—2 P.M., Operations. 3.15 P.M., Dr. R. Wells: Medicine. 2.15 P.M., Mr. R. Carling: Surgery. 4.15 P.M., Sir M. Morris: Diseases of the Skin. Out-patient Demonstrations:—10 A.M., Surgical and Medical. 12 noon, Skin. 2.15 P.M., Special Lecture:—Mr. Carling: Operations on the Heart and Vessels.

WEDNESDAY.—2 P.M., Operations. 2.15 P.M., Dr. F. Taylor: Medicine. 3.30 P.M., Mr. Cargill: Ophthalmology. Out-patient Demonstrations:—10 A.M., Surgical and Medical. 11 A.M., Eye.

THURSDAY.—2 P.M., Operations. 2.15 P.M., Dr. G. Rankin: Medicine. 3.15 P.M., Sir W. Bennett: Surgery. Out-patient Demonstrations:—10 A.M., Surgical and Medical. 12 noon, Ear and Throat. 4.30 P.M., Special Lecture:—Mr. Cantlie: Applied Anatomy.

FRIDAY.—2 P.M., Operations. 2.15 P.M., Sir J. Rose Bradford: Medicine. 3.15 P.M., Mr. McGavin: Surgery. Out-patient Demonstrations:—10 A.M., Surgical and Medical. 12 noon, Skin.

SATURDAY.—10 A.M., Radiography. 11 A.M., Dr. A. Davies: Pathological Demonstration. 2 P.M., Operations. Out-patient Demonstration:—10 A.M., Surgical and Medical. 11 A.M., Eye.

HOSPITAL FOR SICK CHILDREN, Great Ormond-street, W.C.

THURSDAY.—4 P.M., Lecture:—Dr. Langmead Cyclic Vomiting.

NATIONAL HOSPITAL FOR THE PARALYSED AND EPILEPTIC. Queen-square, Bloomsbury, W.C.

TUESDAY.—3.30 P.M., Clinical Lecture:—Dr. F. Batten: Muscular Atrophy.

FRIDAY.—3.30 P.M., Clinical Lecture:—Dr. G. Holmes: Paths of Sensory Conduction.

ST. JOHN'S HOSPITAL FOR DISEASES OF THE SKIN, 49, Leicester-square, W.C.

TUESDAY.—6 P.M., Dr. W. K. Sibley: Syphilis.

THURSDAY.—6 P.M., Chesterfield Lecture:—Dr. M. Dockrell: Undiagnosed Syphilides.

UNIVERSITY OF LONDON (UNIVERSITY COLLEGE), The Francis Galton Laboratory for National Eugenics.

TUESDAY.—8.30 P.M., Mr. N. B. Harman: Some Signs of Physical Degeneracy and their Lessons. (Lecture VI.)

ANCOATS HOSPITAL, Manchester.

THURSDAY.—4.15 P.M., Dr. F. C. Moore: Treatment of Pneumonia. (Post-Graduate Clinic.)

MANCHESTER ROYAL INFIRMARY.

FRIDAY.—4.30 P.M., Mr. Rayner: Tuberculous Disease of the Spine and Hip, with Special Reference to Early Diagnosis.

SALFORD ROYAL HOSPITAL.

THURSDAY.—4.30 P.M., Mr. F. P. Buckley: Operative Treatment of Fractures. (Post-Graduate Course).

OPERATIONS.

METROPOLITAN HOSPITALS.

MONDAY (4th).—London (2 P.M.), St. Bartholomew's (1.30 P.M.), St. Thomas's (3.30 P.M.), St. George's (2 P.M.), St. Mary's (2.30 P.M.), Middlesex (1.30 P.M.), Westminster (2 P.M.), Chelsea (2 P.M.), Samaritan (Gynæcological, by Physicians, 2 P.M.), Soho-square (2 P.M.), Gt. Northern Central (2.30 P.M.), West London (2.30 P.M.), London Throat (9.30 A.M.), Royal Free (2 P.M.), Guy's (1.30 P.M.), Children, Gt. Ormond-street (9 A.M.), St. Mark's (2.30 P.M.), Central London Throat and Ear (Minor 9 A.M., Major 2 P.M.).

TUESDAY (5th).—London (2 P.M.), St. Bartholomew's (1.30 P.M.), St. Thomas's (3.30 P.M.), Guy's (1.30 P.M.), Middlesex (1.30 P.M.), Westminster (2 P.M.), West London, (2.30 P.M.), University College (2 P.M.), St. George's (1 P.M.), St. Mary's (1 P.M.), St. Mark's (2.30 P.M.), Cancer (2 P.M.), Metropolitan (2.30 P.M.), London Throat (9.30 A.M.), Samaritan (9.30 A.M. and 2.30 P.M.), Throat, Golden-square (9.30 A.M.), Soho-square (2 P.M.), Chelsea (2 P.M.), Children, Gt. Ormond-street (9 A.M. and 2 P.M., Ophthalmic, 2 P.M.), Tottenham (2.30 P.M.), Central London Throat and Ear (Minor, 9 A.M., Major, 2 P.M.), Royal National Orthopædic (9.30 A.M. and 4 P.M.).

WEDNESDAY (6th).—St. Bartholomew's (1.30 P.M.), University College (2 P.M.), Royal Free (2 P.M.), Middlesex (1.30 P.M.), Charing Cross (3 P.M.), St. Thomas's 2 P.M.), London (2 P.M.), King's College (2 P.M.), St. George's (Ophthalmic, 1 P.M.), St. Mary's (2 P.M.), St. Peter's (2 P.M.), Samaritan (9.30 A.M. and 2.30 P.M.), Gt. Northern Central (2.30 P.M.), Westminster (2 P.M.), Metropolitan (2.30 P.M.), London Throat (9.30 A.M.), Cancer (2 P.M.), Throat, Golden-square (9.30 A.M.), Guy's (1.30 P.M.), Royal Ear (2 P.M.), Children, Gt. Ormond-street (9 A.M. and 9.30 A.M., Dental, 2 P.M.), Tottenham (Ophthalmic, 2.30 P.M.), West London (2.30 P.M.), Central London Throat and Ear (Minor, 9 A.M., Major, 2 P.M.).

THURSDAY (7th).—St. Bartholomew's (1.30 P.M.), St. Thomas's (3.30 P.M.), University College (2 P.M.), Charing Cross (3 P.M.), St. George's (1 P.M.), London (2 P.M.), King's College (2 P.M.), Middlesex (1.30 P.M.), St. Mary's (2.30 P.M.), Soho-square (2 P.M.), North-West London (2 P.M.), Gt. Northern Central (Gynæcological, 2.30 P.M.), Metropolitan (2.30 P.M.), London Throat (9.30 A.M.), Samaritan (9.30 A.M and 2.30 P.M.), Throat, Golden-square (9.30 A.M.), Guy's (1.30 P.M.), Royal National Orthopædic (9 A.M. and 3.30 P.M.), Royal Ear (2 P.M.), Children Gt. Ormond-street (9 A.M. and 2 P.M.), Tottenham (Gynæcological, 2.30 P.M.), West London (2.30 P.M), Central London Throat and Ear (Minor, 9 A.M., Major, 2 P.M.).

FRIDAY (8th).—London (2 P.M.), St. Bartholomew's (1.30 P.M.), St. Thomas's (3.30 P.M.), Guy's (1.30 P.M.), Middlesex (1.30 P.M.), Charing Cross (3 P.M.), St. George's (1 P.M.), King's College (2 P.M.), St. Mary's (2 P.M.), Ophthalmic (10 A.M.), Cancer (2 P.M.), Chelsea (2 P.M.), Gt. Northern Central (2.30 P.M.), West London (2.30 P.M.), London Throat (9.30 A.M.), Samaritan (9.30 A.M. and 2.30 P.M.), Throat, Golden-square (9.30 A.M.), Royal National Orthopædic (3.30 P.M.), Soho-square (2 P.M.), Children, Gt. Ormond-street (9 A.M., Aural, 2 P.M.), Tottenham (2.30 P.M.), St. Peter's (2 P.M.)., Central London Throat and Ear (Minor, 9 A.M., Major, 2 P.M.).

SATURDAY (9th).—Royal Free (9A.M.), London (2 P.M.), Middlesex (1.30 P.M.), St. Thomas's (2 P.M.), University College (9.15 A.M.), Charing Cross (2 P.M.), St. George's (1 P.M.), St. Mary's (10 A.M.), Throat, Golden-square (9.30 A.M.), Guy's (1.30 P.M.), Children, Gt. Ormond-street (9 A.M. and 9.30 A.M.), West London (2.30 P.M.).

At the Royal Eye Hospital (2 P.M.), the Royal London Ophthalmic (10 A.M.), the Royal Westminster Ophthalmic (1.30 P.M.), and the Central London Ophthalmic (2 P.M.), Hospital operations are performed daily.

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THE INDEX TO THE LANCET.

The Index and Title-page to Vol. II. of 1911 were given in THE LANCET of Dec. 30th, 1911.

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Lettsomian Lectures
ON
GLYCOSURIA.

Delivered before the Medical Society of London.

BY ARCHIBALD E. GARROD, D.M., M.A. OXON., F.R.C.P. LOND., F.R.S.,

PHYSICIAN TO, AND LECTURER ON CHEMICAL PATHOLOGY AT, ST. BARTHOLOMEW'S HOSPITAL; PHYSICIAN TO THE HOSPITAL FOR SICK CHILDREN.

LECTURE III.*

Delivered on March 4th.

MR. PRESIDENT AND GENTLEMEN,—When we enter upon the study of the internal secretions, and of the effects of disease in the glands which produce them, we find ourselves in one of the wonderlands of physiology and medicine. It behoves us to move with caution and to plant our footsteps firmly as we go, for the path is narrow and slippery, and on either side of it lie the swamps of fallacy and the mists of unrestrained hypothesis.

It is only in comparatively recent years that we have come to learn anything of the functions of the ductless glands, but, once started, progress has been rapid. We are beginning to appreciate the disturbances produced in the organism by excessive or diminished activity of certain individual glands of the group, and especially of the thyroid, and to trace indications of correlation of functions and interaction of these organs; of mutual inhibition in some cases and of coöperation in others.

Hence we are able to realise that a clinical picture which is presented when one of the glands of internal secretion, ductless or other, is diseased, may be due, not only to restricted or excessive production of the secretion of the diseased gland, but also to an upsetting of a natural balance of functions, due to a withdrawal of the stimulus or restraint which it exerts upon other members of the group. Such is the idea which underlies the use of the term polyglandular syndrome, which is often heard in the present day. Thus, removal of the thyroid leads to enlargement of the pituitary gland, and when the thyroid is over-active the thymus tends to undergo hypertrophy, to quote only two out of a number of known examples of interrelation.

Unquestionably these glands of internal secretion exert profound hormonic influences upon the metabolic processes carried on in the organism. When the thyroid is over-active the metabolic fires burn too brightly; when its activity is suspended they burn low; and the influence of internal secretions upon carbohydrate metabolism in particular admits of no question.

Nor must we omit to mention the influence exerted by the ductless glands upon bodily development—an influence which is clearly manifested in acromegaly, and more clearly still in diseases which develop during childhood. It is seen in the arrested bodily and mental growth of the cretin, in the precocious obesity and hirsuties induced by some tumours of the adrenal cortex, in the obesity and infantilism which constitute Fröhlich's syndrome, and in the precocious puberty associated with tumours of the pineal gland.

However, it is with the influence of the ductless glands upon carbohydrate metabolism that we are at present concerned.

GLYCOSURIA AND THE THYROID GLAND.

That exophthalmic goitre, the symptom-complex which results from hyperthyroidism, is sometimes associated with diabetes has long been known, as witness the cases recorded by Dumontpellier[1] in 1869, by Brunton[2] in 1874, by Wilks[3] in 1875, and by O'Neill[4] in 1878; and more recently it has been shown that the lowering of tolerance of glucose is not uncommon in association herewith.

Observers differ as to the frequency of such alimentary glycosuria e saccharo in Graves's disease. Undoubtedly in many cases no diminution of tolerance can be detected, but my own experience leads me to take my stand with those who hold that it is by no means an uncommon phenomenon. In not a few cases spontaneous excretion of sugar, of a transitory or intermittent kind, is observed, if carefully watched for, and in others, as I have already mentioned, persistent glycosuria, with the usual attendant symptoms which go to make up the clinical picture of diabetes. Thus we find the three grades of disturbed carbohydrate metabolism, to which I have so frequently referred, all represented among cases of exophthalmic goitre.

In some cases I have seen glycosuria follow so small a dose of glucose as 20 or 30 grammes and in a larger number 100 grammes sufficed to produce that effect. For example, a girl, aged 18, was admitted to hospital suffering from exophthalmic goitre. Her urine, passed after admission, was found to contain traces of a reducing substance which was proved to be glucose. This did not recur. At a later period a dose of 100 grammes of glucose was given at 11.30 A.M.; the urine passed at 1.30 P.M. contained 0 29 per cent. glucose, a specimen passed at 4 P.M. contained a mere trace, and subsequent specimens were sugar-free. In some cases the test dose of glucose has been followed by a glycosuria which has persisted for several days, as if the patient were actually on the verge of spontaneous excretion of glucose.

In the cases in which transitory spontaneous glycosuria occurs the output of sugar tends to be small—under 1 per cent.; it may be present on a single day only, or on several successive days, or it may recur at intervals. This phenomenon suggests that the tolerance is habitually so low that it is occasionally overstepped on an ordinary diet, and is in accord with the statement of H. Strauss,[5] that in the majority of conditions in which alimentary glycosuria e saccharo is wont to be met with spontaneous glycosuria is not infrequently seen.

The following case, which may be included in the diabetic group, exhibited several features of peculiar interest.

A coal porter, aged 33 years, was admitted to St. Bartholomew's Hospital under my care on May 9th, 1911. In his family asthma was the only hereditary complaint. At the beginning of April his wife had noticed that his eyes were staring, and at the same time he began to suffer from shooting pains in the occipital region, which were usually worst in the early morning. He tired more easily than usual and noticed that his heart beat unusually quickly at times. He had lost 5 lb. in weight during the preceding five weeks. His eyes were markedly protuberant and staring. There was retraction of the upper lid, and von Graefe's sign was well seen; convergence was natural, and his forehead became wrinkled when he looked upwards. There was conspicuous fine tremor of the hands, and his emotional and restless state tended to confirm the diagnosis of Graves's disease. However, his thyroid gland was not obviously enlarged. The area of cardiac dulness was normal and no murmur was heard, and although he had noticed palpitation at times his pulse-rate was only 60 on his admission, full and regular, with a systolic tension of 112 mm. His urine contained a reducing substance, which was proved to be glucose, to the amount of 0·06 to 0·38 per cent. on different days. The carbohydrate of his diet was reduced, and he was kept completely at rest, but he at no time had less than 6 oz. of bread a day during his stay in hospital. His pulse remained slow rather than quick—80 per minute was the quickest rate recorded, and on two occasions the rate fell as low as 48. Nevertheless, his appearance and symptoms as a whole left no doubt as to the diagnosis. Dr. J. G. Priestley, who examined his urine and fæces, reported that Cammidge's reaction was negative, and that the total fat amounted to 26·9 per cent. of the dried fæces, 7·4 per cent. being saponified, and 19·5 per cent. unsaponified fat. The patient improved conspicuously under treatment. The eyes became less prominent and the tremor diminished, and the sugar in his urine was reduced to a trace. However, he was restless, and would not consent to stay after May 23rd. When he was next seen, on June 2nd, his thyroid was distinctly enlarged and the pulse-rate was 100.

On July 10th the patient was readmitted and stayed until July 22nd. The eye symptoms were as before; the enlargement of the thyroid was slight; his pulse-rate was 92 on

* Lectures I. and II. were published in THE LANCET of Feb. 24th (p. 483) and March 2nd (p. 557), 1912, respectively.

[1] Goitre Exophtalmique et Glycosurie, Paris, 1869.
[2] St. Bartholomew's Hospital Reports, 1874, vol. x., p. 255.
[3] THE LANCET, 1875, vol. i., p. 371.
[4] THE LANCET, 1878, vol. i., p. 307.
[5] Deutsche medizinische Wochenschrift, 1897, Band xxxiii., p. 309.

admission, and a systolic murmur was audible over the base of the heart. The restlessness and excitability had become aggravated. The urine contained from 0·36 to 0·55 per cent. sugar, and from 6·7 to 11·45 grammes were excreted in the 24 hours. The largest quantity of urine passed was 3180 c.c. in 24 hours. His weight had decreased by a further 4 lb. On two occasions the thyroid was exposed to the X rays; but the excretion of sugar was not influenced by this treatment. At this time Dr. Cammidge was good enough to examine the urine and fæces, and reported that the urine gave only a very doubtful pancreatic reaction by the distillation method, but none by the fermentation method. Although the total fat in the fæces was not very high, he found that the unsaponified exceeded the saponified fats, and this fact, coupled with incomplete casein digestion, he regarded as indicating the presence of a pancreatic lesion. The man was again seen on Sept. 6th, when the exophthalmos was less pronounced. A specimen of urine contained 0·25 per cent. glucose. Since that date we have unfortunately lost touch with him.

The most remarkable feature in this case was the variation of the pulse-rate and the bradycardia which was a prominent feature during his first stay in the hospital.

In most cases of diabetes occurring in association with exophthalmic goitre there is good reason to believe that the onset of the two groups of symptoms is more or less simultaneous, or that the symptoms of Graves's disease have preceded the glycosuria. However, we must not lose sight of the possibility of the development of the thyroid symptoms in patients who are already diabetic, a sequence of which a striking example is mentioned by Grube,[6] that of a woman who developed exophthalmic goitre after hearing that her urine contained 9 per cent. sugar. Moreover, accidental concurrence is also possible in connexion with this as with other conditions, but the evidence of the association of glycosuria with lesions of any special organ is not based upon their occasional concurrence alone, but rather upon the evidences of interdependence of the symptoms in individual cases. The diabetes of hyperthyroidism runs no exceptional course, the output of sugar may be large, and all the ordinary associated symptoms, culminating in death in coma, may be present.

I must not omit to mention that some observers have called attention to families in which Graves's disease has been present in some members and diabetes in others, and I myself have seen a young woman suffering from the severest form of diabetes whose mother had exophthalmic goitre.

Glycosuria Induced by Thyroid Administration.

We can hardly doubt that the excess of thyroid secretion is the exciting cause of the glycosuria in the disease under discussion, for lowering of glucose tolerance and spontaneous excretion of sugar may be induced by the medicinal use of thyroid extract. This fact has not received so much attention as it deserves, although it was noticed by Dale James,[7] Béclère,[8] and others, as long ago as 1894, and it affords an additional reason for caution in the use of that drug. I have recently seen sugar appear in the urine of a youth aged 18, who probably had no thyroid inadequacy, after he had taken 5 grains of thyroid extract daily for about six weeks. When the drug was stopped the glycosuria promptly ceased.

My own experience leads me to think that, as might be expected, this result is more readily brought about in cases in which thyroid secretion is normal, and the extract given acts as an overdose, than in those in which it is deficient or absent. Thus, in another case, in which the drug was given to reduce obesity, sugar appeared in the urine to the amount of 4 per cent. at the end of a week, when only 4 grammes had been taken in all, but quickly disappeared after the treatment was stopped.

However, patients with myxœdema may acquire glycosuria in this way. My house physician, Mr. Alan Moore, was good enough to examine the urine of 11 myxœdematous patients who had been under thyroid treatment in the out-patient department at St. Bartholomew's Hospital for years. No less than four were found to have glycosuria, and in three cases the excretion of sugar ceased within a week after the thyroid was stopped.

Ewald[9] has recorded a remarkable case of a myxœdematous woman who acquired glycosuria on three successive occasions after the administration of thyroid extract in very moderate doses, such as one 5-grain tablet a day, as much as 5 or 6 per cent. of sugar being present in her urine. In the intervals the urine was sugar-free.

In Notthaft's[10] most remarkable case, that of a man, aged 43, who, on his own initiative and in order to reduce his weight, took about 1000 5-grain tablets of thyroid extract in the course of five weeks, glycosuria was induced; but in association with it there appeared the other symptoms of Graves's disease—tachycardia, exophthalmos with von Graefe's sign, tremor, and even some enlargement of the thyroid gland. He passed over 3000 c.c. of urine in the day, which contained sugar to the amount of 1 per cent. Apart from any limitation of carbohydrates, the sugar disappeared and thirst ceased after the drug had been discontinued for ten days. Tremor ceased after four weeks, but the eye phenomena and swelling of the thyroid persisted for about six months.

It has been thought that in some instances administration of thyroid has given rise to actual diabetes, and von Noorden suggests that in such cases a pre-existent diabetic tendency has been awakened into activity by the drug. Friedrich von Müller[11] has described the onset of a rapidly fatal diabetes in a sufferer from exophthalmic goitre who was treated with thyroid extract, but here the treatment may have merely precipitated an event to which the original disease was itself capable of giving rise. If spontaneous hyperthyroidism can induce diabetes one sees no reason why continuous thyroid treatment should not do the same.

How the Thyroid Gland Influences Carbohydrate Metabolism.

It is a question of much theoretical interest whether or no the thyroid gland produces its effect upon carbohydrate metabolism through the pancreas. Opie inclines to the view that the glycosuria of Graves's disease is due to an associated pancreatic lesion, and such lesions have been found in some fatal cases. Thus, R. C. Cecil[12] quotes a case in which the pancreas was small and atrophic. The fact that thyroid administration may produce glycosuria can only be reconciled with such an explanation if we suppose that the hyperthyroidism produces the lesions of the pancreas, and some cases recorded by Dr. George Murray[13] strongly suggest that even when exophthalmic goitre is recovered from it may leave behind it irreparable damage to the pancreas.

Falta[14] suggests, on the other hand, that the excess of thyroid secretion exercises a check upon the function of the pancreas, either directly or by stimulating the activity of the chromaffin system. In favour of the latter explanation he refers to the observations of Kraus and Friedenthal and of A. Fränkel, who detected an increase of adrenalin in the blood of patients with Graves's disease, but emphasises the necessity of caution in such speculations. Falta has also extended the observations of A. Schmidt and Salomon,[15] on the occurrence of fatty stools in exophthalmic goitre. Their occurrence suggests a coincident restriction of the external secretion of the pancreas, and so favours Opie's view, but both Falta and Salomon found no such excess of neutral fats as is characteristic of pancreatic steatorrhœa, and the fat absorption was not markedly aided by administration of pancreon. Falta refers to certain observations which suggest that the internal, as well as the external, secretion of the pancreas is concerned in fat absorption. However, as he pointed out, serious difficulties are encountered when we attempt to explain the fatty stools of exophthalmic goitre by invoking a restraining influence exerted upon the internal secretion of the pancreas, not the least of which arises from the absence of fatty stools in most of the severe cases of ordinary diabetes.

If hyperthyroidism tend to induce glycosuria by exercising a restraining influence upon the functions of the pancreas, rather than by causing lesions of that gland, we should expect that withdrawal of the normal supply would have an opposite effect, and that the pancreas, relieved of its wonted restraint, would be unusually active in relation to carbohydrate metabolism. In other words, that an individual who formed no thyroid secretion would be able to deal with

[6] Zeitschrift für klinische Medizin, 1895, Band xxvii., p. 465.
[7] British Journal of Dermatology, 1894, vol. vi., p. 177.
[8] Gazette Médicale de Paris, 1894, Neuvième Serie, vol. i., p. 499.
[9] Berliner klinische Wochenschrift, 1895, Band xxxii., p. 25.
[10] Centralblatt für innere Medizin, 1898, Band xix., p. 353.
[11] Verhandlungen des XXIII. Congresses für Innere Medizin, 1906, p. 104.
[12] Journal of Experimental Medicine, 1909, vol. ix., p. 266.
[13] The Clinical Journal, 1909, vol. xxxiv., p. 244.
[14] Zeitschrift für klinische Medizin, 1910, Band lxxi., p. 1.
[15] Wiener klinische Wochenschrift, 1908, Band xxi., p. 870.

larger quantities of carbohydrates than a normal person. This appears to be the case, for a number of observers have found that patients with myxœdema exhibit a conspicuously raised glucose tolerance, and can take with impunity far greater amounts of sugar than would inevitably induce glycosuria in an ordinary man. Moreover, when thyroid extract is administered a lowering of glucose tolerance is induced. Thus, in the case of a boy, aged 6, recently under my care, who showed signs of hypothyroidism, but was not a complete cretin, 150 grammes of glucose were required to induce glycosuria, but after a short period of thyroid treatment, 50 grammes sufficed to produce excretion of sugar. Some adult patients with myxœdema seem able to dispose of any dose of glucose which can be given without excreting any of it. A similar elevation of glucose tolerance has been observed in dogs deprived of their thyroid glands, although a transitory glycosuria, perhaps due to emptying of the glycogen reservoirs, may follow the operation.

To sum up, then, it would appear that, whatever the mechanism called into play, excess of thyroid secretion tends to induce glycosuria, whereas hypothyroidism has an opposite effect. However, these effects are by no means constant, and whereas some patients who exhibit the other signs of thyroid excess in a marked degree do not excrete sugar, and may show no lowering of glucose tolerance, in other cases of a less pronounced kind glycosuria is one of the earliest symptoms manifested. The cause of this uncertainty of behaviour is not obvious, but, as we have seen, it is a feature common to most varieties of glycosuria.

Myxœdema with Excretion of Glucose.

On the other hand, we cannot shut our eyes to the existence of certain paradoxical cases, which appear to stand in direct contradiction to what has gone before. In these cases patients who were apparently suffering from myxœdema, or at least from thyroid insufficiency, have excreted sugar, apart from treatment by thyroid extract. The subject has been discussed at some length in a recent paper by Parisot.[16]

In some of the records, which are few in number, it is merely mentioned that a slight glycosuria was observed on one or more occasions. In other cases there has been some hesitation as to the diagnosis, and there have been peculiar features which justify the doubt whether, in spite of marked improvement under thyroid treatment, and in some instances disappearance of the glycosuria under such treatment, the disease from which the patient suffered was really myxœdema, and not rather disease of some ductless gland other than the thyroid, or possibly of more than one such gland. Thus, a case which Sir William Osler described was one of those in which some features of hyper- and some features of hypo-thyroidism were present side by side.[17]

A. Gordon[18] described two little brothers, aged 3 and 4 years respectively, who had pronounced glycosuria and signs of myxœdema, apparently acquired. Under thyroid treatment the symptoms, including the glycosuria, disappeared, but in spite of a relapse which followed an interruption of treatment for three weeks in its earlier stages, there was no return of myxœdema or glycosuria after the thyroid extract was stopped some months later. The length of immunity is not stated, but it would appear necessary to assume a temporary hypothyroidism in these cases.

I am indebted to Miss Heanley for the notes of a case, hitherto unpublished, which resembled Gordon's in this respect. The patient was an unmarried woman, aged 25, who suffered from amenorrhœa of 12 months' standing, and a swelling of the whole body, with headache and hystero-epileptic attacks. She is described as having a red, bloated face, with coarse red whiskers, and a well-developed moustache. Physical examination revealed nothing beyond an enormous increase of subcutaneous tissue. Her hands had become dry and clumsy and she became depressed and stupid, but her speech was never slow nor indistinct. Her urine had a specific gravity of 1040, and contained much sugar. She took thyroid extract in large doses, which in a month were reduced to five grains daily in consequence of signs of hyperthyroidism. Four months later, when the drug was stopped, her general health had greatly improved, her fatness was reduced, and the depression had disappeared. The urine no longer contained sugar. Although she had had no further thyroid treatment since May, 1908, when seen in November, 1911, she had a thin face and thin hands, the hair on her face was much diminished, and she was quite well. The urine was sugar free.

One can hardly class this case as one of myxœdema, and the hirsuties and obesity rather suggest the syndromes associated with tumours of the adrenal cortex and of the pineal gland; but with neither of these latter has glycosuria hitherto been observed. Miss Heanley and the patient were both convinced of the efficacy of the thyroid treatment, and whatever its nature, the case is of great interest as an example of temporary glycosuria associated with symptoms suggestive of a temporary affection of one or more of the glands of internal secretion.

A case recorded by Dr. W. M. Campbell[19] in 1894 was also that of a young woman, and the diagnosis of myxœdema was confirmed by the late Dr. Ord. She improved greatly on thyroid treatment, but the glycosuria persisted and was thought by Dr. Campbell to have been influenced by dieting rather than by thyroid extract.

Granting that glycosuria does occasionally accompany myxœdema, this fact cannot be held to invalidate the mass of evidence which connects that symptom with hyperthyroidism and various explanations of the paradox suggest themselves. For example, the supposed control of the thyroid over the pancreas, and the converse over-activity of the pancreas when this control is removed, will not come into play if the pancreas be itself diseased. Again, it is conceivable that, seeing that removal of the thyroid leads to hypertrophy of the pituitary body, the secretion of the latter gland may contribute to the causation of glycosuria in these cases; and again that the parathyroids may be concerned, for Eppinger, Falta, and Rudinger[20] found that removal of the parathyroids of a dog tends to depress glucose tolerance to a conspicuous degree.

GLYCOSURIA AND THE PITUITARY BODY.

Like the thyroid gland, the pituitary body has a very important influence upon the metabolism of carbohydrates, and in this connexion there is a striking resemblance between the effects of diseases of these structures.

Acromegaly is now believed to represent the syndrome which results from over-activity of the glandular portion of the pituitary, and thus to be the pituitary analogue of exophthalmic goitre. As in exophthalmic goitre, we meet in some cases of acromegaly with lowered glucose tolerance; in others with transitory or intermittent glycosuria; and in yet others, with frank diabetes. Indeed, if we may judge from the relative frequency of such symptoms in acromegaly and gigantism on the one hand, and in Graves's disease on the other, we should incline to regard hyperpituitarism as a more potent disturber of carbohydrate metabolism than hyperthyroidism.

Thus, Borchardt,[21] who collected the records of 176 cases of acromegaly, found that glycosuria had been observed in 63 cases, or no less than 35·32 per cent. In eight other cases lowered glucose tolerance had been noted, but that symptom had obviously been much less frequently looked for, and was only mentioned, as present or absent, in ten cases in all.

In some cases the glycosuria of acromegaly has been little, if at all, influenced by restrictions of diet, whereas in others it was so controlled. It is interesting to note that in the newer literature of pituitary tumours, since 1886, Borchardt found no record of glycosuria apart from acromegalic symptoms.

It is a peculiar feature of acromegaly glycosuria that in some cases the excretion of sugar has ceased completely, for a period, although the patient's diet was by no means poor in carbohydrates. Thus Strümpell[22] carefully watched, over several years, a case in which the urine of 24 hours contained at times as much as 100 to 120 grammes of glucose, and polyuria and thirst were prominent symptoms. During two separate periods, with an interval of four years between them, the sugar disappeared completely in spite of a diet rich in carbohydrates. In yet other instances the glycosuria, after persisting for years, has ceased and has not returned.

[16] Le Progrès Médical, 1910, troisième Série, vol. xxvi., p. 245.
[17] Journal of Nervous and Mental Diseases, 1899, vol. xxvi., p. 65.
[18] American Medicine, 1904, vol. vii., p. 229.
[19] Liverpool Medico-Chirurgical Journal, 1894, vol. xiv., p. 452.
[20] Zeitschrift für klinische Medizin, 1909, Band lxvii., p. 380.
[21] Ibid., 1908, Band lxvi., p. 332.
[22] Deutsche Zeitschrift für Nervenheilkunde, 1897, Band xi., p. 50.

Borchardt quotes such a case from Lichtheim's Klinik, and Pineles refers to a similar case observed by Finzi.[23]

One is tempted to connect such occurrences with variations in the activity of secretion of the pituitary gland, and such lasting cessation of glycosuria may mark the point of time when, as Cushing holds, the hypersecretion, which causes the acromegalic changes, gives place to hyposecretion; just as in some instances myxœdema has developed as a sequel of exophthalmic goitre.

The group of symptoms, commonly spoken of as "Fröhlich's syndrome" or "dystrophia adiposo-genitalis," is believed to result from hypopituitarism. The group includes excessive deposition of fat, hypoplasia of the genital organs, and disappearance of axillary and pubic hair, associated with symptoms of tumour of the pituitary gland, somnolence, headache, and bitemporal hemianopia. In association with this condition glycosuria is almost unknown, although thirst and polyuria are common. Von Frankl-Hochwart,[24] in his monograph upon the subject, mentions its occurrence in only one case, and, as in myxœdema, a conspicuous rise in glucose tolerance has been observed.[25] This is confirmed by the most important studies of Goetsch, Cushing, and Jacobson[26] on the relation of the pituitary body to carbohydrate tolerance. These observers show, from their experimental investigations upon animals, that the posterior lobe of the pituitary is that which controls carbohydrate metabolism, and that its secretion is discharged into the cavity of the third ventricle, and thence passes into the subarachnoid spaces and enters the blood stream by way of the dural sinuses.

Their experiments demonstrate clearly that excess of the secretion of the posterior lobe entering the circulation has a conspicuous effect in lowering glucose tolerance, whereas deficiency of such secretion has an equally conspicuous effect in raising the limit of tolerance. The authors quoted state, further, that in all but two of the ten cases of acromegaly which they had studied the patients had begun to show evidences of hypoplasia of the posterior lobe, such as the laying on of fat, subnormal temperature, and, in some instances, remarkably high glucose tolerance. They suggest that, when such symptoms develop, administration of glandular extract is indicated, and that it may be possible to determine the correct dosage by ascertaining the quantity of glucose required to induce glycosuria, and by giving such doses of the glandular extract as reduce the glucose tolerance to the normal limit.

As regards the production of glycosuria by administration of pituitary extract, no such bulk of evidence is forthcoming as of its production by thyroid preparations. This is not to be wondered at, seeing that pituitary extract has been so much less widely used, and in view of Cushing's results, such an effect is only to be looked for from extract of the posterior lobe. Borchardt caused excretion of sugar in rabbits by injection of hypophysis extract, but in dogs the effect was very uncertain. I know of no case in which glycosuria has been observed in man to result from pituitary treatment.

In some cases of acromegaly, as in some cases of exophthalmic goitre, structural lesions of the pancreas have been met with. Thus Cecil[27] records a case in which sclerosis and hyaline degeneration of the islands of Langerhans were found, and Hansemann[28] has observed sclerosis of the pancreas in a case of acromegaly. However, Borchardt states that in most cases the pancreas has been found to be normal.

It seems probable that whatever be the mechanism by which hyperthyroidism induces lowered glucose tolerance and glycosuria, a similar mechanism may be invoked to explain the same phenomena when they accompany hyperpituitarism.

ADRENAL GLYCOSURIA.

When we pass on to the consideration of the part played by the adrenal glands in the causation of glycosuria, we find ourselves confronted with a still more difficult and complex problem.

There can be no question that adrenalin—the one hormone produced by a ductless gland, of which the chemical composition and nature are accurately known—has a very definite influence upon carbohydrate metabolism. How far that influence is at work in the production of glycosuria and diabetes, as seen in man, is uncertain, but there are indications that it may play a very important part. Thus the observation of André Mayer,[29] which has been confirmed by other investigators, that after the removal of the adrenals in rabbits puncture of the glycosuric centre no longer causes excretion of sugar, suggests that puncture glycosuria, to which I have so often referred, is due to the conveyance of an impulse to the adrenals by way of the splanchnic nerve and a resultant over-secretion of adrenalin.

Adrenalin is the secretion of the medullary or chromaffin tissue of the adrenals, and of the chromaffin tissues in general, of which the adrenal medulla constitutes only the major part. It is probable that the adrenal cortex yields a different internal secretion which has a profound influence upon nutrition and development, and which is responsible for the obesity and hirsuties seen in connexion with adenomatous tumours of that portion of these glands.

There is no evidence which suffices to carry conviction that gross lesions of the adrenals are to be included among the causes of clinical glycosuria. It is true that a very few cases are on record in which diabetes has been associated with adrenal tumours. Such cases have been described by Burghart[30] and by Lépine.[31] Burghart's patient was a woman who suddenly developed thirst and polyuria some three months before her death. Her urine contained as much as 8 to 10 per cent. of sugar, and a large sarcoma of the left adrenal was found post mortem. Lépine's patient, a woman aged 60, who also had a sarcoma of the left adrenal, had hyperglycæmia and glycosuria, and died in coma soon after her admission to hospital. There was a history of loss of flesh for two years, and of excessive thirst for a year and a half before her death.

It would be very rash to conclude on the basis of these cases that there exists a form of diabetes due to disease of the adrenals, for their rarity makes an accidental association highly probable and the evidence of the interdependence of the tumour and the glycosuria is of the slightest. It is at least probable that in Lépine's case the diabetes antedated the malignant growth. Malignant growths originating in the adrenal medulla are not uncommon in children, and I have seen a number of such cases, but in none of them did the urine contain sugar, nor was there a raised pulse tension to suggest an excess of adrenalin in the blood.

In Addison's disease a condition of hypo-adrenalism may be assumed to exist, and glycosuria is therefore not to be expected. It is interesting to note that Porges[32] has shown that the blood of sufferers from this malady is poorer in sugar than normal blood, and he confirms the observation of Eppinger, Falta, and Rudinger[33] that such patients exhibit an abnormally high sugar tolerance. In a case recorded by Dr. Samuel West,[34] in which the adrenals were completely atrophied and the skin was pigmented, there was a severe form of diabetes. Here excess of adrenalin is out of the question, but the case is of special importance as showing that a patient, deprived of his adrenals by disease, may nevertheless be diabetic. Unfortunately, no information is forthcoming as to the condition of the pancreas and other viscera in this case.

As Blum was the first to show, injection of adrenalin in doses of from 1 to 2 milligrammes excites a transient glycosuria, and I have recently seen such glycosuria in a case of asthma, in which such an injection was given for therapeutical purposes. The dose required to induce an excretion of sugar varies in different cases, and in sufferers from different diseases. A number of observations bearing on this subject have been made of recent years, and the results so far obtained are summed up in a recent paper by M. Reichenstein,[35] who is himself a worker in this field, and has studied the effects of injections of adrenalin in cases of Graves's disease, diabetes, a variety of nervous disorders, and during pregnancy.

[23] Bollettino delle Scienze Mediche della Scuola Medica di Bologna, 1897 (original not seen).
[24] Comptes Rendus, XVI. Congrès International de Médecine, Buda-Pesth, 1909. Section de Neuropathologie, p. 89.
[25] Von Noorden: Die Zuckerkrankheit, fifth edition, 1910, p. 48.
[26] Johns Hopkins Bulletin, 1911, vol. xxii., p. 165.
[27] Journal of Experimental Medicine, 1909, vol. xi., p. 278.
[28] Berliner klinische Wochenschrift, 1897, Band xxxiv., p. 417.
[29] Comptes Rendus de la Société de Biologie, 1906, vol. lx., p. 1123.
[30] Verhandlungen des Vereins für Innere Medizin, 1897, Band xvi., p. 455.
[31] Revue de Médecine, 1897, vol. xxvi., p. 539.
[32] Zeitschrift für klinische Medizin, 1910, Band lxix., p. 341.
[33] Ibid., 1908, Band lxvi., p. 1; 1909, Band lxvii., p. 380.
[34] Pathological Society Transactions, 1890, vol. xli., p. 271.
[35] Wiener klinische Wochenschrift, 1911, Band xxiv., p. 862.

It is evident that, given a disease which induces an excessive supply of adrenalin to the blood, hyperglycæmia and glycosuria are likely to be among its symptoms, and the evidence forthcoming suggests that adrenalin may play the chief part in regulating the glucose contents of the blood. In this connexion it is worthy of note that Ernst Neubauer [36] has detected hyperglycæmia in patients with chronic renal disease and high pulse tension, and that other observers have demonstrated hypertrophy of the chromaffin tissues and hyperadrenalism in such cases. It is possible at least that some of the cases of mild diabetes in later life may have their origin in a more pronounced degree of adrenalin excess.

GLYCOSURIA IN PREGNANCY.

A place must undoubtedly be assigned to pregnancy among the causes of glycosuria, but in approaching the consideration of this subject it must be borne in mind that lactosuria of slight degree is not uncommon during the last weeks of gestation, and that women suffering from diabetes occasionally become pregnant. Therefore it is necessary to make sure, in any given case, that the sugar excreted is not lactose, and also, what is more difficult to prove, that the glycosuria has only developed after the commencement of pregnancy.

Far more common than a spontaneous excretion of sugar is a lowering of glucose tolerance, and, as von Jaksch and his assistant, Lanz,[37] pointed out, in 1895, many pregnant women exhibit glycosuria e saccharo. This observation has since been fully confirmed. Bar[38] estimated that whereas in normal adults the limit of glucose tolerance is between 9 and 13 grammes per kilogramme of body weight, in pregnant women it is lowered to 6 to 8 grammes per kilogramme. Reichenstein, to whose work on adrenalin glycosuria I recently referred, found that the ease with which adrenalin caused glycosuria varied with the glucose tolerance.

The frequency of spontaneous glycosuria in pregnancy is very differently estimated, and the figures given probably depend largely upon the delicacy of the tests employed. As the excretion of sugar may be very transient, it is liable to be overlooked unless a careful watch is kept for it throughout the whole period of gestation. In his valuable paper on the subject, Whitridge Williams[39] quotes a case in which glycosuria, with excretion of 0·5 to 1 per cent. of glucose, began three months before labour and persisted for three weeks. Reichenstein[40] states that of 93 pregnant women, 11 (11·8 per cent.) excreted glucose to the amount of 0·2–0·7 per cent., usually in the eighth to tenth months. Of 65 patients, 27·6 per cent. excreted from 2 to 7 grammes after a dose of 100 grammes of glucose.

In a number of cases glycosuria which has begun during pregnancy has ceased after delivery, and in some such cases the quantity of sugar has been somewhat large, and thirst and polyuria have been prominent symptoms. Thus, in a case described by Durieux[41] thirst was complained of in the seventh month, and sugar was then first found at the weekly examination of the urine. The output was as much as 210 grammes in 24 hours, but after the diet was restricted it fell to 50 grammes, and after delivery it disappeared entirely. Cases of like kind were described by Bennewitz,[42] whose paper I have not seen, as long ago as the year 1826, and are referred to by Matthews Duncan in his classical paper which first awakened wide interest in puerperal diabetes, and whose gloomy conclusions as to the prognosis of diabetes in pregnant women have ever since dominated professional opinion on the matter.

Still more interesting are the cases in which diabetic symptoms have recurred in successive pregnancies, although absent in the intervals between them. Such cases show clearly that during pregnancy conditions exist which are favourable to the development of glycosuria, and which cease with its termination. This is in full accord with the observations on lowered glucose tolerance.

However, it cannot safely be asserted that a glycosuria which ceases after delivery is of necessity a merely temporary one, as is shown by a case for permission to quote which I am indebted to [illegible] Herringham. Bartholomew's [illegible] The daily output o[illegible] After her delivery o[illegible] but a glucose test some[illegible] was not fully restored. [illegible] readmitted, under Dr. [illegible] 60 grammes of glucose in [illegible] disappeared with a restricted [illegible]

Again, there are cases on r[illegible] diabetes has apparently commenced during pregnancy and has continued after delivery. In some of these coma has occurred during the puerperium. I cannot quote the record of any case in which glycosuria definitely shown to have first appeared during pregnancy, and in which after her delivery the patient lived on as a confirmed diabetic.

Several views have been put forward as to the [illegible] the glycosuria of pregnancy. Some have held with Williams that it is due to a toxæmia. Others, among whom Commandeur and Porcher,[44] connect it with abnormal metabolism associated with lactation, for glucose is a constituent of the disaccharid lactose.

The most recent theory, advanced by Reichenstein,[45] Cushing,[46] and others, ascribes the glycosuria of pregnancy to the influence of that state upon the glands of internal secretion, such as the thyroid and the pituitary body. In its clinical aspects this variety of glycosuria certainly bears a striking resemblance to those connected with diseases of the ductless glands, and it is on that account that it has been spoken of in this lecture. Enlargement of the thyroid gland during pregnancy is a well-known event, and changes in the pituitary have been shown by Erdheim and Stümme[47] to be common in that state. Such an explanation will account for the so frequent cessation of the glycosuria after delivery, and is at least highly plausible.

Moreover, it gains much support from a most interesting case which Marek[48] has very recently placed on record. The patient, a primipara, aged 26, developed the characteristic symptoms of acromegaly during the eighth month of pregnancy. Her hands and feet enlarged, her skin, nose, and lips were thickened, and enlargement of the lower jaw prevented her teeth from meeting. She became very somnolent. Sugar was present in her urine. After delivery the glycosuria ceased in about two months, and by that time all the signs of acromegaly had also disappeared. It can hardly be doubted that the glycosuria and attendant symptoms were alike due to hyperpituitarism developed in association with the pregnancy.

One naturally associates with the glycosuria of pregnancy that which has been observed in association with diseases of the female generative organs. Imlach[49] described a case in which removal of the uterine appendages, on account of pyosalpinx with ovarian adhesions, was followed within a week by cessation of glycosuria which had been detected five months before the operation and which was accompanied by thirst and polyuria. In cases recorded by Croom,[50] Beyea,[51] and Henkel[52] removal of ovarian tumours or uterine myomata has in like manner been followed in the course of a few months, and apart from restriction of diet, by disappearance of sugar from the urine. In Beyea's case the glucose amounted to as much as 7 per cent. It will be noticed that in most cases the cessation of the glycosuria has been much more gradual than after childbirth.

GLYCOSURIA WITHOUT HYPERGLYCÆMIA.

The last variety of glycosuria of which I propose to speak differs from all those which we have hitherto considered in one essential respect—namely, that the excretion of sugar in the urine is not dependent upon any excess in the blood.

In my first lecture I referred to the glycosuria which follows the injection of phloridzin, and it is the generally

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[illegible] admitted to St. [illegible] with glycosuria. [illegible] 12 grammes. [illegible] disappeared, [illegible] her tolerance [illegible] patient was [illegible] has since [illegible] persistent [illegible] ncy and [illegible] eath in [illegible] ver, I [illegible] e was [illegible] uring [illegible] has [illegible] of [illegible]

[36] Biochemische Zeitschrift, 1910, Band xxv., p. 284.
[37] Wiener Medicinische Presse, 1895, Band xxxvi., p. 1857.
[38] Leçons de la Pathologie Obstétricale, 1907, vol. ii., p. 794.
[39] American Journal of Medical Sciences, 1909, vol. cxxxvii., p. 1.
[40] Wiener Klinische Wochenschrift, 1909, Band xxii., p. 1445.
[41] Bulletin de la Société Obstétrique de Paris, 1905, vol. viii., p. 141.
[42] Osann's 12ter Jahresbericht des Königlichen Poliklinischen Instituts der Universität zu Berlin, 1826, p. 23 (original not seen).
[43] Bulletin de la Société Obstétrique de Paris, 1898, vol. i., p. 300.
[44] Archives Générales de Médecine, 1904, vol. cxciv., pp. 2241, 2305.
[45] Wiener klinische Wochenschrift, 1909, Band xxii., 1445.
[46] Johns Hopkins Bulletin, 1911, vol. xxii., p. 165.
[47] Beiträge zur pathologischen Anatomie und zur allgemeinen Pathologie, 1909, Band xlvi., p. 1
[48] Zeitschrift für Gynäkologie, 1911, Band xxxv., p. 1612.
[49] Brit. Med. Jour., 1885, vol. ii., p. 61.
[50] British Gynæcological Journal, 1895, 1896, vol. xi., p. 476.
[51] American Journal of Obstetrics, 1900, vol. xli., p. 145.
[52] Deutsche medizinische Wochenschrift, 1909, Band xxxv., p. 2003.

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Undoubtedly, there ...refully observed and ...slight glycosuria in ... among whom Lüthje,[53] ...tinually present in t... ...little or no effect ...eiland[56] may be specially ...which the quantit... may be selected as an example. ...be rather diminis... Cases of th... ...ed 37, had for years excreted small ...described by ... 0·2 per cent., in urine with an ...Bönniger,[54] ...mentioned ...vity of 1020. The sugar, which was first ...The pati... ...amination for life insurance and was proved ...quantiti... ...varied but little in amount. The daily output ...averag... ...luenced by diet, was neither increased by a diet ...deter... ...to carbohydrates, nor diminished by restriction of starch. ...so large a dose of glucose as 100 grammes had no effect ...on the output. The blood serum was found to contain 0·097 per cent. of glucose, whereas 0·1 per cent., or rather less, may be taken as the normal content.

In Weiland's three cases the average quantity of sugar in the urine of 24 hours was 7–10 grammes, 3 grammes, and 10–20 grammes respectively. In no case was the sugar of the blood above the normal amount.

I have myself had opportunities of observing, for several years past, the case of a lady between 30 and 40 years of age who was found to be excreting sugar in 1907, but who has at no time exhibited any symptoms of diabetes. Some analyses made in India in 1907 and 1908 gave a daily output of about 1 gramme of glucose. The patient was placed upon a diabetic diet, but did not bear it well. On such a diet the output of sugar was, if anything, greater than when no restrictions were imposed. Soon after I first saw her, in 1909, she stayed in a nursing home for a time, and during that period the accompanying analyses were made by Dr. W. H. Hurtley, who employed Ivor Bang's method for the elimination of sugar.

Date.	Carbohydrates in diet (white bread).	Total urine in 24 hours.	Optical activity.	Percentage of sugar (Bang).	Total sugar in 24 hours.	Iron reaction and acetone.
1909	Grammes.	C.c.			Grammes.	
June 8th.	150	905	+ 0·06	0·27	2·4	—
,, 9th.	180	925	+ 0·24	0·53	4·9	—
,, 10th.	140	960	+ 0·15	0·48	4·6	—
,, 11th.	0	1260	—	0·368	4·6	—
,, 12th.	0	1075	0	0·38	4·1	Iron reaction.*
,, 13th.	180	1140	+ 0·4	0·469	5·3	Ditto, faint.
,, 14th.	180	450	+ 0·22	1·086	4·9	—
,, 15th.	180	500	– slight	0·702	3·5	—
,, 16th.†	180	805	– 0·12	0·308	2·5	—
,, 17th.	180	850	+ slight	0·41	3·5	—
,, 18th.	180	765	+ slight	0·342	2·6	—
,, 19th.	180	1100	– 0·16	0·218	2·4	—
,, 20th.	140	1075	– 0·23	0·233	2·5	—
,, 21st.	0	1245	– 0·125	0·238	3·0	Iron reaction, acetone.
,, 22nd.	0	890	– 0·22	0·23	2·0	Ditto.
Oct. 9th, 1911.	Ordinary diet, avoiding sugar.	1180	0	0·37	4·36	—

* A slight malarial attack on this day.
† A dose of 10 grammes of glucose was given on this day.

[53] Münchener medizinische Wochenschrift, 1901, Band xlviii., p. 1471.
[54] Deutsche medizinische Wochenschrift, 1908, Band xxxiv., p. 780.
[55] Ibid., 1910, Band xxxvi., p. 1031.
[56] Deutsches Archiv für klinische Medizin 1911, Band cii., p. 167.

It will be seen that the output of sugar is comparable to that in Bönniger's and Weiland's cases, and that restriction of diet, on the one hand, and the administration of a small dose (10 grammes) of glucose on the other, had no obvious effect upon the glycosuria. The great discrepancy, here seen, between optical activity and reducing power was also noticed by Weiland in one of his cases, and is not uncommon when very small quantities of glucose are present in urine. In this case glucose was definitely proved to be present, but even when the urine was lævo-rotatory lævulose was not detected, and the lævo-rotation was not destroyed by fermentation with yeast, but was actually increased owing to removal of glucose.

The patient was advised to avoid sugar and any great excess of starchy foods, but otherwise to take an ordinary diet. Her health remains good, and the last analysis on the table, made two years and four months later than those of the 1909 series, shows that in that interval there had been no aggravation of the glycosuria. Unfortunately, no estimation of the sugar in the blood has been made in this instance.

As long ago as in 1896 G. Klemperer[57] suggested that there probably exists a variety of glycosuria met with in clinical practice which is due to failure on the part of the kidneys to retain the normal sugar content in the blood. Such glycosuria would be of like nature to that caused by the administration of phloridzin. The cases which I have quoted have been regarded as examples of such renal glycosuria. No other explanation can be offered of an excretion of sugar which is not influenced by changes in the amount of carbohydrate in the diet and is not dependent upon any excess of sugar in the blood.

It would appear that in these cases the mechanism for dealing with carbohydrate is intact, nor can they be explained by deficient destruction, or excessive production, of sugar in the organism. However, it will be prudent to adopt an expectant attitude as to their explanation until further observations have extended our knowledge of this variety of glycosuria and until longer periods of watching have shown what is the ultimate outcome of such cases.

It is not suggested that the kidneys are the seats of structural disease, but rather of a functional disorder which may possibly be due to the presence in the blood of some endogenous or enterogenous toxin which acts in the same way as phloridzin does.

CONCLUSIONS.

And now the time at my disposal is almost exhausted, and I must endeavour to gather up the threads of my discourse and discuss very briefly the bearings of the matters dealt with upon the nature and treatment of diabetes.

In the course of these lectures I have called your attention to many different morbid conditions which bring about disturbances of the metabolism of carbohydrates and to the fact that such disturbances manifest themselves in several different ways: now by a lowering of glucose tolerance without actual excretion of sugar in the urine; now by a spontaneous excretion of sugar in smaller or larger amount during limited periods of days, weeks, or months; and now by a persistent glycosuria, accompanied in its higher grades by the associated symptoms which go to make up the clinical picture of diabetes. Moreover, we have seen how disturbances of these several grades may be induced in different cases by one and the same cause, or in the same case at different times.

The effect of this is to obliterate in one's mind the conception of diabetes as a sharply defined disease, and to present the malady as merely the maximal phase of a series, rising by gradual steps from the normal of metabolism, just as myxœdema is the culminating point of the almost insensible grades of hypothyroidism. Between the sufferer from grave diabetes and the potential glycosuric there is a striking contrast, but the gulf which separates them is bridged over by intermediate cases of all degrees of severity. If so, it follows that, with the possible exception of the so-called renal glycosuria, there is no such thing as non-diabetic glycosuria, although there are many varieties which lack the sinister import which we connect with the name of diabetes.

The differences are, I believe, rather of degree than of kind. In saying this I do not wish to imply that a transient glycosuria is necessarily of grave import, but rather that diabetes is not of necessity a fatal malady.

[57] Verhandlungen des Vereins für innere Medizin, 1896, Band xvi., p. 67.

We are beginning to realise that many organs take part in the regulation of carbohydrate metabolism, and that, if I may be allowed to change the metaphor previously employed, the displacement of one prop may endanger the equilibrium of the whole fabric. For it seems to me that we are justified in regarding the normal metabolic level as maintained by the balance of a number of mutually controlling forces.

In some instances the lesion of one of the supports of the fabric is capable of repair, and with its restitution the disturbance ceases and the normal condition is restored. In other instances the damage is beyond repair, and in time brings down the whole structure. We may imagine that in some individuals, as the result of inborn peculiarities, the equilibrium is less stable than in the majority, is upset by more trifling causes, and when upset is less easily restored. These are the people who inherit or possess the diabetic tendency.

Even when one of the props is removed the structure, although weakened, may still stand erect, and hence perhaps the uncertain incidence of glycosuria, even when the causes which tend to induce it are at work.

If such a conception in any way represents the truth it is clearly our business, in any case with which we meet, to seek to find out where the primary weakness lies, and to attempt its repair. In theory this is well enough; it is in its practical application that the difficulty is encountered.

Whilst it is true that in some cases of diabetes the nervous system is evidently at fault, and that in others the thyroid, the pituitary, or the pancreas is the seat of disease, in the great majority of cases which we encounter in practice we can find no indications of the underlying lesion upon which the metabolic derangement depends. The various tests of pancreatic efficiency give uncertain or negative replies; no ductless gland is evidently the seat of disease; no intestinal disturbance points to an origin in the alimentary tract, and no cardio-vascular changes help us to class the case. There is, to all appearance, a sheer, wanton, metabolic insanity. Nevertheless, we can hardly doubt that in such cases there is an underlying morbid cause at work, if only we could find it out, and that if we follow up minutely every clue and every deviation from the normal we shall surely see light in time. I for one do not believe that the chemical processes in the body go wrong of themselves.

Of course, it by no means follows that the detection of the underlying cause in any given case of diabetes will enable us to cure the patient. It is highly probable that in most instances the primary lesion is not amenable to treatment, either medical or surgical. Nor is it to be expected that any one plan will prove beneficial in all cases; the multiplicity of causes of the malady excludes any such hope. But that in the future the range of efficient control will be greatly extended I firmly believe, and I look forward to a time when the outlook of some diabetic patients at least will be far less hopeless than it is at present.

The efficacy of restriction of diet, which has ameliorated the lot and prolonged the lives of hosts of sufferers from diabetes, although it is essentially a symptomatic therapy, is due to the fact that it is the metabolic derangement which proves fatal to most such patients. Yet there is a growing dissatisfaction with the limitations of such methods, which can only postpone, and cannot avert, the fatal ending.

Only when we have learned more of what lies behind the diabetic syndrome can we hope to attain to better therapeutic methods. Then will our present dietetic treatment be relegated to its true position as a valuable means of holding in check the metabolic error and minimising its evil effects, whilst our main efforts are directed to the repair of the underlying lesions, so far as they admit of repair.

INTERNATIONAL EUGENIC CONGRESS.—As already announced an International Congress on Eugenics will be held at the University of London from July 24th to 30th, under the presidency of Major Leonard Darwin. An exhibition of charts and objects bearing on human heredity will be held in connexion with the Congress, and the secretary of the exhibition, 6, York-buildings, Adelphi, London, W.C., requests the loan of any objects relative to the subject.

ON

MALIGNANT DISEASE OF THE TESTICLE, AND THE OPERATION FOR REMOVAL OF THE ILIO-LUMBAR LYMPH-GLANDS WHEN SECONDARILY AFFECTED,

OR AS A PRECAUTIONARY MEASURE AT THE TIME OF EXCISION OF THE ORGAN PRIMARILY DISEASED.

BY SIR HENRY MORRIS, BART., M.A., M.B. LOND., F.R.C.S. ENG.

IN an interesting lecture on "An Improved Method of Removing the Testicle and Spermatic Cord for Malignant Disease," by Mr. J. Bland-Sutton, published in THE LANCET of Nov. 13th, 1909, reference is made to a case of mine which Mr. A. G. R. Foulerton had included in his well-known paper on "Chondrifying Carcinoma," published in the fifth volume of the Archives of the Middlesex Hospital (1905). Foulerton's account gives particulars of my case down to 1896. After reading Mr. Bland-Sutton's lecture I was induced to set in order my various notes and the several letters and telegrams I had at different times received concerning this patient, and these bring the complete history of the case down to the date of his death in 1904.

It so happened that in December, 1910, another patient, whose history is also one of long duration, came under my care; and this case caused me to make malignant disease of the testis the subject of one of my clinical lectures at the Middlesex Hospital in 1911. Other calls upon my time have prevented me hitherto from publishing this clinical lecture as I intended to do; but I am now moved to record the notes of the cases by the appearance in the columns of the last three successive issues of THE LANCET of (1) Mr. H Morriston Davies's article, (2) Sir Alfred Pearce Gould's letter, and (3) the letter and illustration of Mr. Bland-Sutton.

The first case which I shall describe is quite an extraordinary one. It is altogether exceptional, in its duration, course, complications, and the manner of the patient's death; and the operation performed for the removal of the secondarily involved abdominal lymph gland was spoken of by the late Mr. T. Nunn as the most extensive and severe operation he had ever witnessed. The histological picture presented by the sections of the abdominal mass removed from my patient accords precisely with that yielded by the lymph gland removed from the anterior surface of the inferior vena cava in Mr. Bland-Sutton's case.

CASE 1. *Clinical history.*—Captain ——, aged 28, married, was admitted at the request of the late Mr. Thomas Nunn under my care into the Middlesex Hospital on March 25th, 1895, on account of a large tumour in the left side of the abdomen. He had had his left testis removed in 1893 in India for what was described as an adeno-sarcomatous tumour. Up to that time his health had been good; but since, he had never been really well and had been frequently under treatment for neurasthenia and dyspeptic troubles, obstinate constipation, and twitchings and tinglings in his hands and feet. One month before his admission, it was stated, he had been under Mr. (now Sir) Victor Horsley, and it was then, it seems, that the abdominal tumour was first detected. It appears to have been regarded as an enlarged spleen, and was situated "higher up and further out" than at the time of admission to the Middlesex Hospital.

When first seen by me the patient's abdomen was not distended, but on palpation a large mass was felt below the costal margin on the left side. This mass extended nearly to the middle line, outwards under the tenth costal cartilage, and downwards to a line drawn horizontally on the level of the umbilicus. The tumour moved downwards slightly on deep inspiration. There was tenderness on deep pressure over the swelling and the percussion note over it was resonant. Splenic dulness was normal.

The operation.—An operation having been decided on, an incision was made (March 29th, 1895) through the abdominal wall along the median line from the ensiform cartilage to the umbilicus. As the growth was found to be situated behind the peritoneum the patient was turned upon his right

side, and a long oblique incision parallel to the last rib was made in and prolonged forwards and downwards from the left lumbar region. The tumour was in front of the kidney and was spread over the side and front of the vertebral column. With the fingers of one hand in the peritoneal cavity, and those of the other hand passed through the lumbar wound the mass could be made to move readily in a lateral direction. It was punctured posteriorly, but proved to be solid on this aspect. Complete enucleation from behind could not be effected, so the anterior incision in the abdominal wall was connected with another which transversely divided the left rectus muscle. An assistant then pressed forward the tumour with his fingers in the lumbar wound, the overlying peritoneum on the front of the tumour was divided, and together with some adherent small intestine was detached; and in this way the anterior surface of the tumour mass was exposed. A cyst, the size of an orange, presented itself; sponges were packed around this, and from the cyst, which was ruptured in the steps of the enucleation, turbid fluid escaped. When the separation was completed the tumour was extracted through the lumbar incision. After the main mass had been extracted, two smaller growths were detected and removed. A considerable length of the aorta was exposed. After irrigating with hot water, the wounds were closed. The patient made a satisfactory recovery, and was discharged on April 19th, just three weeks after the operation.

Naked eye appearances of the growth.—The growth removed consisted of three masses; the largest was roughly oval in shape, measuring 4 by 2½ inches, and was 2 inches in thickness. The two smaller masses were rounded, and each was about the size of a small orange. Their outer surfaces were smooth but irregular, the irregularity being caused by numerous small cysts. In the large mass there was an empty irregular cyst, 1 inch by 1½ inches in diameter, with a smooth inner lining to its walls. On section each mass was seen to have a definite fibrous-looking capsule and to contain numerous smaller cysts, varying in size from a pea to an olive. Some of the cysts contained clear fluid, but the greater number held a yellowish-brown gelatinous substance, on removing which other smaller cysts were seen projecting from the inner walls. The tissue between the cysts varied in amount in different places and had a fleshy appearance.

Microscopical appearances.—Microscopically the cystic spaces were lined by columnar epithelium, but from some of the larger spaces the epithelial lining had entirely disappeared. The homogeneous material which filled the spaces stained very imperfectly. The tissues between the spaces consisted of a very cellular fibro-cellular stroma in which were seen spindle cells, round cells, and cells with large oval nuclei. Mr. John Murray paid great attention at the time to the microscopical examination, and had kept by him sections which he was able to produce on the occasion of my clinical lecture last year. Mr. Foulerton included this case in his account of columnar-celled carcinoma of the testicle, and remarked that although the formation of cartilage was not observed, there was present the mucoid or myxomatous change in the fibrous stroma which is a stage preliminary to the development of cartilage.

Subsequent history.—On July 10th, 1895, Captain —— returned complaining of constipation, and stating that without taking medicine he could get no action whatever of the bowels for several successive days. He was readmitted and was ordered a senna draught and a little blue pill and colocynth. He remained three days in hospital, during which his bowels acted regularly and freely every day. He returned to India and took up his duties as a soldier, but in 1897 he was again back in England, invalided home on account of chronic constipation and abdominal pains. He was in a very neurotic state. On May 30th, 1897, he entered a nursing home and I opened his abdomen and separated numerous adhesions between different coils of intestine, and between the small intestine and the parietal peritoneum, as well as between the omentum and parietes in front. The omentum was dragging on the transverse colon, pulling it downwards. The patient made an easy recovery, except for a small sinus in the line of the scar, which healed at once after a deep suture escaped on July 15th, 1897. He again returned to India and resumed his duties. I had seen him in 1899, and have notes of two or three consultations in the autumn of that year when he as usual complained of abdominal pains; but I could not detect any abdominal tumour. At some time between this date and March, 1901, but exactly when is unknown to me, he was operated upon in India for "acute intestinal obstruction," and a large growth was found within the abdomen which it was impossible to remove. He recovered from the exploratory operation and the intestinal obstruction and was immediately invalided home. When I saw him on his arrival in 1901 I could find no abdominal tumour; in fact, he seemed in better condition than I had usually seen him, and after staying in England until the beginning of January, 1902, he again went back to India. He, however, subsequently came to England on invalid leave, and I saw him several times from April onwards in 1903, as he was home for six months in that year. At this time he was drugging himself with morphia; he always complained more or less of dyspeptic troubles—flatulence, intestinal distension, griping pains, and obstinate constipation. He had suffered in the same way before he underwent any abdominal operation, and he was always very neurasthenic; but these symptoms were more pronounced some time after the first operation than ever before, though they were greatly relieved by the detachment of adhesions in May, 1897.

Further and final report of the case from Indian medical officers.—On Nov. 23rd, 1904, Captain E. J. O'Meara, F.R.C.S.Eng., I.M.S., wrote to me as follows:—

"Captain —— came under my care in March or April, 1901, for acute intestinal obstruction. The abdomen was opened" by Colonel Joubert, "but it was found impossible to deal with the growth on account of its large size. Shortly after this the patient was invalided home, but returned after a few months very angry with me; as he said that you, after consultation with Mr. Watson Cheyne, told him that there was nothing the matter with him" (i.e., that there was no tumour so far as we could detect). "I also saw remarks by you on the case in the *Clinical Journal* about April, 1902. The growth must have diminished very rapidly indeed after the operation in 1901, as at the time of the operation it practically filled the abdomen. I enclose Captain Birdwood's letter; it will doubtless be of interest to you."

The remarks referred to in Captain O'Meara's letter as having been made by me about the case were published in the *Clinical Journal* of March 19th, 1902, in the report of a discussion on the treatment of inoperable cancer at the West London Medico-Chirurgical Society. I was calling attention to the fact that cases are from time to time condemned by competent and able clinicians as inoperable cancer which from their subsequent course would seem not really to have been malignant at all; and I was giving instances of such which had come under my own observation. In alluding to Captain ——'s case as that of an "Indian military officer," I said: "In the beginning of the year 1901 his abdomen was opened in India on account of obstinate constipation, and the wound was closed, as the surgeons found a condition which they reported to be malignant, and inoperable; and he was sent home to England to die. The mass found by these surgeons was, I believe, nothing more than the condensed and matted adhesions following the former operations; at any rate, this officer has just lately (January, 1902) returned to his duties in India fitter than he had done for some years."

My only informant about the operation which had recently been performed upon him in India was the patient himself. I had received no report of it from the surgeon who had performed it, or from anyone else who was present at the operation. Had I possessed an authoritative account of the operation I should, no doubt, have spoken of the case as one of those remarkable, rare, but attested instances in which a malignant tumour has spontaneously vanished, either after, or independently of, an operation. The sceptical tone of my remarks at the time, however, serves to show how completely the tumour had shrunk or vanished, as it was absolutely impossible of detection on the most careful palpation and percussion. Moreover, two years after the discovery in India of this large inoperable tumour Captain —— told me when in England in 1903 that he was contemplating a second marriage. He was feeling well enough to deem himself justified to take this step; and I have in my possession a telegram and a long letter sent to me from India by him in May, 1904, in reference to this projected marriage.

But the end was not so very far off. The marriage did not take place for reasons immaterial in this connexion. When Captain O'Meara wrote to me on Nov. 23rd, 1904, he enclosed a letter from Captain G. T. Birdwood, I.M.S., written

to Colonel C. H. De La Ferte Joubert, I.M.S., on Oct. 7th of the same year, which runs:—

"You will be sorry to hear that Captain —— died the day before yesterday. The operation was apparently successful, for next day he passed a very large motion. Colonel Barratt made a post mortem. There was a tumour the size of a cocoanut growing from the spine, with numerous adhesions in every direction matting down the intestines. The gut immediately behind the tumour was gangrenous, and packed with hard fecal scybalæ. The anastomosis must have taken place from a coil just above the gangrenous portion to a coil below the tumour. If the gut had not been gangrenous he might have lived a month or two, but the growth was increasing so rapidly that the end would not have been far off. As you had previously operated upon him I thought you would like to know how the case ended."

Colonel Joubert himself adds this comment to Captain Birdwood's letter:—

"The growth was about that size, or larger when we operated in 1901, and I felt it so big when I was in Agra in July last. Birdwood operated to relieve obstruction, and made an anastomosis. It has been a very irregular case for years past.—C. H. J."

No information is given as to the nature of the "tumour."

CASE 2.—In December, 1910, Mr. ——, aged 46, engaged in mercantile business in Calcutta, consulted me on account of pyuria and coli bacilluria. He told me that about 12 years ago he had undergone castration for a tumour of the right testicle. Whilst he was under my treatment I received a letter from Dr. Adrian Caddy, F.R.C.S., of Calcutta, dated Feb. 1st, 1911, from which I abstract the following:—

"We are writing to you concerning a patient of ours, Mr. ——, who has been under our care for several years past. My brother, Dr. Arnold Caddy, removed Mr. ——'s testicle for chondro-carcinoma of that organ about ten years ago. I may say that he published the case in the 'Annals of Surgery' at the time. Since that time Mr. —— has kept in good health until June last, when he developed a long-continued fever of a typhoid character which lasted several weeks, and which he had when he was put on board a ship for England. After about three weeks of fever he developed pyuria, which I believe has lasted ever since; previous to his illness he had a gleet. We X rayed him and found nothing. A pathologist here found bacillus coli infection in his urine, and made a vaccine which, injected into him (the patient) unfortunately seemed to make him worse, and so was not persisted in at the patient's request; a guinea-pig was inoculated with urine but with negative results. ..... All the time we were fearing a late recurrence of the chondro-sarcoma, somewhere in the urinary tract, &c."

Disregarding the important and interesting subject of coli-bacilluria my reason for relating this case is because of its association histologically, pathologically, and clinically, with the subject of columnar carcinoma, or adeno-sarcoma of the testis, and thus with Case 1 just previously related. From the account in the "Annals of Surgery" of 1899 (Vol. II., p. 210) I have abstracted the following notes:—

In December, 1894, when Mr. —— was 29 years of age, he was struck in the right testis by a cricket-ball. Considerable pain at the time was followed in a week by some hardness of the lower end of the testicle. This hardness remained without change until October, 1895, when the testis began to enlarge, and the hardness to spread upwards. In September, 1896, the testis was the size of a duck's egg, painless, hard, and somewhat larger at the upper end than elsewhere. And so it remained, unaltered, until June, 1898, when the testis became painful and tender. A fortnight later the organ began suddenly to increase in size. On Dec. 17th, 1898, the testis was excised. It was the size of a closed fist. The spermatic cord was not thickened. No lymph glands could be felt.

On vertical section the whole mass appeared to be a new growth, no testicular tissue being apparent. At the upper and back part a nodule of cartilage the size of a nutmeg was cut through.

Microscopical appearances.—A microscopic examination was made by Major J. F. Evans, the professor of pathology at the Calcutta Medical College, who pronounced the growth to be a chondro-carcinoma. The cartilage was in the neighbourhood of the epididymis, and was surrounded and interrupted by many cysts lined by columnar epithelium. Professor Evans tells that the microscopic sections of this growth correspond with the description of chondro-carcinoma of the testis (the only description he had been able to find at that date) given by Ziegler in his "Special Pathological Anatomy," published in 1897. Professor Evans was about to publish a paper on the pathology of this chondro-carcinomatous testis when unhappily he died in March, 1899, of bubonic plague which he contracted when making autopsies on several cases of this disease.

Mr. Foulerton has referred to Dr. Arnold Caddy's report of this case as published in the *Indian Medical Gazette*. Its clinical history, taken with the microscopic picture of the pathological anatomy of the growth, is of great importance. For three and a half years the disease seems to have remained quiescent in the testis, and though 12 years have elapsed since the growth was removed the patient still remains without any obvious sign of recurrence. Such a history would give the false impression that the tumour is benign, but the microscopic appearances clearly prove it to belong to the same malignant group as Case 1, and both cases alike to the same histological class as many other cases which have pursued a rapidly growing and early recurring history.

Both the cases which I have related show that columnar carcinoma of the testicle may remain quiescent, or the patient may be absolutely free of recurrence for many years; but the expectation is always that the disease will ultimately recur, though it may be only after a long time. When, therefore, this fact is taken into account, together with two others—namely, (1) that it is impossible to detect the early secondary infection of the ilio-lumbar lymph-glands; and (2) that the extirpation of these glands, when obviously enlarged subsequent to removal of the testis, is an operation of magnitude and severity, and has been very discouraging hitherto in its results—when, I say, these facts are taken into consideration, we may well be led to hope that the practice of the "radical" or "improved" method of excision of the testis may prove to be successful.

So far, however, in the 17 cases reported of this "improved" operation, there is little, if any, foundation for such hope. In some of the operations the affected glands could not be removed, or, in other words, the "improved" method was found to be impracticable; in other cases in which the glands were successfully removed at the time, the disease soon returned; whilst in the rest insufficient time has elapsed since the operation to permit of any conclusion being drawn as to the ultimate result. Still, hope need not necessarily perish because as yet little, if any, encouragement can be derived from the very limited existing experience. Meanwhile the low malignancy of carcinoma testis, and the long histories of such cases as I have recorded will often afford a prospect to any given patient of prolonged or entire immunity after the testis and cord have been excised by the old method.

THE CAUSATION AND PREVENTION OF CERTAIN TOXIC SYMPTOMS FOLLOWING THE ADMINISTRATION OF SALVARSAN.

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IT is now generally recognised that intravenous injections of salvarsan are followed in most cases by immediate symptoms of toxicity, these symptoms manifesting themselves as a rise of temperature frequently accompanied by a well-marked rigor and general malaise. Clinically these symptoms have been so constant that we have been led to describe them as "the normal accompanying effect of '606.'" Their onset is between half an hour and one hour after the injection, but it is sometimes even earlier. The temperature rises rapidly and the patient experiences a sensation of cold, shivers, or is attacked by rigors which may last for so long as two hours. The summit of the fever curve usually attains to 102°–103° F., but it has been observed as high as 105°; this point is reached between one and four hours after the injection. Cyanosis is frequently present, and indeed may be very pronounced. Vomiting is common, as also are headaches and pains in the back, the cardio-vascular system, on the other hand, not being markedly disturbed. The acute symptoms are short-lived; about four hours after the injection, accompanied by sweating, the temperature commences to fall. The decline is less rapid than the rise, the

normal limit being reached eight to ten hours after the injection. The patient is now comfortable, and, indeed, the disturbance, however brisk, is so fleeting that ill-effects are seldom complained of on the following day.

It is the causation and prevention of these symptoms that we propose to discuss.

So far as we ourselves were concerned it was quite exceptional to see an intravenous injection pass off without the occurrence of some toxic symptom; indeed, we may say that we had never observed a complete absence of fever when the temperature was taken hourly after the injection. On the other hand, we learned, both verbally and from the literature, that other observers did not experience toxic symptoms so frequently as we did, although undoubtedly they were present in the great majority of cases. This relative freedom from toxicity in the hands of some appeared to be important. It was often held that the rigors were an expression of the toxicity of salvarsan and that they varied in intensity and frequency according to the degree of susceptibility or insusceptibility to arsenic possessed by the particular patient. Clearly, however, it was impossible that one observer should be favoured with patients whose susceptibility to arsenic was minimal, while another should inject only the hypersensitive. The preparation could not be "organotropic" in the hands of one operator and not in the hands of the other. We, therefore, were led to suspect that in these cases it was the operator who was "organotropic" and not the salvarsan; in other words, we began to form the opinion that the occurrence of rigors and the other symptoms of toxicity were due to an error of technique and not to any characteristic of the salvarsan.

From a review of our own experience we arrived at a series of conclusions bearing on these symptoms which appeared to be beyond dispute.[1] We found that (1) the fever was higher and the toxic reaction more marked in secondary and tertiary syphilis than in primary or latent syphilis; (2) the symptoms occurred in non-syphilitic individuals, but not to such a marked extent; (3) the symptoms also occurred after intra-muscular injections, although in this case also to less extent. We were unable to find any common factor in these results except the presence of salvarsan, but for reasons already stated we were not disposed to accept this as the sole cause of the symptoms.

Of the various theories advanced, none could be entirely reconciled to the observed facts, although we were distinctly in favour of the suggestion first brought forward by Schreiber,[2] that the fever in secondary syphilis was the result of the liberation of large quantities of endotoxins from the destroyed spirochætæ.[3] In this view we were supported by the observation that the disappearance of the spirochætæ from chancres was closely connected in time with the height of the fever. This theory might account for the rise of temperature after intra-muscular injections, since this occurred most definitely only in secondary syphilis. The fact, however, that fever occurred after injections in non-syphilitic cases suggested that the injection as such was probably to blame; indeed, Marschalko[4] considered that the percentage of sodium chloride present in the saline solution was a matter of great importance. We have, on the other hand, detected no constant alteration in the toxic symptoms by varying the concentration of sodium chloride. Further, we were unable to accept the suggestion of Wechselmann[5] that the rigors were due to the growth of hæmolytic bacteria in the saline solution. He observed that in one section of his patients rigors were common, while in another they were uncommon. These two sections, males and females, were subjected to different conditions in that the saline used in the case of one section was boiled for a short time and kept ready for use in the incubator, while in the case of the other it was kept on ice. Those patients injected with the incubated saline solution reacted more markedly with toxic symptoms than the others, and further, the symptoms were lessened by a more thorough sterilisation. In our cases, however, there could be no question of a growth of bacteria in the saline solution, since this was always completely sterilised in the autoclave.

In his paper Wechselmann called attention to the work of Bingel,[6] unconnected with salvarsan, upon fever following subcutaneous and intravenous injections of saline solutions. This observer found that fever was elicited in man by subcutaneous and a few intravenous injections of normal saline solution, and that the result was not influenced by alterations in the concentration of sodium chloride. He found, however, that the occurrence of fever was largely diminished by the use of Ringer's solution. These observations appeared to be of the greatest importance, and we at once proceeded to verify them. As a result of our investigations already published[7] we concluded: (1) that every intravenous injection of normal saline solution was followed by symptoms of toxicity more or less severe, these symptoms being indistinguishable from those following the intravenous injection of salvarsan as already described; (2) that these toxic symptoms were very little less frequent after intravenous injections of Ringer's solution than after saline; and (3) that alteration in the concentration of sodium chloride did not affect the result. We therefore inclined to the belief that toxic substances were present in the distilled water used in the manufacture of the saline solution, and this belief was strengthened by previous observations made by one of us upon the toxic effects upon trypanosomes of certain samples of saline solution. It was then found that the toxic bodies could be eliminated from the distilled water by redistillation, and that saline solution prepared from such redistilled water was then innocuous to trypanosomes. Proceeding along these lines we observed that saline solution made from the toxic distilled water, but after redistillation, was entirely innocuous to man, its injection being followed by no symptoms. We had, therefore, eliminated certain toxic bodies from the water by redistillation, and saline solution so prepared after complete sterilisation could be kept indefinitely in a non-toxic condition.

The nature of the toxic substance was not clear; it might be a metallic poison derived from the block-tin still, or it might be a bacterial poison emanating from micro-organisms growing in the distilled water. In order to test whether the water was toxic when first distilled, or whether the toxicity developed later in the laboratory, water was collected direct from the still and immediately made into saline solution and autoclaved. Such water was found to be quite non-toxic, and therefore the occurrence of metallic poisons could be excluded. The experiment also showed, however, that the toxicity was not present at the time of distillation but developed later, and it clearly became necessary to investigate the laboratory distilled water for the presence of micro-organisms. From this investigation we obtained an unlooked-for result, finding no less than 180 millions in 300 c c.—i.e., the usual dose of water administered with "606."

It was not easy to understand how these organisms, after being undoubtedly killed, could give rise to such marked symptoms. They were mostly non-pathogenic cocci and bacilli, and we were not acquainted with any bacterial toxin which could survive a temperature of 115° C. for 20 minutes in the autoclave. However, by means of a filter we removed these organisms from the water in such a way as to allow the passage of any hypothetical toxins, with the result that saline solution prepared in this way was found to be entirely deprived of its toxicity. We therefore concluded that the toxicity of saline solution was entirely due to the dead bodies of micro-organisms which had developed in the distilled water after distillation.*

Having thus demonstrated the toxicity of saline solution and indicated methods by which this toxicity might be eliminated, we applied the principle to the use of salvarsan. The results fully justified our expectations, and the six months following the original publication have been confirmatory. By the use of redistilled water in the manufacture of the saline solution we have eliminated the rigors and toxic effects described above as normally following an intravenous injection of "606," *except in the case of acute secondary syphilis* or in primary syphilis (very large chancres) just before the outbreak of the rash.† In latent or tertiary syphilis or in the later stages of secondary syphilis, as also in parasyphilitic and non-syphilitic individuals, the injection of maximal doses of "606" does not give rise to fever or toxic symptoms except in rare cases.

* Hort and Penfold have recently (THE LANCET, 1912, vol. i., p. 579) questioned whether "salvarsan fever" is due to unbroken bacterial proteins, but allowed that it *may* be due to "degradation products" of such proteins. The difference between our views rests chiefly upon the result of injections of filtrates from bacterial suspensions. These they found toxic, we nontoxic. It is necessary to await the publication of precise technical details.

† In a recent paper Stümpke[8] has sought to show that fever is still invariable after the injection of salvarsan dissolved in re-distilled water, but it must be noticed that all his patients were in the acute stage of the disease.

Since the completion of these observations, which may be examined in more detail in the original publication,[7] we have made further investigations on rabbits in confirmation of the suggested microbic origin of the particular symptoms which we have described. The rabbit is well suited for experiments of this nature, because its temperature is stable and does not vary within narrow limits if due care is taken to keep it in constant surroundings. On the other hand, the heat-regulating mechanism of the guinea-pig is so labile that observations upon its temperature under the conditions of the experiment were quite without value. As a result of many readings the normal temperature of the rabbit taken in the rectum was found to vary between 100° and 101·5° when the animal was kept at room temperature in the autumn.

EXPERIMENT 1. *Showing the influence of sterile normal saline solution injected intravenously into the rabbit.*—The saline solution was made with pure sodium chloride (0·9 per cent.) and ordinary distilled water—sterilisation in the autoclave. The same sample of distilled water stored in a number of flasks was used throughout the experiments. The quantity injected intravenously was 50 c.c., our ordinary salvarsan injection apparatus[9] being used.

Rabbit.	Temp. before injection.	Temp. 2 hours after.
1	100·1° F.	104·2° F.
2	100·2°	103·8°

Next day the temperatures were normal. Injections of ordinary saline solution, therefore, produce fever in rabbits.

EXPERIMENT 2. *Showing the influence of bacterium-free saline solution injected intravenously.*—The technique of this experiment only differed from that of Experiment 1 in the nature of the distilled water used. Instead of this being derived from the supply kept in the laboratory it was collected direct from the still and immediately made into saline solution and sterilised.

Rabbit.	Temp. before injection.	Temp. 2 hours after.	Temp. 4 hours after.
3	100·4° F.	100·4° F.	101 0° F.
4	100·6°	100·6°	100·4°

Injections of microbe-free saline solution thus did not give rise to fever. Both these observations were repeated as follows:—

Rabbit.	Saline solution.	Temp. before injection.	Temp. 2½ hours after.
5	Bacterium free	101·0° F.	101·4° F.
6	,, ,,	100·8°	101·6°
7	Ordinary saline	101·2°	103·2°
8	,, ,,	101·4°	103·0°

EXPERIMENT 3. *Showing the influence on the rabbit's temperature of various bacteria isolated from distilled water when sterilised and injected intravenously.*—We have already mentioned that the distilled water which we used in our observations on man contained 180 million microbes per 300 c.c. Plate cultures were again made from the distilled water and incubated at room temperature. After several days the predominant types were selected and transferred to separate tubes labelled A, B, and C. These organisms were respectively two varieties of Gram-negative cocci and one Gram-negative bacillus. Emulsions of the cultures were then prepared and sterilised in the autoclave at 115° C. for 20 minutes. The emulsions were diluted with bacterium-free saline solution, so that the number of microbes corresponded to the number present in ordinary saline solution (180 million per 300 c.c.). Technique of injection as before.

Rabbit.	Injection.	Temp. before injection.	Temp. 2 hours after.
9	50 c.c. bacterium-free saline + 30 million microbes A	100·2° F.	103·0° F.
10	Do. + 30 million microbes B	100·4°	101·4°
11	Do. + 30 million microbes C	100·1°	102·2°
12	Do. without microbes	99·8°	99·8°

The addition of microbes isolated from distilled water can render a microbe-free saline toxic.

EXPERIMENT 4. *Showing that the dead microbes themselves and not endotoxins are the cause of the fever.*—20 c.c. of the thick emulsions (150 million per c.c.) were passed through small Doulton white filters of 3 c.c. capacity, so that sufficient fluid could be passed through to compensate for any loss of "endotoxins" by adsorption by the filter. 1 c.c. of the filtrate containing the "endotoxins" of 150 million microbes was then diluted with 50 c.c. of bacterium-free saline and injected.

Rabbit.	Injection.	Temp. before injection.	Temp. 2 hours after.
13	50 c.c. of bacterium-free saline solution + 1 c.c. of filtrate B	100·7° F.	100·8° F.
14	Do. + 1 c.c. of filtrate C	101·0°	101·0°
15	Do. + 1 c.c. of emulsion B unfiltered	100·3°	104 2°

Thus the fever is produced by the bacterium and not by any hypothetical endotoxin.

EXPERIMENT 5. *Is a second injection of saline solution followed by increased toxic effects?*—The question of increased toxic effect after repeated injections of saline solution and in particular after salvarsan injections is of great practical importance. In the literature several instances have been recorded in which severe symptoms followed a second injection of salvarsan, although the first injection followed a normal course. Two factors might be involved in this phenomenon—the salvarsan (which will be referred to later) and the bacterial contents of the saline. If the latter were the cause of increased toxicity after the second injection, it would be expected that such symptoms would be of an anaphylactic nature. We have, however, been unable to demonstrate any increased toxic effects by the repeated injection into rabbits of the number of micro-organisms present in ordinary saline solution. Rabbits 1 and 2 were reinjected with 50 c.c. of ordinary saline solution 12 days after the first injection (*vide* Experiment 1, *supra*).

Rabbit.	Temp. before.	Temp. 2 hours after.
1	100·4° F.	103·8° F.
2	100·0°	104·0°

Rabbits were then injected with 50 c.c. of ordinary saline solution, and 17 days later with 150 million microbes A, B, and C (*vide supra*) diluted with re-distilled water saline solution to 50 c.c.

Rabbit.	Temp. after first injection.	Second injection.	Temp. after second injection.
16	103·2° F.	Microbes A	102·2° F.
17	102·4°	,, B	104 2°
18	103·6°	,, C	104·5°
19	104·0°	Re-distilled saline alone	101·2°

No anaphylactic symptoms were observed.

To recapitulate these experiments on rabbits:—

1. The injection of sterile laboratory saline solution is toxic.
2. The injection of microbe-free saline solution is non-toxic.
3. The addition of dead bacteria isolated from the laboratory saline solution before sterilisation to the non-toxic microbe-free saline solution renders the latter toxic.
4. The toxic effect is due to the microbes themselves and not to endotoxins derived from them.
5. The toxic effect is not due to any one variety of microbe.
6. No increased toxicity or anaphylaxis was found to follow a second injection of the microbes.

As a result of the researches which have been carried out under Professor Ehrlich's guidance upon the relation of water bacteria to fever after salvarsan injections, the following explanation has been suggested. Yakimoff and Yakimoff[9] have shown that salvarsan injected into animals along with various dead bacteria is more toxic than salvarsan alone; that is to say, when such bacteria are present, a smaller dose of salvarsan will suffice to kill the animal than when no bacteria are present. It is considered that this increase in toxicity is the cause of the rigors and toxic symptoms which are observed. The salvarsan is more organotropic in the presence of bacterial toxins and less parasitotropic, and it thus follows that salvarsan given in toxic saline solution is a less efficient spirochæticidal remedy than salvarsan dissolved in non-toxic saline solution. As regards the increased toxic symptoms usually noticed in secondary syphilis, the same argument will apply. It is invariably found that a dose of a chemotherapeutic substance which will be readily borne by a normal animal will kill a similar animal infected with trypanosomes or spirochætæ; in other words, the substance is relatively more toxic in an infected animal than in an uninfected. Yakimoff and Yakimoff have definitely shown that the toxicity of salvarsan tested upon rabbits infected with trypanosomes is proportionate to the number of trypanosomes present in the rabbits. Similarly the toxicity of salvarsan in syphilis is at its maximum when the number of spirochætæ is at the maximum—i.e., in secondary syphilis. Increased reactions may therefore be expected in such cases.

As a result of our investigations we are of opinion that this theory does not explain adequately the phenomena observed by us. We have demonstrated that all the typical symptoms of a salvarsan injection may be produced by the injection of the actual saline solution without the addition of salvarsan, and that the occurrence of these symptoms after salvarsan injections may be prevented by suitable treatment of the saline solution. Thus salvarsan cannot have any effect primarily or secondarily upon the rigors. These occur as a result of the bacterial contamination of the water with or without the presence of salvarsan. In our view the toxicity of this substance is not increased by the addition of bacterial toxins. In a "normal" individual the toxicity of salvarsan is practically *nil*, whether bacterial toxins are present or not. This view may be tabulated as follows:—

Toxicity of saline solution	= 0
,, saline solution + water microbes	= 1000
,, saline solution + salvarsan	= 10 (normally)
,, saline solution + microbes + salvarsan	= 1010

The precise mechanism by which the dead bacteria exert this toxic effect is doubtful, but from the similarity between the symptoms it may be supposed that the bacteria exert an

action upon the body similar to that produced by the intravenous injection of various foreign proteid substances as described by Vaughan, Cumming, and Wright.[10] The experiments of Yakimoff and Yakimoff might indeed explain the phenomenon of fever occurring in secondary syphilis after the exhibition of salvarsan dissolved in microbe-free saline solution. The toxicity of the salvarsan might be increased by the larger number of spirochætæ in the sense that a smaller dose may kill a secondary syphilitic than would be necessary in the case of a latent syphlitic. On the other hand, it might be objected that the rigors and transient toxic symptoms observed are not in any way suggestive of arsenical poisoning. The type of temperature curve suggests that the phenomenon is an artificial crisis such as is produced in relapsing fever by the administration of salvarsan, and the rise of temperature in this case would be due to the liberation of endotoxins from the dead spirochætæ. To this view we still adhere. The rigors and toxic symptoms which occur in secondary syphilis must be different in origin from those occurring in other forms of syphilis, because they continue in spite of the use of microbe-free saline solution. They seldom occur later than the first week or two after the outbreak of the rash, no doubt owing to the fact that, after the first invasion of the system, the great majority of the spirochætæ are rapidly destroyed by natural processes. Further, there are slight clinical differences between the "saline" rigors and those occurring in secondary syphilis after the use of salvarsan dissolved in microbe-free saline solution. The latter occur rather later after the injection, the temperature seldom starting to rise for three or four hours. This is in support of the endotoxin view, since we have found that there is no disappearance of spirochætæ from chancres for four or five hours after an injection. There is a latent period first and then the destruction of the spirochætæ is found to run parallel with the height of the fever, so that, by the time the normal limit is again attained, no spirochætæ can be detected.

Thus we conclude that the phenomena of rigors in syphilis treated by salvarsan dissolved in toxic saline solution and rigors occurring in secondary syphilis after the use of non-toxic saline solution are due to two entirely different factors. In the first case they are due to the dead bacteria in the water acting as a foreign proteid, while in the second they are due to bodies liberated from the spirochætæ after their destruction.

The elimination of the more excessive toxic symptoms by the use of bacterium-free saline solution is a matter of some value; so much so that Professor Ehrlich urges that everyone who makes use of these injections should distil his own water. This is undoubtedly desirable. Commercial distilled water, as shown by P. Th. Müller,[11] is often grossly contaminated with bacteria, and the difficulties in the preparation of a *certainly* pure saline solution are sufficiently great to render the transfer of the responsibility of manufacture unsatisfactory. It will be clear that in the absence of toxic symptoms due to the water the slight toxicity due to the salvarsan as such will be more easily borne, and larger doses may therefore be used. For the last six months we have never given an adult less than the maximum (0·6 grm.) at one time. Again, the relative contra-indications to the use of salvarsan lose much of their importance. The cardio-vascular system is not now put to the test in any way so severely as formerly, neither is a diseased nervous system so prone to develop stormy local "reactions." The exacerbations of lightning pains, headaches, and similar symptoms in such patients have been thought to represent a "local reaction" due to the effect of "606" upon the spirochætæ; since using bacterium-free saline solution, however, we have not observed these occurrences. We therefore consider that the chances and risks attending the treatment of tabetics and general paralytics, if such treatment is considered to have sufficient value, may be appraised less highly than was formerly the case.

It must not, however, be supposed that with satisfactory saline solution salvarsan becomes an entirely indifferent substance in every case; on the contrary, it is now more possible to recognise its own measure of toxicity. Formerly it was the general rule for the toxic symptoms to be less marked after second or third injections. Now we are of opinion that such toxic symptoms as may be met with may become progressively more marked after repetition of the dose at short intervals. This, without doubt, is not the result of any process which may be described as "anaphylaxis," but simply represents the accumulative effect of large doses of arsenic. The symptoms which we have met with are usually most marked in the gastro-intestinal system, and it is interesting to note that the recent work of Kochmann[12] has shown hæmorrhagic gastritis and enteritis to be the prevailing lesion in animals after fatal doses of "606." These toxic symptoms are by no means invariable, and extremely rare after first injections. The relative harmlessness of the drug, however, has not led us to relax any of the precautions which we have formerly adopted. We never administer "ambulatory treatment."

The practical application of these principles is not devoid of difficulty. In order to ensure as far as possible an absence of toxicity, the preparation of the water must be conducted with the greatest possible care. All vessels must be absolutely clean. The water must be collected direct from the still, and immediately made into saline solution, and *sterilised* in the most complete bacteriological sense. When once a flask has been opened the contents must be used at once, remnants cannot be preserved in the ice chest for future use.

In conclusion, we wish to touch briefly upon another aspect of the toxic saline solution.

It is of general interest to record the cases of death which have followed the administration of salvarsan; from such records luminous conclusions may be, and have been, drawn. THE LANCET itself has recently referred to several of these cases in its "annotations." From many of the reports, we think, a reasonable person could hardly avoid gathering the impression that salvarsan is a dangerous substance and that fatal results have frequently followed its administration. Incidentally the suggestion is often present that such fatal results are hushed up by salvarsan enthusiasts in order that the public may not recoil from the risks of treatment. These suggestions emanate from mercury or hektin enthusiasts. Anyone reviewing the incidents which have surrounded salvarsan since its introduction might reasonably turn from their contemplation with feelings of disgust. Thus we read in the *Times* under the heading "Preparation 606" the following:—

> Paris, Feb. 7.—Professor Gaucher has reported to the Academy of Medicine that numerous deaths have occurred in France, Germany, Persia, and Rumania through the employment of the remedy known as "606," the patients dying in a state of coma after a few injections. Professor Gaucher also complains of attempts to hush up such fatalities in France, and insists that the remedy is deadly and of small therapeutic efficiency.

We assert that the impression left by this statement upon the great majority of persons will be false.

Turning to the other side of the question, we find that writers of greater judgment have advised caution in the use of salvarsan or have even presented a volume of objection to it. Such papers have been published in THE LANCET. It appears to us, however, that many of these objections are open to criticism in that they presume that a death obviously following an intravenous injection of salvarsan is necessarily *due* to this chemical substance. It is quite clear that when one refers to an "injection of salvarsan" one makes use of a loose expression. The injection consists of water, sodium chloride, sodium hydrate, and usually micro-organisms in addition to salvarsan. As a result of our observations we have come to the legitimate conclusion that these micro-organisms being the cause of the severe reactions which are sometimes met with are also the cause of a number of deaths which have been recorded. Such deaths are, therefore, preventable and not due to salvarsan. We do not think that the microbes are the cause of all deaths following salvarsan; there are, no doubt, other factors; we, however, assert without fear of contradiction that the number of deaths and the degree of toxic results will vary largely with the skill of the operator or the facilities open to him. We look upon it as ridiculous to compare the facilities of Persia at the present day with those of Europe, and equally ridiculous to quote results alleged to have been obtained in that country as evidence either against or for the use of salvarsan elsewhere.

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THE OPERATIVE TREATMENT OF GRAVES'S DISEASE.[1]

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MY contribution to this discussion is made with a good deal of diffidence and hesitation, because my experience of the operative treatment of Graves's disease is quite a small one, and I regard many of the most interesting problems of the subject as being so far from solution as not profitably to be entered upon here. Limited as one's experience is, and it is based on less than 50 cases, it has enabled one to come to certain rough practical conclusions which I will attempt briefly to put before you.

In comparing the medical and surgical treatments of Graves's disease it must be kept clearly in mind that the former does not attempt to influence directly the course of the disease, but is limited to putting the patient under favourable conditions while the disease runs its natural course, to end in arrest, spontaneous cure, or death. Operative treatment, on the other hand, is intended to be specific and to deal directly with the disease itself. It is clear, therefore, that we have to take into account not merely the comparative mortalities of the two methods, but also the length of the natural course of the disease and the condition of the patient during its progress. That the condition of a patient with severe Graves's disease is a very miserable one is common knowledge and is strikingly shown by the willingness of the patients to submit to operation, although they are rendered morbidly nervous by the disease and have usually been told before they come to the surgeon that the operation is an excessively dangerous one.

While I do not attempt to minimise the fact that the mortality of the operation is a considerable one, and possibly greater than that of the untreated disease, I am convinced that it would be justifiable to run a good deal of risk if it were the means of avoiding the years of miserable illness which are the lot of so many of the patients. It seems to me, therefore, that now we know the operation can be done without, at any rate, a very great mortality, the principal interest centres round the results rather than around the actual death-rate. I confess that to me discussions as to the relative death-rates of the untreated disease and of the operation—now we know that they are not widely different—seem to be comparatively useless, whereas the question of what relief can be obtained by operation is of the utmost importance. Unfortunately it is a most difficult question to solve in a way satisfactory to any fairly sceptical inquirer.

There is no disease more difficult to deal with statistically than exophthalmic goitre. Not only does the fully developed disease include certain well-defined types, but this central group is surrounded by very numerous forms which constitute an unbroken series, from unmistakable Graves's disease on the one hand to wholly non-toxic goitres on the other. It is the actual difficulty in drawing sharp lines of distinction which makes one look upon all statistics of the disease, surgical or medical, with a certain caution. The same ambiguity renders the statement of results equally difficult to interpret. Anyone who has some experience of the operative treatment knows that all grades of relief are met with, from total and permanent disappearance of all symptoms to the mere temporary subsidence which follows all operations. To divide the results into classes according to cure, much improvement, no improvement seems to me to put much too great a strain upon the judgment of the observer, and can only be of any considerable value when the material dealt with is of enormous size.

Again, the selection of a single objective sign such as pulse-rate, exophthalmos, or body weight as a measure of improvement is open to equally serious objections. Exophthalmos or tachycardia may, as is well known, become stereotyped and persist as an isolated phenomenon while the patient is perfectly well in every other respect. The body weight is at first sight a more valuable standard. Experience has shown me—though I do not believe the fact is generally recognised—that the body weight may show abnormal variation in *both* directions in Graves's disease—a pathological diminution being succeeded by a pathological increase, or *vice versâ*.

I may mention two cases which illustrate how fallacious a mere record of weight may be. In each of them the first sign of disease the patient noticed was that she became very fat. As the disease developed severe emaciation came on, and at the time of the operation both patients were extremely wasted, the weight of one, for example, having fallen from the abnormal figure of 11 st. to below 6 st. In each case after the operation the patient rapidly put on flesh, and there was great improvement in all the symptoms. Then a stage was reached when the patient was uncomfortably fat, and though much better than before yet had a distinct residuum of symptoms. A second operation was now done. Following it all the symptoms completely disappeared and the patient actually lost weight, the one in whose case I have given the figures losing over a stone and settling down to 10 st., her normal weight.

In view of these and similar facts it would, in my opinion, be useless for me to attempt to set the results of my small experience before you in tabular form, and I shall therefore merely try to give as frankly as I can such practical general conclusions as I have come to.

In the first place I propose to deal shortly with the question of mortality. The operation is one which shows a marked contrast with all other operations on the thyroid. Of these latter, as is well known, there is practically no death-rate. In a considerable experience of thyroid operations, excluding exophthalmic goitre but including a fair proportion of malignant and of intrathoracic goitres, I have never lost a case from the operation, and that, of course, is the common experience. Graves's disease, on the other hand, shows a mortality which was in the early days heavy and is even now considerable. The mortality, however, presents this encouraging peculiarity, that it can be, and invariably is, reduced as the surgeon acquires experience in the special requirements of the operation.

Taking the experience of representative surgeons on the continent, you will find that out of the first 50 cases of any given surgeon he will usually lose 5 as a direct result of the operation. This 10 per cent. mortality is usually considerably reduced in a surgeon's later work, and is no doubt to some extent to be regarded as a measure of the difficulty in acquiring the special kind of knowledge which goes to successful operating on these cases. I should be inclined to venture the opinion that a reduction to 5 per cent. should be generally possible, and I think that if that could be established as a standard figure the operation could be regarded as having made out at any rate a strong *primâ facie* case for being tried on a large scale.

In my own cases I have had a mortality of 10 per cent. This is undoubtedly, as I have already said, a high figure, and I may add by way of comment that it is based on a strict definition of the disease and an unwillingness to admit the larval forms except on very good evidence. Moreover, I have never felt justified in refusing to operate on a patient on account of the severity of the symptoms, for it is just the worst cases which are most urgently in need of relief, and for which if the operation is survived the most brilliant results can be attained.

Turning now to the results, one may begin with the general statement that all patients who get over the operation show some more or less permanent improvement, while in some all symptoms disappear as if by magic within a few days.

The two most definite statements one can make are, first, that patients with a small firm thyroid and marked symptoms scarcely ever show more than a temporary improvement. In them the operation is never seriously dangerous and never really satisfactory. The class is not a large one; I have dealt with not more than three or four definite cases.

Secondly, early mild cases—that is, cases without an abrupt onset, and showing a well-marked interval between the appearance of the physical signs and the development of the symptoms—invariably do well and are cured by a single operation. This class is well-defined, easy to identify, and allows of a positive prognosis being made. They constitute

[1] A paper read on Feb. 27th at a joint meeting of the Medical, Surgical, and Anæsthetics Sections of the Royal Society of Medicine.

about a quarter of my material. The operation seems entirely free of danger, and no such case has ever given me any anxiety.

The bulk of the cases—more than half my material—presented the disease in a severe form, the symptoms being marked as well as the physical signs and the goitre well developed. In such cases the improvement seems to vary with the amount of thyroid removed, and in about half of them is permanent and more or less complete. A second operation may be necessary because of a residuum of symptoms being left or because a recurrence takes place. I am inclined to say of this class that at least half can be permanently cured, though some need a second operation to secure this result. Of the rest, the disease can be greatly relieved or brought to a standstill in most.

Anything more detailed than this rough analysis would not, in my estimation, at the present time be of much value, but I should like to add that I am deliberately giving cautious and conservative estimates of the results.

To turn for a moment to the more technical aspects of the subject I should like to add a few words as to anæsthesia and technique of operating. I have used chloroform, open ether, ether by intravenous infusion, and local analgesia.

There seems to be a strong current of feeling at the present day against the use of chloroform in these cases, and I must admit that I have been influenced by it. There can be no doubt that the drug is more toxic than ether, and I feel that we are not justified in adding any risk, however small, to those necessarily contingent upon the operation. Still, I should like to say that in all my earlier cases chloroform was used and gave satisfactory results in some of the severest. The pulse-rate practically always diminished during the anæsthesia. Of course, such an anæsthetic should never be given except by the most accomplished expert, and I was fortunate in having for the most part the assistance of my friend Dr. Herbert Scharlieb. Ether by infusion I do not regard as presenting any considerable advantage except possibly in the elderly where pneumonia is to be feared.

At present I rely entirely upon ether by the open method in combination with atropine, morphia, and scopolamine, and in certain cases upon local analgesia. In connexion with the use of ether I should like to lay stress upon the importance of the preliminary atropine and upon the anæsthetist satisfying himself that this drug is acting before he begins the anæsthetic.

With regard to the actual operation, the choice of the time for its being done is in my opinion very important. I do not, however, acquiesce in the view that has been expressed that the patient should be submitted to several months' medical treatment as a preliminary. After all, this merely means watching the course of the disease for such a period, and I think that after some experience one can estimate the type of the disease and the course it is likely to follow without an expenditure of time so discouraging to the patient. As to the existence of an acute exacerbation, I should not hesitate to operate at such a time if I thought the patient's life was being endangered by the condition, though as a general rule it would be better to wait. Bronchitis, tonsillitis, and acutely inflamed cervical glands which are common complications I regard as absolutely contra-indicating operation for the time.

I have come to regard the mental state of the patient as perhaps the most important feature of the case in prognosis both as to the danger of operation and as to the final result. All the patients are nervous—that is, of course, part of the disease; but not all are frightened, and the really frightened patient is the most dangerous of all. To explain this, I do not think it necessary to invoke the changes in the cerebral cells of frightened animals described by Crile. A much simpler explanation seems to me available. Fear acts by precipitating an access of tachycardia during which the pulse-rate is perhaps uncountable for hours. In such circumstances the anæsthetic does not produce the usual steadying of the pulse, and the shock of the operation or the least amount of cyanosis from laryngeal spasm may be fatal. It is in these cases that the modern method of ether administration is so valuable. In hospital nowadays in my cases the patient is always anæsthetised in bed in the ward.

In the actual operation itself speed is no doubt valuable, but it is much less important than gentleness of manipulation which is absolutely indispensable. A large incision is essential to give easy access to the gland, and any kind of pulling is to be strictly avoided. In getting out the upper pole traction is very easily transmitted to the superior laryngeal nerve with the immediate result of causing laryngeal spasm and cyanosis—a most dangerous complication. Drainage is sometimes necessary when the anæsthetic is ether, to allow of the escape of blood. Otherwise I never use it, and I have not seen the slightest evidence that the thyroid secretion can cause symptoms by being absorbed from the wound.

The operation done in my cases has always been a partial thyroidectomy, usually the removal of one lobe and the isthmus.

The chief causes of death are shock during or immediately after the operation, an exacerbation of the disease within the next 24 hours, or pneumonia in the first week. I have lost two cases from shock, one from an acute exacerbation and one from pneumonia, and I am convinced by the study of that experience that the danger of the occurrence of such complications can be greatly reduced. This is to be effected by adequate mental and physical preparation of the patient, the choice of the best time for operating, the right anæsthetic for the given case, and the most careful avoidance of any traction upon or crushing of the gland. Such conclusions have been entirely borne out by my later experience.

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"ACHING THROAT." [1]

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IT is known to us all that there are certain affections of everyday occurrence which, while not having the immediate destructive effect upon life which appertains to the various forms of malignant disease, yet in a way have considerable importance, since by their persistent character and worrying nature they, as it were, gnaw their way into the comfort and happiness of their unlucky victims, constantly obtruding themselves on their consciousness and interfering with their pleasures like spectres at a feast. To one of these I have given the name of "aching throat," and I have decided to submit to your notice and consideration a few facts concerning it, because, although from childhood upwards we are all familiar with "sore-throat," yet aching throat, although more troublesome because more permanent, has not, I think, for some reason received the amount of attention it deserves.

The patients who come complaining of this trouble have generally arrived at, or are approaching, middle life, and the aching may vary very considerably in degree and somewhat in character. On examination they may be found to have the signs of chronic pharyngitis, with swelling, congestion, and catarrh, hypertrophy of the pharyngeal bands and granular patches, associated with coughing, hawking, and other efforts, varied and anomalous, some voluntary, others reflex, to clear the throat. Also there may be associated with it enlargement of the post-nasal, faucial, and lingual tonsils, the first least, the last most commonly, or nasal obstruction and discharge, also enlarged veins, bad teeth, and enlarged glands. All of these I have observed, but not one of them is pathognomonic, for in some of the worst cases one comes across they are absent. It is a somewhat curious fact, at least as far as my experience goes, that those cases of pharyngitis with swollen deeply congested pharynx, soft palate and uvula, with great irritability and excess of mucus, such as one sees often in persons indulging in excess of alcohol and tobacco, are but seldom troubled with aching throat, though dryness may be a marked symptom, and, on the other hand—indeed, in some of the worst cases—I have seen the pharynx when examined show very little or no evidence of disease at all.

As regards general condition, these patients are sometimes anæmic or their history or other parts of the body point to gouty or rheumatic tendencies; much more commonly, however, the patient suffers from dyspepsia of the flatulent variety which may have to be carefully inquired into, for if simply asked whether or no he suffers from indigestion the patient generally replies in the negative, as he has neither abdominal pain nor vomiting, but is distended with wind,

[1] A paper read before the Medical Society of London on Feb. 12th, 1912.

the belching up of which gives him considerable relief. In taking the history of these patients it is necessary to carefully analyse their feelings, or one of the cardinal signs may not be elicited—viz., that the aching, instead of being increased by swallowing food, as is the case in sore throat, is diminished thereby, as though the bolus in some way soothed and comforted the parts; swallowing liquids, however, may increase the aching.

In trying to throw some light on this symptom of aching throat, it will be well to first shortly consider two points—viz., the nerve supply to the naso-pharynx, pharynx, and upper part of œsophagus, and the vagueness of the sense of locality in this region.

Briefly taking the nerve supply first:—From above downwards, we find the posterior and external branches of the spheno-palatine ganglion of the superior maxillary together with the pharyngeal nerve and Vidian; the inferior maxillary by its various branches sensory and motor, the facial to certain muscles used in swallowing, the glossopharyngeal by numerous branches both muscular and to the mucous membrane, the pneumogastric, together with the spinal accessory, pharyngeal and laryngeal branches to mucous membrane and muscles of the throat, also to the external auditory meatus and œsophagus; the hypoglossal to the muscles of the pharynx, also the upper cervical spinal nerves and the sympathetic.

As regards sense of locality, one notes in the naso-pharynx and pharynx a vagueness which may be misleading. For instance, when one passes the Eustachian catheter through the nose in the ordinary way for deafness, and the point impinges on the orifice of the Eustachian tube above the palate, the patient is apt to point to a spot below the angle of the jaw and say that he feels it sticking in there. Again, this vagueness is well illustrated by the common incident of one's having to search for a bone sticking in the throat when the foreign body is generally found in quite a different part from that to which the patient had drawn our attention.

Also, how often we find pain due to disease of the throat referred to the ear. And patients suffering from malignant disease of the lower end of the œsophagus sometimes refer their discomfort to the cervical region, and I myself have had a case in which the chief symptoms were aching and unpleasant sensations referred to the throat and wasting. In this woman examination of the pharynx and œsophagus by the direct method showed nothing abnormal, but the patient died with disease of the liver.

I think, therefore, we may say without fear of contradiction that we have in this region not only an exceedingly rich and varied nerve-supply, but also find here a marked tendency to refer sensations to other areas than those actually stimulated.

One would like first to mention here that one knows very well that there are those who are inclined to somewhat pooh-pooh these cases and dismiss them under the general term "neurotic," and consider the aching allied to the constricted feelings of the throat and the lump rising or globus hystericus of true hysteria, but I cannot admit this explanation as satisfactory, for although aching throat may, of course, occur in a neurotic subject, and this explanation is apt to cross our minds if we find nothing locally, yet in the great majority of cases further examination fails to reveal other signs of hysteria.

Again, I would disassociate from the subject under discussion the aching pain felt by those who use their voices largely, such as teachers, clergymen, lecturers, public speakers, singers, and the like, and in whom it is associated with more or less hoarseness, as this seems allied to the so-called muscular aching from which many persons suffer after the immoderate use of any muscle in the body, leaving aside the question as to whether the pain be actually in the muscle itself or not; for aching throat occurs commonly in those who are not large voice users at all. On the other hand, they often complain that the aching is much worse when they get tired, using the term in the general sense. Here are some short notes of illustrative cases, private and hospital.

CASE 1.—The patient, a domestic servant, aged 34, attended hospital complaining of aching throat. She had six months previously suffered from tonsillitis, but volunteered the statement that this was quite a different pain from that which she had then, and noticed that taking food, instead of aggravating it as it did before, now gave temporary relief. On examination the throat looked anæmic, but beyond a slight enlargement of the faucial tonsils nothing else abnormal could be detected. Bowels very constipated. After advice as to diet and regulation of the bowels marked improvement took place, and patient ceased to attend.

CASE 2.—A healthy looking man, aged 40, came complaining of discomfort in the throat which he described as being of an aching and burning character. Asked as to its position he located the site of maximum intensity as being about the situation of the thyroid cartilage, but sometimes extending up to the ear and down to the sternum. On examination it was noted that the teeth were very much decayed and some granular patches present on the pharyngeal wall. Post-nasal space normal. Subsequently an examination by the direct method was made, but no abnormal appearances could be detected in the lower part of the pharynx or œsophagus. He suffered largely from flatulence, and belching gave some relief to the pain. No pain or difficulty in swallowing solid food, which gave immediate temporary relief. Liquids, however, he stated seemed to increase his discomfort. Advised to seek the assistance of a dentist and ordered a mixture containing rhubarb and soda. Reported later that he had been better for a time, but that the pain had returned. The granulations on the pharyngeal wall were now cauterised with the galvano-cautery, and when last seen he was free from the aching.

The next case does not, strictly speaking, belong to this category, but is introduced because of the side light it throws on the subject.

CASE 3.—A man, aged 45, came complaining of pain in the throat, sometimes of an aching, sometimes shooting in character, the seat of maximum intensity being in the region of the lesser cornu of the hyoid bone on the left side. No pain on swallowing, no symptoms of indigestion, no flatulence. Patient had previously tried numerous remedies and had the galvano-cautery applied to the pharynx, but the aching, though intermittent, never disappeared. On making a careful examination of the floor of the mouth I found a small salivary calculus in Wharton's duct, after the removal of which the pain permanently disappeared.

Since this occurrence I have made a point of examining carefully the floor of the mouth in all cases of aching throat, but in only one other case—viz., that of a lady about 50 years of age—have I ever succeeded in detecting anything in the shape of a salivary calculus.

CASE 4.—A man, 52 years of age, who had been abroad a good deal and had had malaria, complained of aching and throbbing feelings in the throat, and referred to the back of the palate as the seat of its maximum intensity, but he was somewhat vague on this point. He admitted that he suffered from indigestion and flatulence. On examination of the mouth and pharynx nothing abnormal was detected, nor did posterior rhinoscopy reveal any abnormality, though the airway through the nose was much interfered with by a deviated septum. The bowels were regulated and the indigestion treated with partial relief. Later on the nasal stenosis was relieved by a submucous resection operation, after which he expressed himself as feeling all right and ceased to attend.

CASE 5.—A housewife, aged 52, came complaining of trouble, some aching in the throat. She was very much worried by the pain, which she feared was due to cancer, from which her mother died. She swallowed food very slowly, and believed that certain articles of food made the pain worse afterwards, but she had no real difficulty in getting a bolus down. She got much flatulent distension and belching after food. Lingual tonsil enlarged but no other abnormality detected, nor did the direct examination of the œsophagus by means of Brüning's apparatus give evidence of anything pathological. Aperients and regulation of the diet produced improvement, but the case has shown marked relapsing tendencies.

Treatment.—I have already spoken of the local pathological conditions which I have found at different times associated with aching throat, but except, of course, in such a case as calculus I would strongly advise the avoidance of radical treatment in reference to these in the first instance; I think it better to be content with the ordinary cleansing nose washes, sprays and gargles containing chloride of sodium, biborate of sodium, and the bicarbonate, boric acid, potassium chlorate, and the like, for operation may prove disappointing in results both to surgeon and patient, and should therefore not be lightly undertaken nor advised since we cannot promise that removal of, say, a much enlarged lingual tonsil will cure aching throat, any more than the removal of polypi and other morbid conditions in the nose can be guaranteed to cure asthma.

At the same time one must give proper attention to general pathological conditions such as anæmia, though I must admit that the administration of arsenic and iron after due regulation of the bowels has not given the results hoped for as regards the throat discomfort, but has, in fact, been decidedly disappointing. I must say the same though in a less degree as regards medicines which have been found to give relief in gouty conditions—e.g., colchicum, piperazine, and salts of lithium and potassium, such as the citrate and bicarbonate.

As regards rheumatism, the fact that the pain closely resembles that which occurs in muscular rheumatism, and also since it has been repeatedly shown not only that acute pharyngitis and tonsillitis are often markedly benefited by anti-rheumatic remedies such as salicylate of soda and aspirin, but also that these diseases are often the immediate forerunners of acute rheumatism, one would be led to reasonably expect that these remedies would give relief in aching throat, but they have failed to do so in my hands.

On the other hand, a very large proportion of patients do

suffer, and have suffered, from chronic dyspepsia, and the appetite is commonly deficient, though occasionally it is the opposite. Although actual abdominal pain and vomiting are not common, retching frequently occurs with feelings of oppression and depression after food and eructations and distension with gas. The tongue may present morbid appearances, and a disagreeable taste is often present. Constipation is very common, diarrhœa rare.

What the exact relationship of aching throat is to this condition it is difficult to say, but that it is a very close one I am quite certain, and the best results are to be obtained by suitable treatment to the digestive organs, supplemented in some cases by operative treatment on the throat and nose.

In order to relieve the dyspepsia, first of all the teeth must be examined, and the patient referred to a good dentist if necessary. The diet must be inquired into and corrected. As regards the vexed question of alcohol, it certainly seems in some cases to bring on and in others to aggravate the aching, and I think, on the whole, these patients are better without it. I know of several cases in which washing out the stomach has completely relieved the aching, and consider it a most valuable form of treatment if not carried to excess.

Amongst the drugs which have proved most useful, gentian, calumba, strychnine, bicarbonate of soda, bismuth, magnesia, and charcoal are the principal. Constipation is very common and very troublesome, and if not relieved by careful dieting I have found the best drugs to use to be cascara, podophyllum, and sulphur; also small doses of mercury followed by a saline aperient are valuable. As a means of giving temporary relief massage is useful, and so is the galvanic current, but as permanent curative agents both are disappointing.

Smoking, if in excess, of course must be forbidden, but I have not been able to convince myself that moderate smoking was in itself a cause of aching throat, and certainly many women suffer from it who do not smoke at all, and one finds a good many patients who are anxious to get well and willingly abstain entirely from both tobacco and alcohol, and yet the pain continues.

In conclusion, to summarise matters a little we may say that experience has shown that aching throat is more commonly associated with flatulent dyspepsia than anything else, and this seems to act either by the formation of toxins, or possibly the aching may be a referred pain, such as that which occurs in the ear so commonly in disease of the larynx and upper part of the œsophagus. There may also, however, be local conditions which, if they do not actually cause, certainly accentuate aching throat; these must be sought out and dealt with in obstinate cases, not forgetting that the condition of the nose and accessory sinuses has a very distinct bearing on the state of the pharynx, as also have the teeth.

I will finish with one word of warning—viz., only after very careful examination must we arrive at our conclusions as to the cause of aching throat. To overlook malignant disease is disastrous.

Cavendish-place, W.

CENTRAL MIDWIVES BOARD.—A meeting of the Central Midwives Board was held on Feb. 22nd, at Caxton House, Westminster, with Sir Francis H. Champneys in the chair. Letters were considered from the superintendent of the Rescue and Maternity Homes, Moss Side, Manchester, and from Dr. C. W. Brown, of Manchester, asking that candidates whose certificates of attendance on cases and attendance during the lying-in period are not signed in accordance with the existing Rules may nevertheless be admitted to the next examination. The Board decided that the superintendent of the Rescue and Maternity Homes and Dr. Brown be informed that the candidates cannot be admitted to the examination, their schedules not having been signed in accordance with the Rules. Letters were considered from Dr. W. J. Howarth, county medical officer of Kent, reporting the suspension of two midwives for a period in excess of 24 hours, with the special circumstances in connexion with the cases. The Board directed that Dr. Howarth be thanked for his communications, and that he be informed that the action taken is approved by the Board. A letter was considered from a certified midwife inquiring as to the antiseptics to be used for cleansing the infant's eyelids as prescribed in Rule E, 2 (b). The Board decided that the reply be that the Board has designedly refrained from prescribing the use of specific antiseptics.

FURTHER EXPERIMENTS ON THE TREATMENT OF INOCULATED RAT SARCOMA AND OBSERVATIONS ON CERTAIN ACCOMPANYING BLOOD CHANGES.[1]

BY HELEN G. GRÜNBAUM, M.D. BIRM.,
AND
ALBERT S. GRÜNBAUM, M.D. CANTAB.
(*From the Department of Pathology of the University of Leeds.*)

IN a previous communication[2] we published the results of some experiments on the treatment of malignant disease in rats and mice, showing that by the injection of antivenom (horse) serum it was possible to effect regression of inoculated tumours in rats provided they did not exceed 1·5 cm. in diameter. We have found since that by the simultaneous administration of adrenalin with the antivenom serum (Pasteur Institute) yet larger growths can be made to disappear in these animals.

In this second series of 77 tumours there have been many which reached or exceeded 2 × 1 cm. in size. An idea of the relative size of such a tumour may be gained from the fact that the average weight of the animals used has been 40 grammes, and of the tumours 8 grammes—that is, a tumour equal to one-fifth of the body-weight may be cured.

Of these 77 tumours, 34 of the largest at the time of starting the experiment have been treated, while 43 were kept as controls. Of the 34 treated, 24 were cured, 3 became larger, while in 7 the animals died before the conclusion of the experiment. Of the 43 control tumours, only 8 regressed, the remaining 35 increased in size, while 12 animals died before the conclusion of the experiment. In other words, while 70 per cent. of the treated tumours regressed, only 18·6 per cent. of the untreated tumours did so, although the original selection of small tumours as controls placed them in a more favourable position for regression. Consequently there can be no doubt as to the effect of treatment. Moreover, in the untreated animals metastatic deposits were common, but in none of the animals which died while still under treatment were any metastatic deposits found.

There is a marked naked-eye difference between a treated and an untreated growth. The treated tumour is composed mainly of a necrotic core with only a narrow margin of tumour tissue proper. The width of this bounding layer depends upon the size of the tumour and the duration of the treatment. Of course, necrosis occurs also in the centre of many untreated tumours, but growth continues at the margin, so that there is always an increasing area of tumour tissue in growing tumours.

The facts mentioned above and in our previous communication, made it likely that there would be some difference in the hæmolytic content of the blood against cobra venom in susceptible and refractory animals respectively. We find that the anti-hæmolytic power of tumour-bearing rats is considerably less than that of refractory animals. Further, in uninoculated animals, it is possible by an examination of the anti-hæmolytic power of the blood to foretell with a considerable degree of accuracy whether on inoculation with sarcoma they will or will not "take." The method of our procedure will be given in detail in another paper, but we may mention here that inactivation of the serum to be tested is essential. Conversely, by diminishing the anti-hæmolytic power of otherwise refractory animals it is possible to render some of them temporarily susceptible—in one instance even after ten previous unsuccessful inoculations with the same tumour.

In the human subject the results are not so unequivocal. Infective conditions seem often to be accompanied by a considerable loss of anti-hæmolytic power to cobra venom, and all we can say is that serum from cases of sarcoma also assists hæmolysis, while that from normal individuals tends to inhibit it. This similarity with infective conditions may have a suggestive significance.

To summarise: 1. By an extension and modification of

[1] Part of a paper read before the Leeds and West Riding Medico-Chirurgical Society on Feb. 16th, 1912.

[2] THE LANCET, April 1st, 1911, p. 879.

previously described treatment it is possible to cure large inoculated sarcomata in rats in about 70 per cent. of cases. 2. The blood of "positive" animals with tumours does not prevent, but appears to assist, hæmolysis by cobra venom in vitro. 3. The blood of "negative" animals inhibits the hæmolytic action of cobra venom in vitro. 4. The blood of uninoculated rats, by the occurrence of inhibition or the reverse, indicates whether the animals will be refractory or susceptible to inoculation. 5. The blood of normal human individuals also possesses inhibitory properties, and these have been diminished in all the cases of sarcoma examined up to the present.

Note.—Since this paper was read one human inoperable recurring sarcoma has shown marked diminution in size and relief of symptoms under treatment.

Leeds.

THE TREATMENT OF TALIPES EQUINO-VARUS.[1]

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I INTEND considering with you to-day some methods of treating cases of deformity of the foot termed talipes. It is unfortunately a condition which is distressingly frequent, particularly calling for energetic treatment in hospital patients. Unfortunately, it is often associated with infantile paralysis, anterior poliomyelitis, so that it is impossible for us to reconstruct a perfect foot. All that can be done is to make the best of a "bad job."

In order to do this we must remember that the foot is of use in standing, walking, running, &c. This being its main function, the appearance of the "pretty, dainty, little foot" is very secondary and comparatively unimportant. Our aim and object should be in consequence to give the patient a serviceable foot upon which he can stand, walk, or run. Anything short of this is tantamount to imperfect success or failure.

There are, I think, two points in the treatment of talipes upon which all are agreed: the younger the age at which treatment is begun the better the chances of success, and that the treatment of talipes must not be short but must extend over a long period of months and years. Those who have most success in these cases are the surgeons who see and follow their patients for years; not those who do an operation and no more. This is in itself a very great difficulty, because every surgeon's hospital constitutes the great mine from which he extracts practice and experience; whilst at the same time it is very difficult, or almost impossible, to follow a hospital case for more than a short time. In consequence, our knowledge of the advantages and benefits derived from various modes of treating cases of talipes is largely deficient in evidence derived from cases years after treatment has been commenced. In consequence it is my intention to review before you such results as are obtainable.

Before doing so I would point out that it is right in a lecture delivered at a children's hospital to consider the treatment of growing subjects. In them the objective of all treatment is easily stated. It is to enable the foot to be used in the best way possible as a foot. For the treatment of deformities in growing subjects to be successful it must give a useful functional part, so that the constituents of the part grow under proper and normal functional conditions, such growth improving the part. But if treatment fails to give a good functional part, then the constituents of the part continue to grow under abnormal and improper conditions, their growth adapting itself to these abnormal conditions and making the deformity worse rather than improving it. The success of an operation lies in the ultimate usefulness of the part.

Massage, movement, and manipulation.—There is no doubt that this method forms the basis of all treatment for talipes. For its rationale and success it depends upon the concurrent growth of the constituents of the foot, the massage, movements, and manipulations making the ligaments, bones, and tendons adapt and fashion themselves properly as they grow, somewhat like a stick fixed in the ground enables a scarlet runner to grow properly. Thus by constant care, massage, and exercises the growth of the foot enables it to be moulded to the proper condition. If massage and exercises are neglected the growth of the foot continues under abnormal conditions and is, in consequence, improper, as is that of the scarlet runner which is not trained up a stick.

Amongst patients in the upper classes this treatment can be carried out thoroughly, but amongst hospital patients it will not be carried out. Losing in consequence the basis or backbone of treatment, it is obvious that hospital cases have to be treated differently from those patients in whom massage and exercise can be thoroughly done.

Massage, movement, and manipulation, aided possibly by such minor proceedings as tenotomies, form the basis of treatment for the first one to two years of life. If this treatment has been well carried out, and it is not a bad paralytic case, the child may then be able to get about properly on his feet. The subsequent growth of the feet, since he can use them properly, will also be proper, and complete the cure. But, as is so often the case amongst the poorer classes, massage, movement, and manipulation have not been successful in giving the child a foot on the sole of which he can walk. Then when the child has reached such an age as he can be taught to walk, it is the duty of the surgeon to give him a foot upon the sole of which he can walk. If this is done the subsequent growth of the foot will render the improvement permanent. But if the surgeon fails to give the child a foot on the sole of which he can walk, the case will not improve but go to the bad.

Cases must be most carefully watched even after apparently successful operations. How often do apparently successful cases come back after two to three years with the talipes imperfectly corrected. It can only be reiterated that the treatment of cases of talipes must be extended over years and not confined to the period of the operation. Success is attained by constant care, not by occasional treatment.

Tenotomies.—All tenotomies must be regarded as auxiliary proceedings which are not ends in themselves. The tendo Achillis is the tendon which is most often divided. Of late years it has been shown that the earlier movements and massage are begun in the treatment of fractures the quicker the recovery and the better the result. Recovery of power is often slow after tenotomies, so that it is often better to do the little operation of tendon-lengthening. The recovery is then quicker and more complete.

It must be clearly understood that all tenotomies and tendon-lengthenings are of no avail if not supplemented by other treatment. They are small and comparatively unimportant measures, merely accessory to the long treatment by massage and exercises.

Neurorrhaphies.—There is far too little known about nerve anastomoses in these cases for it to be possible than to do more than mention the method.

Tendon-graftings (tenorrhaphies).—This is one of the most useful and beneficial means of treating suitable cases of talipes. In the most successful class of cases the outer part of the tendo Achillis is attached to the peronei muscles. But two words of warning must be given: firstly, immediate and decided improvement must not be expected, even two years may elapse before success is attained; secondly, like tenotomies, tendon-graftings are merely adjuvants, so that treatment by massage and exercises must be persevered with throughout.

Osteotomies.—The only osteotomy at all often employed is one in which the tibia is divided horizontally just above the lower epiphysis. The fibula is then broken. The foot can then be rotated on the shaft of the tibia into the proper position it should occupy. Thus in talipes equinovarus with inverted adducted foot the toes can be turned out. Like tenotomies and tenorrhaphies this osteotomy is merely an adjuvant to the general treatment.

Ostiectomies.—This is not a pretty word, but it is merely meant to imply those operations in which bones are removed. Personally I regard them as most important means of treating talipes. For if the deformity has existed long enough for the bones to have become deformed, which is almost always so, as skiagraphs show us, there are then only two methods of reducing the deformity: either slowly, by the action of growth under treatment by massage and movements, or

[1] Based on a lecture delivered at the Children's Hospital, Great Ormond-street.

quickly, by means of an operation on the deformed bones. In hospital patients it is usual to prefer this latter method for reasons already stated.

Naturally our first inquiry is which tarsal bone is most affected, because towards such a bone we must first direct our attention. The answer to this question is decisive. The astragalus is deformed beyond all other bones of the foot. The most successful operations for talipes are directed to it. The neck of the bone has been divided, an osteotomy, with disappointing results. The head of the astragalus has been excised and the results ascertained to be unsatisfactory. The whole astragalus has been excised, and for a time this gave great satisfaction. But the ultimate results have been unsatisfactory, and the unsatisfactory foot perfectly typical. The foot was curved, the toes pointing inward, with a tendency for the calcaneum to turn under the tibia and lie on its outer side. From the functional point of view these were useful feet; but from the cosmetic point of view they failed.

The operation was extended and the anterior third of the calcaneum removed with the astragalus, and the foot put up in plaster in good position. The remote results of this proceeding were better than from an astragalectomy alone. But yet a further improvement was introduced. It was obvious that by preserving the ankle-joint a better functional foot could be secured. This was done by removing the head of the astragalus, the anterior part of the calcaneum, and the contiguous parts of the scaphoid and cuboid until the foot could be placed in good position. The results were disappointing, the probable explanation being that the mid-tarsal joints were destroyed. A return was therefore made to the removal of the astragalus and front part of the calcaneum, in which the ankle-joint and the mid-tarsal joints are thrown into one, rather than destroyed. In the present state of my experience and knowledge, I have found that this operation yields the best anatomical and physiological result in a foot the subject of the deformity of talipes equinovarus.

There remains a superlatively important item in the treatment to be mentioned. Massage, manipulation, and movements must be continued, in addition to standing, walking, running, skipping (with boot and irons if necessary); and the case watched for some years or until growth ceases and a satisfactory result is assured. Wrenchings under an anæsthetic, plaster-of-Paris splints, tenotomies may be required, and all idea that the big operation was final or that the need for these secondary operations reflects discredit on the original operator banished from the doctors' and relatives' minds. It is constant care and constant operations which bring about good results. Anything short of this is deservedly unsuccessful.

In conclusion, let me remind you that the period of life in which all deformities are most satisfactorily treated and corrected is that of childhood when rapid growth and active tissue changes are taking place.

Harley-street, W.

THE VALUE OF PNEUMOCOCCUS VACCINE IN THE TREATMENT OF PNEUMONIA.

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I THINK all of us agree that there is something more to elucidate regarding the exact pathology and treatment of the pneumococcal infections. When we are called upon to attend a patient suffering from pneumonia we instinctively feel a sense of danger for the patient and a feeling of great uncertainty regarding the result. Even if all the symptoms are favourable and the patient feels comfortable we as doctors have anxious moments until the welcome crisis comes and the virulence of the attack has spent itself. The man who has the best chances of recovery from acute pneumonia is he who has a sound circulatory system, which of course includes sound heart, muscle, and reasonably elastic blood-vessels. I have, however, long been of the opinion that we are still as a profession at a disadvantage in the treatment of this virulent disease, and our ordinary methods are not sufficient for the attack. We require some weapon which will destroy the virulence of the pneumococcus and its products and produce a rapid immunity in the blood against it.

Naturally, we turn to some remedy which has been prepared from pure cultures of the pneumococcus of Fraenkel, and it must be either in the nature of a vaccine or a serum. It has been found extremely difficult to prepare a serum from the pneumococcus on account of the insusceptibility of animals to true pneumonia. A vaccine to be potent ought to be autogenous—that is, it ought to be prepared from sputum or blood of the patient himself; but this is a matter of great difficulty, as the disease being of such an acute and short duration has either subsided or terminated fatally before the vaccine can be got ready, and it might be borne in mind that to be of real value the vaccine must be injected early in the illness; in fact, if it can be used on the first or second day it acts at times almost miraculously. If we have to wait until the fourth or fifth or sixth day when there is a general pneumococcic blood-stream infection the vaccine is of little value, and seems to exert little or no influence on the course of the attack.

We are thus compelled to use a stock vaccine or a homologous vaccine prepared from a pure culture of pneumococci isolated from the blood of a patient suffering from lobar pneumonia. In this we are at a great disadvantage, because the strains of pneumococci vary considerably in their virulence and characteristics, so that we are not certain that we are using a vaccine prepared from the same infection as that with which we are dealing. In spite of this disadvantage, however, the results with a stock vaccine are most valuable, and in cases in which I have used vaccine for pneumococcal infections the encouragement has been so great that I will certainly persevere with it in every case.

The total number of cases of pneumonia in which we have used vaccine during the last two years has been 207, the great majority of them being treated in hospital. This number does not represent all the cases with which we have had to deal, as in some simple cases without any complication it was not found necessary to resort to vaccine treatment, whilst in a great many advanced cases which were obviously dying on admission to the hospital it was not considered desirable to administer it. I have, however, included in this list all the cases in which it was given, so that the results may fairly represent the value of the treatment. I must,

Table showing Results of Treatment in 207 Cases of Pneumonia.

Age.	Cured.	Died.	Total.
Between 1 and 10 years	28	2	30
,, 10 ,, 20 ,, ...	30	6	36
,, 20 ,, 30 ,, ...	31	4	35
,, 30 ,, 40 ,, ...	25	5	30
,, 40 ,, 50 ,, ...	42	8	50
,, 50 ,, 60 ,, ...	16	6	22
,, 60 ,, 70 ,, ...	1	3	4
	173	34	207

All the above cases were treated with vaccines (except two which had serum). Death-rate a little over 16 per cent.

however, say that after my experience with vaccine it has been found extremely difficult to estimate accurately the true value of the treatment, for the simple reason that we can never be certain that a case would not have recovered without its use, hence we can only be guided by our general impressions and observation of the clinical course after each injection. It is not necessary here to review the general treatment which was prescribed for each case; suffice it to say that each case was treated on orthodox lines, with the treatment of special symptoms as they arose, and where necessary alcohol was always freely given. In cases where pain was a symptom fomentations and poultices were applied and in no case was an icebag used. Temperature was always reduced with tepid sponging, whilst in cases of sleeplessness and mental irritability we found great relief with small doses of omnopon either given by the mouth or hypodermically.

Dosage.

The usual dosage recommended by some writers is from 10 to 50 million with half the amount for children. In my opinion these doses are too small, and to get the full effect of the vaccine it is necessary to give it in larger doses and at the earliest possible moment after the onset of pneumonia.

We usually commence with an initial dose of 50 million, followed in 24 hours, if necessary, by another injection of 100 million, and in some cases we have even given 150 million, with apparently excellent result. I consider the question of dosage by far the most important of all, and as the result of a large experience I am convinced that the vaccine itself is harmless, and I have never noticed anything but a good effect from its use. There can be no question that in a certain proportion of cases it appears to have no effect, and does not seem to influence the progress of the disease one way or another. On the other hand, in a great many cases an injection of a large dose is followed by a feeling of comfort and relief, associated with a rapid fall in the temperature and slight improvement of perspiration.

Effect on Crisis.

The administration of vaccine does not seem to have any appreciable effect in hastening the crisis in an ordinary case of pneumonia. The old teaching that pneumonia is a self-limited disease seems still to be true, and I cannot say that I have observed any shortening of the period of fever after the use of vaccine or serum. There is frequently a sudden drop of two or three degrees after a large injection of vaccine, constituting a sort of pseudo-crisis, but unfortunately after a few hours the temperature again rises until the true crisis appears. It seems to be necessary before a crisis occurs that a sufficient amount of anti-pneumotoxin should be formed in the blood to exactly counterbalance the amount of pneumotoxin.

The effect of vaccine on the pulse is always good, often reducing it in an hour by 30 or 40 beats, but in a few cases in which the blood pressure was taken no appreciable difference was observed.

Other Pneumococcal Infections.

Following the general rule of vaccines, we would expect to find better results in more or less subacute or chronic pneumococcal infections than in virulent pneumonia. I have only used vaccine in one such case—viz., a general pyæmic condition with numerous abscesses in many parts of the body, following an attack of lobar pneumonia. Undoubtedly we observed excellent results follow each injection and an apparently hopeless case was transformed into a complete cure.

The delirium which so frequently accompanies pneumonia of the apex is possibly explained by the direct lymphatic extension to the brain of a localised pneumococcal meningitis, and we have observed that in such cases the administration of vaccine is nearly always followed by diminution of delirium and a tendency to natural sleep, but often only of a temporary character. It would seem to me that the ideal treatment of pneumonia would be by means of an anti-pneumococcus serum, but so far we have not succeeded in obtaining one, owing to the difficulty in immunising an animal. I believe, however, that if the serum of a patient who has just had a crisis could be obtained in sufficient quantity it would act as a true antitoxin in a case of pneumonia, exactly as in the case of diphtheria.

In conclusion, I would like to mention that we have observed a notable absence of complications in those cases treated by vaccines. I do not wish to lay too much stress on this observation, but it is a fact that out of the whole 207 cases not a single empyema has resulted.

I am convinced that we have in pneumococcus vaccine a valuable aid in the treatment of pneumonia, and although not a specific remedy it ought always to be used in those cases of a virulent type which threaten the life of a patient.

I have to express my indebtedness to my colleagues, Dr. G. E. Williamson and Dr. G. W. N. Joseph, for their valuable help.

Liverpool

LITERARY INTELLIGENCE. — Messrs. Baillière, Tindall, and Cox announce for publication the following: "Acromegaly; a Personal Experience," by Leonard Mark, M.D., which will contain portraits and anthropometric data showing full course of the disease in a typical case; "The Treatment, Prevention, and Cure of Tuberculosis and Lupus with Allyl Sulphide," by W. C. Minchin, M.D.; and a new edition of Sir William Whitla's "Dictionary of Treatment."

Clinical Notes:

MEDICAL, SURGICAL, OBSTETRICAL, AND THERAPEUTICAL.

A FATAL CASE OF PROLONGED TOXIC COMA LASTING NINE DAYS.

BY I. C. MACLEAN, M.D. LOND.

THE patient, an unmarried woman, aged 41, who had been in the habit of taking veronal in from 7 to 10-grain cachets from a medical man's prescription for the last four years, inadvertently swallowed 90 grains one day at about 10 A.M. She was not seen by me till 3.30 P.M., when I found her in a state of profound coma; pulse 80; respiration 22 and stertorous; slight corneal reflex and knee-jerks were present. I washed out her stomach, which was found empty, and gave her 4 ounces of strong coffee with 2 ounces of brandy, also strychnine hypodermically. All reflexes had disappeared next day and she remained comatose, only recovering partial consciousness in the last 36 hours, when she made feeble attempts to swallow, recovered the use of her facial muscles, and moaned faintly in response to questions. She died with symptoms of acute broncho-pneumonia and acute hæmorrhagic nephritis on the ninth day. I bled her on two occasions, 1½ pints the first night, infusing 2 pints of saline solution intravenously, 1½ pints the second evening with 3 pints of saline solution intravenously, and I gave a third infusion of 2 pints of saline solution on the fifth day. Six-hourly feeds of 8 to 10 ounces were given with the œsophageal tube, the stomach being washed between each feed, which, consisting chiefly of a diluted mixture of milk, Valentine's meat juice, and brandy, was usually absorbed. Saline solution per rectum was occasionally given also. Great care was exercised with regard to oral cleanliness and I had the help of two excellent and attentive nurses; in spite of this, however, towards the end the upper air passages became very foul. Various stimulants were used at intervals—brandy, strychnine, pituitary extract, and digalen—while oxygen was administered freely. The temperature, which was subnormal for the first two days, gradually rose, being highest on the seventh day (105·6° F.). The average urine drawn off for the first six days was 24 ounces in the 24 hours; on the last three days only 9, 6, and 3 ounces respectively. There were no convulsions. Towards the end fatty, hæmorrhagic, and granular casts were abundant, but no hæmatoporphyrin was detected. The infusion of saline solution was always followed by marked improvement of the pulse, respiration, and general condition, and up to the fourth or fifth day I had serious hopes of saving the patient.

Knightsbridge, S.W.

NOTE OF A CASE IN WHICH ONSET OF DIABETIC COMA SIMULATED APPENDICITIS.

BY J. S. B. STOPFORD, M.B., CH.B. VICT.,
SENIOR HOUSE SURGEON, ROCHDALE INFIRMARY.

AFTER reading an annotation in THE LANCET of Feb. 10th (p. 378) on Abdominal Pain as a Premonitory Sign of Diabetic Coma I thought a few notes on the following case might be of interest.

A boy, 12 years of age, was admitted to the Rochdale Infirmary at about 11.30 A.M. on Dec. 8th, 1911, having been sent in as a case of acute appendicitis probably requiring immediate operation. He had been suddenly taken ill during the previous night with pain in the lower abdomen which was so severe that he was compelled to flex both thighs. He suffered from flatulence and vomited once a little thick brown material which gave no relief. He passed flatus freely, and about three hours after the onset the bowels were moved and the motion was normal. The pain became a little easier after this, but he continued to have short attacks of very acute pain, chiefly in the right iliac region. The mother stated that up to 18 days ago the boy had never had a day's illness in his life, but about this time he began to

suffer from nocturnal incontinence of urine and complained of passing a very large amount of water.

On admission the patient looked acutely ill and appeared very drowsy. His face was "pinched" and quite "abdominal" in character. The whole body seemed wasted and the skin was noticeably dry and thin, and could be easily raised from the subcutaneous tissues. He complained of thirst and a nasty taste in the mouth, the tongue being dry and slightly furred. The pulse-rate was 120 per minute, weak, and of low tension; the respirations were 28; and the temperature was 97·4° F. The abdomen moved freely with each respiration, and there was no distension. The whole abdomen was tender on palpation, and this was most marked in the right iliac region, but no swelling could be felt. There was no tenderness in the loin, and nothing was found on examining per rectum. Within an hour of the time of admission the patient became more drowsy and the respirations became quite "sighing" in character. The drowsiness, the respirations, and the history given by the mother suggested the possibility of diabetes, and on obtaining a specimen of the urine shortly afterwards the specific gravity was found to be 1030, and sugar and diacetic acid were present. The boy was immediately put on large doses of sodium bicarbonate, both by the mouth and rectum, but in spite of treatment he sank into typical diabetic coma next morning and died 20 hours later. During the last 24 hours he had passed 80 ounces of pale urine containing 1400 grains of sugar.

At the post-mortem examination the appendix was found to be quite normal, and there were no macroscopic changes in the abdomen except some fatty infiltration of the liver and kidneys. Unfortunately permission was not granted to examine the brain, and through a mistake no microscopic sections were cut of the pancreas, &c.

This case illustrates extremely well how abdominal pain may be a premonitory symptom of diabetic coma and how necessary it is to make a systematic examination of the urine in all cases.

I am indebted to Dr. H. Harris, honorary surgeon to the infirmary, for permission to communicate these notes.

Rochdale.

NOTE ON A CASE OF FRACTURE OF THE LARYNX.

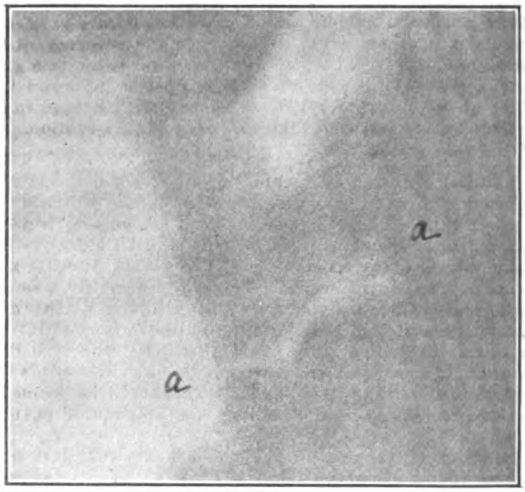
BY JAMES ANDREW, M.D. GLASG., D.P.H. CAMB.

FRACTURES of the larynx are fortunately extremely rare, and are usually the result of very severe violence caused by crushing or pressure directly over the cartilages. They are usually followed by very serious results, due, no doubt, to the extensive damage, not only to the cartilages, but also to the mucous membrane of the larynx. The following case is of interest, both on account of its exceptional causation and also because of its complete and rapid recovery.

On Oct. 9th, 1911, an engine driver, aged 43 years, called at my surgery complaining of pain in the throat and difficulty in swallowing. He gave the following history. On Oct. 6th he was following his usual occupation. While endeavouring to open the throttle of the engine he was seized by a violent attack of sneezing. He turned his head to one side, away from the fire-box, and immediately afterwards felt something "crack in his throat," and he could not sneeze owing to "cramp in the muscles of the throat." During the remainder of the day his throat was very painful, and he had difficulty in swallowing, but he was able to finish his day's work. On the 8th the pain was very severe, and he had great difficulty in swallowing. He complained also of salivation.

When seen by me on Oct. 9th there was no evidence of external injury. The neck appeared slightly swollen. The voice was husky, and swallowing was difficult and painful. Salivation was profuse. On lightly grasping the larynx between the finger and thumb and gently moving it from side to side, distinct crepitus was felt in the region of the thyroid cartilage, and I was of opinion that it was located in the right thyroid cartilage, though it was extremely difficult to define its origin exactly.

Dr. J. Walker Downie kindly examined the patient at the Western Infirmary, Glasgow, on Oct. 13th, and reported that there was crepitation on both sides of the pomum, chiefly at the lower border of the thyroid and upper border of the cricoid cartilages. He was of opinion that there was fracture of the cricoid cartilage. Two skiagrams were prepared, and from them it was seen that there was distinct fracture of the cricoid cartilage. There was also a line running obliquely across the thyroid cartilage near its lower border, which would seem to indicate fracture of that cartilage also (see figure).



Reproduction of skiagram of thyroid region. *a–a* indicates line of fracture.

The treatment consisted in wearing for 21 days a poroplastic splint moulded to the neck. During that time the pain in the throat completely disappeared, and the difficulty in swallowing and salivation gradually passed away.

The case is of interest chiefly on account of its causation. The muscles of the arms and chest were fixed in the man's endeavour to open the throttle of the engine, and in turning the head to one side he also fixed the muscles of the neck. The attack of sneezing brought the larynx into sudden contact with his collar, so that he fractured his larynx over the comparatively sharp edge of the collar.

I am indebted to Dr. Walker Downie and to Dr. W. F. Somerville, of the Western Infirmary, Glasgow, for report and skiagram of the case.

Coatbridge.

Medical Societies.

ROYAL SOCIETY OF MEDICINE.

LARYNGOLOGICAL SECTION.

Exhibition of Cases and Specimens.

A MEETING of this section was held on March 1st, Dr. STCLAIR THOMSON, the President, being in the chair.

The PRESIDENT exhibited: 1. A Larynx showing Epithelioma removed post mortem from a man aged 23. The case had been shown before the section a year ago, and attention was drawn to the early age at which the disease had appeared. 2. A case of Combined Tuberculosis and Syphilis of the Larynx in a woman. The patient had no physical signs in the chest, but the Wassermann test was positive, and tubercle bacilli had been found in her sputum. The larynx showed deposits of tubercle and syphilis each in typical form. 3. Double Abductor Paralysis in a man, aged 42, in whom a skiagram indicated a mediastinal tumour.

Dr. H. J. DAVIS showed a case of Double Abductor Paralysis in which he proposed to perform thyrotomy with the object of removing completely the left arytenoid and vocal cord. (A conflict of opinion arose in the discussion on the question of the advantages which such an operation would have over tracheotomy, the majority of the speakers expressing themselves as favouring the latter.) Dr. Davis also exhibited the following series of cases and specimens: 1. A Grain of Indian Corn which had been retained in the nose for

14 years. It had been expelled from the left nostril of a girl aged 19 2. A Foreign Body, a pearl collar-stud, impacted in the Glottis of a Child, aged 3. The larynx and trachea, with the stud resting *in situ*, its lower disc caught in the chinks of the ventricles, were exhibited. 3. Injury to the Larynx by Cut-throat in a man aged 41. The vocal cords had been destroyed, but a growth of granulation and cicatricial tissue had taken their place, and the patient was able to speak with a fair amount of phonation. 4. An unusual case of Functional Aphonia in a child aged 6. The loss of voice had followed tracheotomy at the age of two years. Faradisation and tonics had brought about a cure. 5 A Double Acute Frontal Sinusitis following influenza in a boy aged 15. Dr. Davis had operated twice, laying open and draining a large abscess in the forehead, which led into the right frontal sinus by a fistula in the anterior wall; subsequently both sinuses were freely opened and drained into the nose. Discussing the case several members drew attention to the fact that in acute frontal sinusitis with fistula formation it is usually the anterior and not the inferior wall that gives way. 6. A Temperature Chart of a Case of Acute Sphenoidal and Maxillary Sinusitis before and after operation. Attention was drawn to the necessity for routine examination of the nasal accessory sinuses in cases of unexplained pyrexia. (The PRESIDENT also related a case similar to this in which a persistent pyrexia was cured by draining the sinuses) 7. A girl, aged 16 with Lupus of Hard and Soft Palate, Epiglottis, Larynx and both Nasal Cavities, and Lupus Erythematosus on both Cheeks.

Mr. HERBERT TILLEY showed a male, aged 59, who had been tracheotomised 16 years ago for Fixation of Cords in the middle line caused by (?) perichondritis of each cricoarytenoid joint.

Dr. W. JOBSON HORNE exhibited a case of Extensive and Rapid Destruction of the Soft Palate by Specific Disease.

Dr. W. H. KELSON showed a woman from whose trachea a Neoplasm, probably a Papilloma, had been removed.

Dr ANDREW WYLIE showed a boy, aged 7, with a Cystic Condition of the Left Arytenoid, possibly tuberculosis.

Mr. G. WILKINSON reported a case of Severe Epistaxis Associated with Multiple Hereditary Telangiectases in a man, aged 62, in which the hæmorrhage proceeding from the septum had been controlled by cauterisation.

Mr. WILKINSON also showed: 1. (?) Papilloma Removed from the Posterior End of the Right Inferior Turbinal. (The pathological nature of the growth aroused some discussion) 2 A Molar Tooth which he had removed by upper bronchoscophy from the right bronchus; the foreign body had found its way into the trachea during extraction by a dentist.

Dr. W. IRONSIDE BRUCE gave a lantern demonstration of X Ray Photographs illustrating diseases of the accessory sinuses.

Mr. W. G. HOWARTH showed: 1. A case in which an Intrinsic Carcinoma of the Larynx had been removed under infusion anæsthesia with hedonal, to bring to notice the great advantages that this method of anæsthesia affords in laryngeal operations 2. A case of Tuberculous Ulceration of the Pharynx and Larynx. 3. A man with a peculiar Bulbous Swelling on the end of the nose, ascribed by some members to a cyst, by others to a lipoma.

Mr. ARTHUR EVANS showed a patient with Paralysis of the Right Vocal Cord following an operation on the isthmus of the thyroid gland. Mr. Evans suggested the possibility of treating the case by suture of the ends of the recurrent laryngeal nerve, or, failing that, by nerve anastomosis with the hypoglossal branches.

Dr. J. DUNDAS GRANT showed microscopical sections from a case of Tuberculous Ulcer of the Larynx the first section suggestive of epithelioma, the second of non-bacillary tuberculosis, ? lupus.

Dr. WYLIE exhibited a case of Ulceration at the Base of the Tongue in a syphilitic subject.

Mr. F. F. MUECKE showed (1) a large Gumma of the Thyroid Cartilage causing considerable swelling in the neck; (2) a case of Laryngeal Swelling and Ulceration of Specific or Tuberculous Nature; and (3) a patient with Cystic Swellings Projecting from the Sides of both Anterior Nares, probably dental cysts.

Mr. G. W. BADGEROW presented an instance of what looked like Vincent's Angina of the Tonsil in a boy aged 5 years.

Mr. C W. M. HOPE showed a case of Herpetic Vesicles affecting the mucous membrane of the soft palate.

LIVERPOOL MEDICAL INSTITUTION.

Treatment of Wry-neck.—Stones in the Bladder.—Experiences with Salvarsan.

A MEETING of this society was held on Feb. 22nd, Mr. ROBERT JONES the President, being in the chair.

The PRESIDENT referred to the loss that had been sustained by the death of Lord Lister. A vote of condolence with the relatives of the deceased peer was passed by the members standing.

Mr. W. THELWALL THOMAS read a note, illustrated by a case and by lantern slides, on the Treatment of Wry-neck, based on six cases recently treated. Mr. Thomas claimed for his method that, while he got good results, it did away with the long and tiresome after-treatment, as he did not use any retentive apparatus. The operation was on the same principle as that for lengthening tendons. An incision was made transversely over the lower third of the sterno-mastoid muscle, the skin and platysma were retracted, the anterior margin of the sterno-mastoid was freed and cut half through, then the muscle was divided vertically enough to give the length equal to the difference between the two sides, the posterior part of the muscle was then undermined by a director to guard the deep structures and cut. It was often found necessary to divide also bands of deep fascia and in one case other muscle fibres. The ends of the muscle were sutured with 30-day chromic gut without strain and then the superficial wound was closed. The line of the incision did not correspond with the deep wound.—In the discussion that followed Mr. R. W. MURRAY said that he thought the condition was not due to traumatism, but to some defect in ante-natal position, and on this point there was considerable difference of opinion expressed by those who spoke.—The PRESIDENT said that the swellings had been incised soon after birth and found to be œdematous; also the rule was that in rupture of muscle elongation followed. Lorenz was still using the subcutaneous incision with over-correction of the deformity, which could not be done with the sutured wound. He thought the success of these cases depended on careful after-treatment.—Mr. R. C. DUN, Dr. G. C. E. SIMPSON, Mr. D. DOUGLAS CRAWFORD, Mr. F. T. PAUL, and Dr. A. STOOKES took part in the discussion.

Dr C. THURSTAN HOLLAND read a note on Stones in the Bladder, which he illustrated by many lantern slides of radiographs of cases, in several of which an examination by the sound had given negative results, although a stone or stones were found by the X rays. In a large number of cases examined he had never found a stone of pure uric acid in the kidney or ureters, but in the bladder these had been invisible to the X rays. With these rare exceptions he had found the radiographic method much the most trustworthy diagnostic means they possessed. Dr. Holland considered the sound ineffective and dangerous; he thought the cystoscope, also, had much the same objections, but might be useful as confirming the X ray findings. There were a few cases of uric acid stone that did not give enough shadow to be made evident by a radiograph.

Dr. G. S. STOPFORD-TAYLOR and Dr. R. W. MACKENNA read a paper on their Experiences with Salvarsan. They had treated 92 cases. At first they had used the intramuscular injection, but in the later 74 cases had found the intravenous method preferable. No bad results had been seen, but it was important that the patient should be properly prepared. A purgative was given the night before the injection, and next morning a light breakfast, the salvarsan being injected five hours after. It was important to make the solution fresh for each injection, to use saline solution freshly made of water distilled in glass vessels. With these precautions there had been no reaction in most cases, in a few slight sickness or loose motions from the bowels. Elimination took place by the urine in four or five days after a dose of 0·3 grm. and in seven to nine days after a dose of 0·6 grm. The effect on the lesions was immediate. Photographs and lantern slides were shown illustrating the effect on a case of skin eruption. No lesions yielded more rapidly than mucous patches and condylomata; headache at once disappeared; adenitis was the most persistent lesion. In tertiary cases where KI and mercury had failed salvarsan was most valuable. Lesions of the mouth and throat healed rapidly. Iritis was much improved. There was improvement in cases

of general paralysis and in the subjective symptoms of locomotor ataxia, but this improvement had not been maintained. Destroyed neurons could not be restored. One dose could convert a positive Wassermann reaction to a negative in one month, and this might continue for nine months without further treatment. In some cases a single dose will not change the reaction until combined with mercury. The general effect was always an improvement in general health and well-being. As to dangers, death might be caused by this as by any other potent drug. French reports of bad results were biased. No deleterious effect had been seen on the optic nerve. Three cases had relapsed, so that it was always well to reinforce the treatment by mercury, and in all cases a combination of drugs was best. The general conclusions were that salvarsan was effective at every stage of the disease, after mercury and iodide of potassium had failed; that one injection may not cure, the dose should always be repeated and combined; that intravenous injection was better than intramuscular; and lastly, the treatment should be controlled by the Wassermann reaction.—In the discussion that followed Dr. A. J. EVANS agreed with the authors of the paper; he emphasised the need for care in the preparation of the solution. He used a special needle without exposure of the vein for the injection. In cases of congenital diseases there had been no effect on the child from injections given to the mother.—Dr. F. P. WILSON said he had used an emulsion in iodipin for injection intramuscularly. He had found some tertiary cases do better with mercury and potassium iodide than on salvarsan.

BRADFORD MEDICO-CHIRURGICAL SOCIETY.—A meeting of this society was held on Feb. 20th, Dr. S. Lodge being in the chair.—Mr. Basil Hughes read a paper on Recent Advances in the Diagnosis and Treatment of Syphilis. He said that the first essential was an early diagnosis. The Hunterian chancre might be difficult to find, atypical, or modified by the presence of soft sore or other mixed infection. Microscopical examination by means of the Indian-ink method for the demonstration of the spirochæta was of great assistance. The presence of indurated glands in the groins was also of great value. Wassermann's reaction he regarded as all-important in the diagnosis of syphilis. He made use of Dr. W. d'Este Emery's method, which had been found to give an accurate result in 98 per cent. of cases. He then described the method of performing the reaction and its explanation by Ehrlich's side-chain theory. Many observers had found a negative reaction in very early cases of syphilis; if that were true it had an important bearing on treatment. The chancre could be excised before the infection became general. The value of Wassermann's reaction was emphasised in cases where the diagnosis would otherwise be doubtful, such as certain ulcers of the tongue, gummata of certain muscles, gummatous adenitis in the groins or axillæ, tertiary laryngitis, gumma of the tonsil, chronic superficial glossitis, and leukoplakia of the tongue, conditions which should always be regarded as syphilitic unless the reaction was negative. Tabetics invariably gave a positive Wassermann reaction; in general paralysis of the insane the cerebro-spinal fluid was also positive, a condition which did not obtain either in tabes or gummatous disease of the central nervous system. Prophylaxis did not receive the attention it deserved. The State should undertake more responsibility in the matter. A strong plea was entered for the more complete treatment of venereal disease in charity-supported institutions, Government subsidies being urged should the funds for that purpose fail. Speaking of mercurial treatment, Mr. Hughes advocated getting the patients under its influence as rapidly as possible. He favoured inunction or intramuscular injections. When physiological limits were reached in the former case gray powder by the mouth might be substituted. Intramuscular injections were more rapid, and for this purpose he advocated Lambkin's cream in weekly doses, numbering about 25, with certain intervals. As with gray powder and inunctions, decoct. sarsæ co. helped the tolerance for the drug. Throughout any course of treatment control by the Wassermann reaction was necessary. It became negative under mercury, but so long as syphilis was still present the positive reaction returned about six weeks after its administration had been stopped. Treatment should be continued until the reaction remained negative for 12 months after treatment had been abandoned. Mr. Hughes believed that this policy would avert many of the late parasyphilitic manifestations, and that cessation of symptoms was no guide as to the cure of the disease. After mentioning the various arsenical preparations which had been tried and abandoned owing to the serious dangers in their employment, he discussed his results by treatment with salvarsan in 100 cases during the last two years. It might be given subcutaneously, intramuscularly, or intravenously. The second method was valuable in certain cases, because its action was spread over a period of some three weeks. But the occasional formation of necrosis and of intractable though aseptic "abscesses" limited its use. He relied mainly on the intravenous method. He described the method of preparation and administration of the drug. He believed firmly that its dangers were entirely due to neglect in the avoidance of cases in whom gross lesions of the fundus oculi, of the heart, of the chest, or of a septic character were present, or to neglect in the careful administration of the drug, which should be injected in a state of perfect solution and of proper alkalinity. The solution must not be spilt in the wound, and a second dose should not be given soon after the first. With these precautions most of the after-results could be avoided. The most important of these were a metallic taste in the mouth, headache, vomiting, diarrhœa, rise of temperature, albuminuria, skin rashes, and rigors. Thrombosis and other embolic dangers could be avoided by care in the preparation and administration of the drug, and anaphylactic phenomena (many of the deaths recorded had been due to a second dose given too soon after the first) by allowing sufficient time to elapse between the doses. In cases showing no active lesion there seemed to be some relation between backache as an after-effect of injection and lesions of the central nervous system. Mr. Hughes gave it as his opinion that a single dose was rarely sufficient, and advised three, the indications for their use, as in treatment by all other forms of methods, being repeated Wassermann reactions. He discussed the simultaneous use of mercury, emphasised the dangers of treatment by "606" in inexperienced hands, and finally insisted on the importance of providing, either by the State or the municipalities, facilities for the performance of the Wassermann reaction in the same manner as it had been made possible nowadays to obtain bacteriological information in cases of diphtheria, typhoid fever, and phthisis.

NOTTINGHAM MEDICO-CHIRURGICAL SOCIETY.—A meeting of this society was held on Feb. 21st, Dr. F. H. Jacob, the President, being in the chair.—In opening the discussion as to whether the "Removal of Glands in Malignant Disease was Worth While," Dr. A. Stanley Green said that extensive operations, involving the removal of large tracts of glands and fascia sheaths together with the original growth, were now the order of the day. Surgeons lost sight of their cases, but as a practitioner he was forced to the conclusion that a case was hopeless as regards permanent cure when glands were present. The presence of a microscope in the operating theatre was not an infallible test as to whether the growth was malignant or not, as instanced in a case where, although the testis was reported to be non-malignant, the patient died within three months. Dr. Green then considered operations for malignant disease under four heads: (1) where the glands were not palpably affected—these, of course, gave the best results; (2) where, as in the breast, the growth and glands were removed in one mass; here the results were encouraging; (3) where the glands were removed at a second operation; this was generally a futile procedure, because some of the lymphatic tracts were almost certain to be left between the two operations; and (4) where a further operation was performed for the removal of recurrent glands. Cases were quoted where this was absolutely disastrous. Still, unfortunately at present operation was their only known chance of a cure, for X ray treatment and radio-therapy were at the best only palliative.—The President agreed that X ray and radium only retarded the growth, but warned that they must not be allowed to cause dermatitis.—Mr. W. M. Willis thought that the whole operation for cancer of the breast should be reviewed, and that more consideration should be given to the duration of the disease and the size of the glands. Operation sometimes seemed to light up the cancer. In the oral region the enlargement of glands was often due to sepsis. Each region must be considered separately, and even where the glands were not felt to be enlarged, yet it was advisable

to remove them.—Dr. Sarah Gray said that removal of glands was less favourable in rapidly growing cancer than in more slowly growing cases.—Mr. C. H. Allen remarked that formally mere excision of the growth in epithelioma of the lip was considered sufficient; he, however, thought that better results were obtained by thoroughly removing the glands at the same time.—Dr. W. T. Rowe thought that better results were obtained in tongue cases when the glands were removed as well as the growth; moreover, if recurrence did take place in these cases, it generally occurred in the internal organs and not in the glands.—Mr. A. M. Webber agreed with the last speaker, and said that it was an important thing if the patient could be spared a hideous death from sloughing glands.—Dr. C. H. Cattle said that epitheliomata were of a less malignant type of cancer than carcinomata, also that the glands were less affected in slow growing cancers such as scirrhus of the breast.—In his reply Dr. Green said that in his experience patients suffered more when dying from internal secondary deposits than did those whose glands were not removed.

ÆSCULAPIAN SOCIETY.—A meeting of this society was held on March 1st, Dr. Leslie Durno, the President, being in the chair.—Dr. J. Hugh Thursfield gave a lantern demonstration to illustrate some points in the Diagnosis of Children's Diseases. In cases of meningococcic meningitis the extreme head retraction and wasting were well shown, also the wide-open staring eyes. If treated with serum from 40 to 50 per cent. of the cases recover. Flexner's serum is injected into the spinal theca; Göppert's serum is injected under the skin. A peculiar form of rheumatoid arthritis (called Still's disease) is probably an infective disorder. There are spindle-shaped swellings of the small joints of the hands, wrists, knees, and ankles, enlarged glands in the axilla and neck, hectic fever, and enlarged spleen. Cases may last four, five, or six years, and die from an intercurrent disease. Post-mortem examination shows that the actual joints are not diseased, but there is thickening of the soft parts and periarticular structures. The condition is probably due to a bacterial poison formed in the intestine. Cretins are seldom diagnosed before one year old, and it is not true that good results are obtained if treatment is begun very early. A case of tetany in an infant shows œdema of the backs of the hands, with the fingers clenched and wrists flexed. It is seen in rickety and ill-fed children. Localised œdema below the eye, not due to nephritis, is due to whooping-cough, and often precedes it. Birth or Erb's palsy is due to paralysis of the fifth and sixth cervical nerves, and the muscles affected are the external rotators of the shoulder, biceps, coraco-brachialis, and supinator longus. Operative treatment by nerve anastomosis has not been successful, better results being obtained by massage and passive movement. Babinski's sign or the external plantar reflex, where the great toe turns up and the small toes turn in, is, at any age, good evidence of degeneration of the lateral and pyramidal tracts of the cord. In pseudo-leukæmia infantum the spleen and liver are enlarged, and there is chronic anæmia, causing great pallor, and hæmorrhages occur into the spleen, kidneys, skin, &c. It is probably due to an intestinal auto-intoxication. Hirschsprung's disease is a congenital dilatation of the colon, which goes on to perforation and fatal peritonitis. Treatment with enemata and eserine increases the motor power of the colon. Other curiosities shown were: Complete Congenital Absence of the Pectoral Muscles of the Left Side; Heart on the Right Side of the Chest; Extreme Chronic Arsenical Pigmentation; Auto-inoculation of Vaccinia in the Eye; and Congenital Ichthyosis.

GLASGOW MEDICO-CHIRURGICAL SOCIETY.—A meeting of this society was held on Feb. 16th in the Glasgow Eye Infirmary, Dr. A. Freeland Fergus, the President, being in the chair, when a clinical and pathological demonstration was given by members of the infirmary staff.—Dr. Andrew Wilson read a short note on three cases of Scotoma Scintillans occurring as a symptom of migraine, and showed diagrams illustrating the fields of vision, and coloured drawings representing the appearances seen by a patient during the attack. Dr. Wilson also showed a specimen of an unusually large Lacrymal Sac excised on account of Dacryocystitis.—Dr. A. J. Ballantyne showed two cases operated on for Ptosis, with satisfactory results, and a case of Concomitant Strabismus, which had followed a fracture of the vault of the skull in the frontal region. In the latter case the strabismus was not due to injury to any ocular nerve or muscle, but had been latent at the time of the accident, and had developed in consequence of the occlusion of the eye by dressing during the healing of the fracture.—Dr. A. Lewis McMillan read notes of a case, the patient being a boy aged 8 years, in which Orbital Cellulitis, occurring as a sequela to scarlet fever, had necessitated enucleation of the affected eye.—Dr. Brownlow Riddell showed a patient with a rare condition of the fundi—Choroideremia, or Gyrate Atrophy of the Choroid and Retina; and three patients illustrating the Pupillary Phenomena in Glaucoma, Iritis, and Tabes Dorsalis.—Dr. M. Logan Taylor made a communication on Malignant Intra-ocular Tumours, based on cases treated in the Glasgow Eye Infirmary during the past three years, and dealing specially with the so-called glioma or neuro-epithelioma. After discussing the lymphatic connexions of the eye and the paths along which the spread of tumour might occur, he particularly emphasised the fact that, in view of our increased knowledge of the pathology of these growths, a more extensive operation for their removal should be carried out as early as possible in all cases. The procedure he recommended was complete exenteration of the orbit with division of the optic nerve at the optic foramen. Dr. Taylor also showed a number of gelatine-mounted preparations of eyes illustrative of a variety of diseases and injuries.—Dr. H. L. G. Leask showed two cases of Penetrating Injury, in which the foreign body was still in the eyeball, or orbit, after many years, as illustrated by radiograms; and a case of Disease of the Ethmoid Cells after successful operation. He also read notes of a case of Intra-ocular Tumour secondary to a scirrhus of the breast.—Dr. W. B. I. Pollock gave a demonstration of specimens of Glioma Retinæ.

LEEDS AND WEST RIDING MEDICO-CHIRURGICAL SOCIETY.—A pathological meeting of this society was held on Feb. 16th, Mr. H. Littlewood, the President, being in the chair.—Dr. R. Cattley and Professor A. S. Grünbaum made some remarks on the Genesis of Chronic Arteritis. They said that in syphilitic arteritis the earliest manifestation was an irregular hypertrophy of the internal elastic lamina which was quickly followed by a hypertrophy of the muscular coat. A proliferative thickening of the endothelial and sub-endothelial tissues occurred antecedent to marked degeneration of the muscular and elastic elements.—Dr. Helen G. Grünbaum and Professor Grünbaum communicated notes on Further Experiments on the Treatment of Inoculated Rat Sarcoma and Observations on Certain Accompanying Blood Changes. This paper is published at p. 644.—The President showed Gall-stones removed from a case of suppurative cholecystitis in the third week of typhoid fever. The typhoid bacillus was germinated in the pus.—Dr. C. Oldfield exhibited a specimen showing Hæmorrhage into the Ovary which produced signs and symptoms like ectopic gestation.—Dr. A. L. Whitehead and Dr. M. J. Stewart exhibited a Malignant Tumour of the Lacrymal Gland showing the presence of both squamous and columnar-cell carcinoma.—Mr. H. Collinson and Dr. Stewart exhibited a Scirrhus of the Breast showing fibrosis of the perivascular lymphatics in the surrounding fat. The patient had lymphatic œdema of the arm.—Dr. Stewart showed the organs from a case of Partial Transposition of Viscera. The stomach and spleen only were transposed, while the left lobe of the liver showed marked hypertrophy.—Dr. W. H. Maxwell Telling, Mr. J. F. Dobson, and Dr. Stewart showed preparations from a case of Epithelioma of the Cheek in which the epithelioma was regarded as the result of X ray treatment.—Specimens were also shown by Dr. T. Wardrop Griffith, Mr. B. G. A. Moynihan, Dr. Leonard A. Rowden, Dr. J. B. Hellier, Dr. Clara Eglington, and Mr. W. Thompson.

HARVEIAN SOCIETY.—A meeting of this society was held on Feb. 29th, Dr. H. J. Macevoy, the President, being in the chair.—After the formal business of the meeting had been disposed of, Dr. Farquhar Buzzard opened the discussion on Acute Poliomyelitis and Allied Conditions.—Dr. F. E. Batten dealt with: (1) the experimental production of acute poliomyelitis; and (2) the epidemiology of the disease. The experimental production of acute poliomyelitis in monkeys had been carried out by numerous observers in Austria, Germany, France, and America.[1]

[1] THE LANCET, Feb. 17th, 1912, p. 413.

The virus was filtrable, would withstand the action of glycerine, and if an organism was ultra-microscopic the virus, therefore, had a great similarity to that of rabies. So far only monkeys developed typical poliomyelitis, but the work of Marks had shown that the disease could be transmitted through rabbits without causing clinical manifestations of poliomyelitis in them. The epidemiology was next dealt with, and it was shown that although epidemics had been known in Europe since 1881, yet during the last decade it had been widely spread over the whole civilised world. During 1910 and 1911 numerous epidemics had occurred in England, but how widely the disease was spread would only be known when there was a more general recognition of the symptoms to which the disease give rise and notification was compulsory throughout the country.—Dr. L. G Guthrie, in his remarks, dealt more particularly with the prophylaxis and prognosis in the febrile and afebrile cases. He deprecated the practice of testing the electrical reactions during the acute stage, more especially in young children. He pointed out the importance of massage and passive movement by the mother in those cases where the services of a skilled masseuse could not be obtained. He objected to the use of orthopædic instruments on the ground that usually they were much too heavy for the children to carry.—Dr. Buzzard briefly replied.

Reviews and Notices of Books.

A Text-book of Pathology, with a Final Section on Post-mortem Examinations and the Methods of Preserving and Examining Diseased Tissues. By FRANCIS DELAFIELD, M.D., LL.D, and T. MITCHELL PRUDDEN, M.D, LL.D., Columbia University, New York. Ninth edition. With 13 full page plates and 687 Illustrations in the Text, in black and colours. London: Baillière, Tindall, and Cox. 1912. Pp. 1114. Price 25*s.* net.

ALTHOUGH the name of Dr. Delafield—the senior author—appears on the title page, he no longer shares in the preparation of the work, so that Dr. Prudden is alone responsible for such alterations and additions as have been made in this, as in the last three revisions.

The book covers a wide field, though certain phases of clinical diagnosis and practical bacteriology have been excluded. Some old illustrations have been discarded and 40 new ones added. The author mentions a capital fact when he states that "the successful pursuit of pathology depends largely upon the clearness and accuracy of the student's knowledge of normal anatomy and normal physiology." So far as we can judge from the "introduction," the responsible author seems less at home on the chemical side of his subject than on the purely morphological side. "Proteins and their performances" introduce the reader to "the storm centre of research," concerning which it is stated that we must be patient, and not too eager to carry the formulæ and the working hypotheses of the chemists, without due reserve, over into the domain of living things, whose story and performances, and limitations, we are only just beginning to spell out. To the author "the structure and performances of cells," as the field richest in the promise of significant revelations, is obviously a congenial theme.

Part I. deals with general pathology, Part II. with special pathology, while Part III. is devoted to the methods of making post-mortem examinations and of preserving and examining animal tissues. The illustrations throughout, both coloured and uncoloured, are an outstanding feature of the book. The author's style of expression here and there is sometimes not what we are accustomed to in English text-books. We miss what seems to us rather important, the magnifying power under which the preparations have been observed and figured. The subjects of "regressive" and "progressive" tissue changes are concisely and sufficiently described. Under the technique for neutral fats we failed to find any reference to the newer results obtained with Nile blue. The description of bone grafts is somewhat cryptic. A whole page is given to illustrations of Thoma's frog plates for the study of inflammation. Animal and vegetable parasites occupy about 80 pages. The account of immunity is good, but under anaphylaxis even in the bibliography we find no direct reference to the work of C. Richet, who coined this word. Over 120 pages are given to infectious diseases. The technique for studying such appearances as Negri bodies and the Wassermann and other well-known tests is fully given. The chapter on Malformations, though short, is particularly well illustrated, as is also that on Tumours. Poisons, general diseases, and certain forms of death bring Part I. to a close. One page, however, seems rather too little for pyrexia.

The study of special pathology begins with the blood and blood-forming glands, and the subject is treated much as in other text-books. Considering the recent work on the pituitary body, the space given to it seems rather short. Although it is stated that an extract influences blood pressure and urinary secretion, it is not stated whether it increases or decreases these functions. We miss a reference to the work of Schäfer. The illustrations of diseases of the heart are excellent, and the same may be said of those of the lungs. The names of Mackenzie and Wenckebach are conspicuous by their absence.

This is a text-book much to be commended for the comprehensive survey it gives of pathology, and for the excellent way in which the material changes, as exemplified in morbid anatomy, are depicted in the illustrations and set forth in the text.

The Parasitic Amœbæ of Man. By CHARLES F. CRAIG, M.D., Captain, Medical Corps, United States Army. With 30 illustrations. London and Philadelphia: J. B. Lippincott Company. 1911. Pp. 253. Price 10*s.* 6*d.* net.

THIS monograph, which is published with the authority of the Surgeon-General of the United States Army, gives a detailed description of the various species of amœbæ which have been regarded as parasitic in man, attention being especially directed to their morphology, life-cycle, methods of differentiation, and relation to disease.

The book contains the results of the author's personal observation, extending over a period of more than 12 years, of hundreds of cases of amœbic dysentery, clinically and in the post-mortem room. Much of his material was gathered during his service in the military hospitals and while he acted as a member of the Army Board for the Study of Tropical Diseases in the Philippine Islands. He was moved to prepare the present volume by finding that most of the works dealing with the subject were written in German, French, and Italian, and that there was no publication in the English language treating fully upon the parasitic amœbæ of man. A further incentive to prepare the work was the fact that amœbic dysentery is now recognised to be of much more frequent occurrence, even in the temperate regions of the United States, than was formerly believed.

The book is divided into nine chapters, and about half of the space is devoted to the consideration of the amœbæ of the intestinal tract, and especially of Entamœba coli, Entamœba histolytica, and Entamœba tetragena. A short description is given of the amœbæ of the mouth, of the genito-urinary tract, and of those found in exudations or abscesses and in the lungs. The author admits that the position of some of the species described cannot be regarded as permanent, it being probable that further research may result in their elimination from the list. Details are given of a number of experiments on animals carried out by himself, presumably in the Bacteriological

Laboratory of the Army Medical School, Washington, and in the Rockefeller Institute for Medical Research in New York.

This useful monograph is likely to fulfil the expectations of the author, who intended it originally for the use of medical officers of the United States Army, Navy, and Marine Hospital Service, and of public health officials and practitioners in districts affected by amœbic dysentery. It gives a very clear and concise account of the state of our present knowledge of these parasitic amœbæ of man, and their distribution, morphology, mode of reproduction and life-cycle, cultivation, and relation to disease. A valuable bibliography, consisting of a list of more than 120 references, is appended, and a useful index is also supplied.

Diseases of the Ear, Nose, and Throat. By WENDELL CHRISTOPHER PHILLIPS, M.D., Professor of Otology, New York Post-Graduate Medical School. With 545 illustrations, some in colours. Philadelphia: F. A. Davis Company; London: Stanley Philips. 1911. Pp. 847. Price 25*s.* net.

Dr. Phillips has set himself an ambitious task in writing a book which is to meet the needs of the general practitioner and the surgeon as well as the otologist and the laryngologist. He says that he has purposely refrained from perpetuating distorted theories or descriptions of operations which are obsolete or have been succeeded by more modern methods, and that his aim has been to write a practical, accurate, and concise treatise supported throughout by personal experience. The number of pages is not excessive for the threefold subject, and unnecessary space has been taken up in describing "the office equipment," as it is called, and in showing a nice little photograph of his own "treatment room." We should have preferred a rather larger amount of space to be devoted to the examination of patients, especially to the physical part of the examination.

The first part of the book, occupying nearly 400 pages, deals with diseases of the ear, and in considering the tests for hearing we find that the author thinks that if only two tuning forks are employed they should be the C2 and C4. The usual tests are briefly considered, but, as in a good many modern text-books, a very full description is given of the various tests employed in attempting to clear up difficulties in labyrinthine diagnosis.

The second part of the book is on the influence of general diseases upon the ear, nose, and throat, to which, practically speaking, another 100 pages are devoted, such diseases as tuberculosis and lupus receiving, of course, a very full description. Dr. Phillips does not describe in this place the direct method of operating on the larynx, and certainly some subjects coming under the section now under consideration are treated very cursorily. For instance, asthma receives only 26 lines, whereas the next two pages are devoted to the testing of blood pressure, with diagrams of instruments for ascertaining the pressure.

The next portion of the book, describing diseases of the nose, occupies approximately 150 pages. The operation of sub-mucous resection is very fully and carefully set out, with full sheet illustrations of all the various instruments required, though many others are given besides in the text. Ash's operation is also included. Diseases of the pharynx, naso-pharynx, and oro-pharynx between them occupy about 80 pages, while the larynx has to be content with 60, part of which is taken up by several large anatomical drawings. In fact, it is in this part of the book that condensation has been most rigorously carried out. The last part of the book is devoted to laryngoscopy, tracheoscopy, and bronchoscopy.

We have no doubt that in future editions Dr. Phillips will revise the methods of treatment, and see that the direct method is introduced to his readers at the commencement and not at the end of their studies. The present arrangement is scarcely in keeping with his stated intention of eliminating the obsolete and introducing the most modern methods, for most certainly the indirect method of laryngeal surgery is to no inconsiderable extent a thing of the past. It is much less nervous work operating by direct than by the indirect method. The results are more certain, and the technique when once mastered is relatively quite simple.

Dr. Phillips has produced a book which will no doubt fulfil the requirements of a large number of medical men and students, though we hardly think it thorough enough for specialists.

Die Experimentelle Pharmakologie als Grundlage der Arzneibehandlung. By Dr. HANS H. MEYER and Dr. R. GOTTLIEB. Second edition. Berlin and Vienna: Urban und Schwarzenberg. 1911. Pp. 554. Price, paper, 12 marks; cloth, 14 marks.

THE fact that this is the second edition of a book which made its first appearance in 1910 is evidence that the work is of sterling value, and that it has found the ready welcome which was to be expected from the reputation of its authors as pharmacologists. The application of pharmacology to the problems of medicine is prominent throughout, and with this idea in view the subject matter has been arranged, not, as is usually the case in such text-books, in chapters, each dealing with a group of similar drugs, but in sections corresponding to organs and systems of organs. Thus we have chapters on the pharmacology of the motor nerve-endings, the central nervous system, the eye, digestion, and so on. In addition to a very full description of the actions of drugs on the various organs, a useful account of the chemistry of the more important substances is given, and a most helpful discussion on the relation between constitution and physiological action is included.

Among the more prominent new features of this edition are the copious additions which have been made to the chapter dealing with the pharmacology of the generative organs. The treatment of this subject is lucid and complete. The chemical influence which an organ (e.g., an ovary) exerts, through the agency of the substances that it secretes, upon the general development and functions, upon another organ of the same system, and upon more or less distant organs, is fully discussed. We are reminded, however, that but little is known of these internal secretions, which evidently afford a wide field for bio-chemical research. The pharmacological relations of the lacteal glands and the uterus and its movements receive ample attention, as do the physiological actions of a large variety of agents. Especially noteworthy is the description of ergot, its action, constituents, and mode of employment, an account of the important recent work of Barger and Dale and their co-workers being included. These investigators appear, to a large extent at any rate, to have solved a problem which has been for many years the object of attack from all sides; they have isolated the complex active alkaloid ergotoxine and the very active bases *p*-hydroxyphenylethylamine and 4-β-aminoethylglyoxaline, the two latter having been previously separated from the decomposition products of flesh. A third active substance of the putrefaction-base class, agmatine, which, however, is not mentioned in the book under review, has been obtained from the drug by Engeland and Kutscher.

One of the most useful chapters in the last edition was that dealing with the relations of pharmacology to the causes of disease, and much new material has now been added to this section, which treats the subject in an exhaustive manner. An interesting feature of the matter found under the heading "General Antiseptics" is a discussion of the differing

germicidal powers of various disinfectants, depending upon their ability to penetrate the protoplasmic lining of the bacterial cell. This penetrating power is due in some cases (e.g., phenol) to the solubility of the antiseptic in this protoplasm, and in others to the destruction of the lining layer by the poison. The effects of a third group of agents are the result of both actions. The acids, salts, and bases having disinfectant action fall chiefly into the second group, and it is shown that their activity depends on their degree of ionisation in solution; thus mercuric chloride is more ionised than the corresponding bromide, and this than the cyanide, the germicidal powers of these salts falling into the same order. The general antiseptics and anthelmintics and the specifics and their action are very thoroughly reviewed, special attention being given to the organic derivatives of arsenic and their poisonous influence on the protozoa. Antitoxins, serum-therapy, and immunity are also fully treated.

At the end a new chapter has been added in which are collected several problems of general pharmacology that were previously to be found in various parts of the work. These are chiefly connected with the conditions necessary for and affecting the therapeutic action of potent drugs. Defects in the book are really scarce; a constitution is ascribed to antipyrin, however, which cannot be reconciled with the synthesis of the substance from methylphenyl-hydrazine and ethyl acetoacetate. The addition of an index of authors' names, or at least the inclusion of these in the general index, would be an improvement. The references given are copious, including much recent work, and the diagrams are remarkably clear, coloured ink being used in many cases. The authors are to be congratulated upon a masterly treatment of their subject.

A Text-book of Experimental Psychology, with Laboratory Exercises. By CHARLES S. MYERS, M.A., M.D. Cantab., Sc.D., of Gonville and Caius College, University Lecturer in Experimental Psychology, Cambridge. Two Vols. Second edition. With 1 plate and 66 figures and diagrams. Cambridge University Press. 1911. Pp. 344 and 107. Price 10*s.* 6*d.* net.

WE extend a cordial welcome to the second edition of Dr. Myers's well-known text-book. By the separation of the systematic from the exercise part of the work reference from one to the other is rendered more easy. A considerable amount of new material has been incorporated. Much of the matter of psychological interest dealt with by Dr. Henry Head in his recent Croonian lectures on the Sensory Functions of the Thalamus and Cortex[1] is included in this edition, and the original text has been subjected to a thorough revision. Chapters on cutaneous, visceral, auditory, labyrinthine, motor, visual, gustatory, and olfactory sensations are followed by others on memory, muscular and mental work, psycho-physical methods, muscular effort, binocular and binaural experience, the visual perception of size and direction, time and rhythm, feeling, and attention. There are not a few questions of psychological importance on which Dr. Myers adopts a "not proven" position, quoting rival theories and placing them with conspicuous fairness before the student, at the same time criticising their defects and encouraging the latter to form his own conclusion. In paragraphs on psychological topics of secondary importance—as, for instance, those on the so-called "central" sense of muscular effort—the reader will find the same admirable scientific spirit exemplified. The qualities of lucidity and conciseness enhance the value of the book. The bibliographies at the end of the chapters are very serviceable. The series of exercises fulfil their purpose satisfactorily.

No worker in psychology can afford to dispense with this excellent text-book, while the physician opening it at random will find material to engross him on almost every page.

[1] THE LANCET, Jan. 6th, 13th, and 20th, 1912.

LIBRARY TABLE.

Materia Medica, Pharmacy, Pharmacology, and Therapeutics. By W. HALE WHITE, M.D. Lond., M.D. Durh. (Hon.), Senior Physician to, and Lecturer on Medicine at, Guy's Hospital. Twelfth edition. London: J. and A. Churchill. 1911. Pp. 695. Price 6*s.* 6*d.*—The fact that a work has reached a twelfth edition is sufficient proof of its value and popularity, and no words are needed from us as to its nature and scope. Dr. Hale White's book has been found to be one of the very best treatises on the subject, and the present edition maintains that position. Every care has been taken to bring it thoroughly up to date. The letterpress is not confined to a description of official preparations, but many that are not official are also considered, so that a vast amount of useful information has been collected together. The form in which the subject matter has been arranged and the essentially practical character of the remarks alike command attention and reward perusal. We cordially recommend this manual as valuable both to students and practitioners.

New Tracts for the Times: 1. *Problems of Sex.* By J. ARTHUR THOMSON and PATRICK GEDDES. 2. *Womanhood and Race Degeneration.* By MARY SCHARLIEB, M.D., M.S. Lond. 3. *National Ideals and Race Regeneration.* By the Rev. R F. HORTON. London, New York, Toronto, and Melbourne: Cassell and Co., Limited. 1912. Pp., in one vol., 63. Price 6*d.* a volume.—These "New Tracts for the Times" are published under the auspices of the National Council of Public Morals, a body whose end is race regeneration. And although the movement for race regeneration is apparently a novelty, it must be remembered that thinkers in all ages have written and spoken on the subject, for the wish and the desire to make men better has been the ideal of many leaders of thought from Plato through St. Augustine down the ages to the Dominicans and Franciscans, More and the Quakers, Wesley and Whitfield, the writers of the old Tracts for the Times, and impersonal societies such as University and other "Settlements," which are at work in our large towns. The three tracts before us do not suggest remedies or methods of operation, but state in simple language the ideals which should be aimed at. Professor Thomson and Professor Geddes, professors respectively of zoology in the University of Aberdeen and of botany in the University of St. Andrews, are well known for their researches into, and writings upon, sex problems, and they have written an excellent little book treating the subject from the evolutionary and biological points of view without in any way glossing over or minimising the dangers and difficulties which attend the sex impulse which is at once "the glory and the shame of mankind." We have rarely seen a work in which the canon is so forcibly and plainly laid down that "uncontrolled sexuality cannot remain a purely personal vice." It may seem strange in connexion with the problems of race degeneration to refer to a French romance, but many persons will read novels who will not read "tracts" or scientific treatises, and there is a book by Claude Farrère, called "Les Civilisés," which preaches a sermon on self-control, pointing out the terrible wreckage of human lives which follows its absence, and insisting incidentally on the duty which parents owe their children to bring them up in the way in which they should go. The sermon if read aright makes it plain to all who read that the wages of sin is death.

Mrs. Scharlieb's paper deals with the training of women, woman's influence on the race, and on women as citizens. All three chapters are sound and sensible. Mrs. Scharlieb

does not spare her own sex in one matter at any rate—namely, their tendency to be hard and exacting as employers. She lays especial stress upon the need to a community of a religion. We agree with her. It is not our province to insist upon one religion more than on another, but we are certain that no race or country can flourish in which men do not remember the dictum laid down by an easy-going Epicurean heathen—namely, Horace—who told his countrymen to remember

Dis te minorem quod geris, imperas.

The Rev. R. F. Horton discusses National Ideals, and, in his first chapter, the question What is a Nation? Incidentally, too, he discusses the relation of the British nation to the Empire. The problems of national ideals naturally connote political questions, and here again it is no business of ours to take sides, but there is one remark of Dr. Horton's which, judging by articles and correspondence in the daily press, may be cordially recommended to politicians of all complexions. It appears on p. 51, and runs as follows: "Suffer anything rather than lie; recognise that no good cause, least of all the best, can ever be served by lying."

Selbstbefreiung aus Nervösen Leiden. Von Dr. Med. WILHELM BERGMANN, Lietendem Arzt an der Kaltwasserheilanstalt in Cleve am Niederrhein. Freiburg: Herdersche Verlagshandlung. 1911. Pp. 295. Cloth, 4*s*.—This little volume is intended as a sort of "manual of self-help" for all whose "nerves" are the weakest and least healthy part of their organism. The author feels that mere consultations with a physician can do relatively little towards putting such patients on their feet again, in a metaphorical sense, inasmuch as his time is of necessity limited, and he can as a rule only point out the way; it is in the carrying out of his instructions that the patients fail. What is wanted is some dynamic to inspire and stimulate them to renewed effort on their own behalf in the absence of the physician. Mental re-education will accomplish much if the patient knows how to set about it. The author takes the nervous patient into his confidence and indicates how by daily exercise of his own faculties the latter can escape from the pessimism and depression under which he labours. The language of this "manual" is simple and untechnical, and the book may with advantage be put into the hands of those who can be brought to believe that they can work out their own salvation. There is nothing that is novel and much that is hackneyed in its pages, and it may be questioned whether the author's methods are applicable to all the cases of functional nervous disease, a description of which he supplies in the first part of the book. There can be no doubt of his sincerity and enthusiasm; at the same time, the frequent use of the familiar "du" and a superabundance of poetical and other quotations give the impression of a certain tendency to "preach" which may be calculated, we think, to defeat its own ends. We can admire, however, the spirit in which the book has been written; its general tone and the hopefulness of its outlook deserve hearty commendation.

Contributions à l'Étude du Traitement des Tuberculoses Externes par des Injections Modificatrices. Les Injections d'Huile Gomenolée. Par Dr. JACQUES TRIBES, Ancien Externe des Hôpitaux de Paris, Interne de l'Asile National des Convalescents des Hôpitaux de Paris à St. Maurice. Paris: A. Maloine. 1912. Pp. 82. Price 2 francs.—The author here presents the results of his investigations carried on for two and a half years at the Hôpital Bretonneau and the Hôpital Trousseau. He gives a historical *résumé* of the treatment of external tuberculous conditions by various injections, going back as far as Fabricius ab Aquapendente, who injected oxymel to disperse tuberculous fungosities. He describes the various agents that have been employed—iodoform, camphorated naphthol, and camphorated thymol—and finally gomenol, which his pamphlet is written to advocate. Gomenol is a distilled extract of the young leaves of a variety of *Melaleuca viridiflora*. Its characteristics have been determined by Professor Bertrand, of the Institut Pasteur at Paris. The preparation used by Dr. Tribes is a 20 per cent. oil of gomenol, about 1 to 2 c.c. being injected. He claims that considerable quantities can be deposited within the affected tissues without inducing intense inflammatory symptoms or intoxication. He describes the technique, and gives a series of cases. The thesis obtained the bronze medal of the Assistance Publique.

MISCELLANEOUS VOLUMES.

DURING the last few days we have received for review a good many novels. We can only spare space to say a few words about some of them, but this is not because we consider that novels make little appeal to the medical man. On the contrary, the number of our readers who also read novels appears to be quite large. *The Chink in the Armour*, by Mrs. BELLOC LOWNDES (London: Methuen and Co., Limited. 1912. Pp. 316. Price 6*s*.), is a thoroughly good sensational story. Mrs. Belloc Lowndes knows her types to their finger nails, can invent a *millieu* for them that exactly suits the parts which they have to play, and writes with ease and distinction. She also has the rare gift of being able to produce thrills; we cannot particularise the parts in her story where this admirable quality were particularly in evidence without disclosing the details of the plot, and that in the case of this story would be unpardonable.—*In a Cottage Hospital*, by GEORGE TRELAWNY (London: T. Werner Laurie. 1911. Pp. 241. Price 2*s*. net). What are the conditions that according to Mr. George Trelawny obtain in the smaller hospitals of the country? In "Rebley Hospital," as depicted by him, the nurses and ward sisters are nearly all women of loose character; the matron habitually neglects her duties to run after a hypocritical and dipsomaniac preacher, and doubles her income by means of secret commissions from the tradesmen, in which last offence most of the hospital committee are also implicated; pages are devoted to descriptions of most brutal ill-treatment of the patients, who, moreover, are subsisted habitually on putrid food, for the profit of the matron and the secretary; the "hospital comforts" are stolen by the nursing staff from the patients' bedsides, wherewith to treat their male guests at their orgies in the nurses' parlour, where they pass their time in drunken lewdness with members of the visiting staff and the committee; nearly all the honorary medical staff are incompetent, and the one more or less competent surgeon attempts brain operations in a state of drunkenness with callous indifference to their fatal results; another member of the visiting staff stays away from the hospital for weeks, and even months, ostensibly to play golf, but really, it is suggested, to spend the time with one of the nurses, for four out of five of the staff have their paramours among the nurses. Nurses, matron, and medical staff drive without any regard for decorum to a public *fête*, where they become the worse for drink in public. The senior surgeon (a professional abortionist, by the way, who keeps a record book of his malpractices), while drunk, induces abortion in the hospital with fatal results on a nurse of whose condition he is himself the author, and to whom the unsophisticated house surgeon, in ignorance of her obviously wanton character, has become engaged. Failing to fasten the guilt on the innocent house surgeon—who, by the way, had also misconducted himself with the victim—he poisons himself. And lest there should be any doubt of the author's meaning,

the closing words of the book (in italics) are: "Reader, there is many a Rebley Hospital in England to-day!" while the preface says that the details "are true in substance and in fact." It is a matter for wonder that any publisher should be found willing to put his name to such a childish and malignant work.——If humour really possesses restorative power as is asserted, *Letters from China and Some Eastern Sketches*, by JAY DENBY (London: Murray and Evenden, Limited. 1911. Pp. 438. Price 6*s*.), deserves to be read by every medical man, not only for his own entertainment, but to recommend as a possible auxiliary to treatment in certain cases. Its humour is really humorous without being coarse, while those who are acquainted with Shanghai will appreciate the fidelity of its limning. The book is perhaps distinctly reminiscent of various writers, but they are all at least praiseworthy models. For instance, the "Letters from China" remind one at not infrequent intervals of Mark Twain and again of Jerome. Of the shorter sketches, some —e.g., "The Griffin"—recall Kipling's "Plain Tales from the Hills"; others—e.g., "A Question of Method"—Anthony Hope's "Dolly Dialogues." But they have also a spirit of their own; they are no mere copies. It is a fresh and exhilarating book.——The preface to a twelfth edition of *Round the Red Lamp*, by Sir CONAN DOYLE (London: Methuen and Co., Limited. Pp. 224. Price 1*s*.), consists of an extract from a letter by him to an American correspondent, in which he says: "The province of fiction is to treat painful things as well as cheerful ones. The story which whiles away a weary hour fulfils an obviously good purpose, but not more so, I hold, than that which helps to emphasise the graver side of life. A tale which may startle the reader out of his usual grooves of thought and shock him into seriousness, plays the part of an alterative and tonic in medicine, bitter to the taste, but bracing in its results." An excellent statement of the case, so long as judgment is exercised in the selection of the patient for the remedy. But as a book about medical men by a medical man the "facts and fancies of medical life" detailed in "The Red Lamp" have proved, and will doubtless continue to prove, interesting reading for medical men. ——A decidedly interesting story to while away a leisure hour is *A Giver in Secret*, by THOMAS COBB (London: T. Werner Laurie. Pp. 253. Price 2*s*. net). The secret gift on which the title is founded is an unknown benefaction of £500 to a charming young orphan daughter of an adventurer, at the very time when certain facts point to her as the possible thief of jewels from the cousin of the man to whom she is engaged. The sudden change in her circumstances, which she can explain only by what appears to be a cock and bull story, naturally leads to complications, the serious effects of which, however, disappear on the arrest and confession of the actual thief. But there is no anti-climax even then, for interest is still retained while seeking the anonymous giver. The story is well told, except for a certain trying tendency to run on without break or stoppage in the same chapter to events that are subsequently discovered to involve a change of time and place from that under consideration in the preceding sentence.

Of books of personal reference one would think there was an ample supply, what with "Who's Who," and various professional, philanthropic, artistic, literary, and other Guides and Directories. Yet the *Personal Calendar, a Monthly Index of Political, Official, and Social Changes* (London: E. Mansfield and Co. No. 1, January, 1912. Price 6*d* monthly, by post 7*d*), fills an undeniable lacuna. Year books of personal reference clearly become more and more out of date with each passing month. Fresh births, deaths, marriages, appointments, retirements, promotions, and honours occur from day to day, and the task undertaken by this unpretentious little pamphlet is to keep the year books fully up to date. The cumulative index of names, which occupies nine columns of small print, shows how much has been condensed into 34 pages. In addition to the January happenings there is also a December supplement, suggested by the fact that annual books of reference go to press some weeks before their nominal date of publication, Jan. 1st. It is possible that this little work will soon become as indispensable as our annuals now are.—— Another reference work is *The Matriculation Directory* for January, 1912, published by the University Correspondence College, Burlington House, Cambridge, and Red Lion-square, London (price 1*s*.). It supplies the intending graduate of the University of London with a summary of the regulations governing the various examinations for degrees and with the questions set at the last matriculation examination. Answers to these questions are fully worked out and, where necessary, illustrated. Information is also given as to the scope and relative difficulty of the obligatory and optional subjects.—— Most medical men at some time or another require information as to the different Insurance Offices. The *Insurance Register* (*Life*) for 1912 (London: C. and E. Layton. First edition. Pp. 152. Price 1*s*), now in the forty-third year of publication, will give them information as to the various English and American Companies, a Directory of Companies, general statistical information, the comparative rates of the various offices, and such like. It is proposed in future to issue three editions in each year—in January, May, and September respectively.——*Layton's Handy Newspaper List* for 1912 (London: C. and E. Layton. Pp. 167 Price 6*d*) is now in its twenty-second year of publication. It gives the titles, price, date of establishment, politics or class, and address of all the principal daily, weekly, monthly, and quarterly papers and periodicals in the United Kingdom. The towns in which the various journals are published are aranged alphabetically, with the exception of London, which comes first.

JOURNALS AND MAGAZINES.

Quarterly Journal of Experimental Physiology. Edited by E. A. SCHÄFER, F. GOTCH, W. D. HALLIBURTON, C. S. SHERRINGTON, E. H. STARLING, and A. D. WALLER. Vol. IV., No. 4. London: Charles Griffin and Co., Limited. 1911. Pp. 305–397 + vii. Price 6*s*.—1. Kenneth Mackenzie (Freeland Barbour Research Fellow, Physiological Laboratory, University of Edinburgh): An Experimental Investigation of the Mechanism of Milk Secretion, with Special Reference to the Action of Animal Extracts. After a short introduction on what was previously known regarding the origin and mode of conveyance of stimuli influencing the growth and secretory activity of the mammary gland, the author describes his own experiments. The first person to show conclusively that animal extracts containing hormones may directly stimulate the mammary secretion was Ott, of Philadelphia, who found that "infundibulin is a galactogogue" (October, 1910) The author made extracts of the following five organs and injected them into a vein in cats in varying stages of lactation: pituitary body, corpus luteum, pineal body, lactating mammary gland, and involuting uterus. The mammary gland is, as regards its secretory activity, not under the direct influence of the nervous system, so that the agents which excite or inhibit its activity reach it by means of the blood-stream. The five organs above enumerated produce hormones which stimulate the activity of the gland, and in this respect the galactogogue substance of the posterior lobe of the pituitary body is most powerful. This substance is not specific to mammals, it is also present in the pituitary gland of the

bird. Hormones which inhibit the milk secretion are produced by the fœtus and placenta. Drugs, such as pilocarpine, which cause marked activity of most other glands, and others, such as atropine, which inhibit most glands, have no effect on the secretion of the mamma. The author comes to the conclusion that there are no secretory nerves in the mammary gland, a conclusion supported by the fact that neither section of the nerve trunks supplied to this gland nor their faradic stimulation appears to have any influence on the secretion of milk. 2. T. Graham Brown (Carnegie Fellow), Physiological Laboratory, University of Liverpool: Studies in the Physiology of the Nervous System (No. IX.); Reflex Terminal Phenomena; Rebound; Rhythmic Rebound and Movements of Progression. This is a most elaborate research into the phenomena which occur in that phase of a reflex action which immediately succeeds the cessation of the stimulus, and persists until the primary state of balance is again attained. It is a continuation, extension, amplification, and verification of much work already done and foreshadowed by Sherrington, with the addition of much new matter on a very important, but highly technical, aspect of reflex action. It is an extremely thorough piece of work, which cannot be summarised, indeed the author's own "summary" extends to three pages. It will be specially interesting to physiologists and neurologists, who, however, must be conversant with the nomenclature of the subject in order to follow with profit the intricacies of the problems so fully illustrated and discussed. This part also contains the index for Vol. IV.

Reports and Analytical Records.

FROM

THE LANCET LABORATORY.

EUCERIN.

(P. BEIERSDORF AND CO., 7 AND 8, IDOL-LANE, LONDON, E.C.)

EUCERIN is a very interesting fatty substance which is described as the "hydrophile" of wool fat—that is to say, it is the constituent chiefly responsible for the water-absorbing properties of lanoline preparations. It has been shown that the water-absorbing capacity of wool fat is not due to the cholesterin bodies, but to other wool-fat alcohols. Recently these alcohols have been isolated in a more or less pure state, and the result is a product which forms the active water-absorbing basis of a cool and soothing ointment. It suffices, for example, to mix but 2 per cent. of it with vaseline to form a fatty mixture which will absorb as much as 500 per cent. of water. It is obvious that there is a wide field for eucerin, because it presents clear advantages over fatty bases hitherto in use. Being a powerful absorbent of water, it follows that it will have cooling soothing properties, while it is practically odourless and free from liability to become rancid. Anhydrous eucerin is a jelly-like looking mass which readily takes up water, forming a pure white creamy-looking paste. It is perfectly compatible with a good many medicaments of acknowledged value in the treatment of skin diseases.

(1) PATENT BARLEY; AND (2) PATENT GROATS.

(KEEN, ROBINSON, AND CO., LIMITED, DENMARK-STREET, ST. GEORGE'S-IN-THE-EAST, LONDON, E.)

1. This method of preparing "patent barley" is neat. The facility, for example, with which barley water may be prepared from it renders it very economical in use; it yields its important constituents to boiling water more readily than ordinary pearl barley. Barley water possesses properties the reason for which do not clearly appear. It is well known, for example, that it assists in the assimilation of milk in infant-feeding by preventing apparently the casein from separating into large clots when it comes into contact with the acid juices of the stomach. It also acts as an agreeable demulcent, a property which is probably due to substances other than starch, while being a wholesome and refreshing beverage. 2. "Patent groats" offer advantages similar in character to patent barley. They are free from cuticle and irritating particles and yield a maximum amount of their food constituents when prepared in the ordinary way. The sample examined was free from a certain oily smell which ordinary oatmeal sometimes possesses, and the result, after cooking, is a gruel, bland and smooth in character.

(1) SPECIAL OIL SILK; AND (2) WATERPROOF SHEETING.

(NEW PEGAMOID, LIMITED, 134, QUEEN VICTORIA-STREET, LONDON, E.C.)

The fabrics submitted to us proved to be excellent examples of oil silk. They are impervious to water and resist perfectly the action of the antiseptics commonly used in medical practice. We made a number of experiments, endeavouring to act upon the material with solutions containing respectively carbolic acid, corrosive sublimate, formaldehyde, boric acid, iodine, and so forth. There was no destructive action in any case, but iodine led to a slight discolouration. Even hot alcohol did not appear to take out any serious amount of the wax veneer. Boiling water, although in the presence of antiseptics, does not harm the material. The specimens submitted to us comprised a series of oil silks of different colours and a waterproof sheeting which seems to us to be very well adapted for hospital work. When heated with caustic alkali the waterproof coating was removed and left behind a pure cotton fabric. The alkali contained a fatty acid.

JUNORA.

(MESSRS. HUMPHREY TAYLOR AND CO., 45, NEW OXFORD-STREET, LONDON, W.C.)

This is described as a wine containing products derived from lecithin-ovo, and the description was confirmed by our analysis, since it disclosed the presence of choline and of organic phosphates. By suitable treatment the crystalline platinum salt of choline was obtained. Further, when analysis was directed to the separation of ordinary phosphates from organic phosphates, the total phosphoric acid found (P_2O_5) on complete oxidation was 0·0461 gramme per 100 c.c., while the phosphoric acid due to inorganic phosphates was found to be 0·0220 gramme per 100 c.c. The difference therefore, 0·0241 gramme, represents the phosphoric acid present in organic combination (glycerophosphate). The presence of organic phosphates explains the claim made for this wine in regard to its value in nutrition. The amount of organic phosphoric acid found represents a little over 1 grain of lecithin per fluid ounce, since lecithin contains 8·8 per cent. of phosphoric acid. The lecithin employed is prepared from egg yelk by a process which we have seen in operation. Further examination gave the following results. Alcohol by volume, 16·24 per cent.; extractives, 9·48 per cent.; sugar, 7·35 per cent.; glycerine, 0·574 per cent.; volatile acidity reckoned as acetic acid, 0 12 per cent.; fixed acidity reckoned as tartaric acid, 0·27 per cent. The basis is a sound wine of a delicate character.

DECODOL.

(AGENTS: THOS. CHRISTY AND CO., 4, 10, AND 12, OLD SWAN-LANE, UPPER THAMES-STREET, LONDON, E.C.)

Decodol is described as a dry emulsion of cod-liver oil, protein, and carbohydrates, a description which was borne out by analysis. We found it to contain moisture, 6·72 per cent.; mineral matter, 4·68 per cent.; cod-liver oil, 28 00 per cent.; carbohydrates, 26·56 per cent.; protein, 34·04 per cent. Decodol is a light brown powder with oily

touch and smell. It is a highly nutritive compound which should have many special purposes.

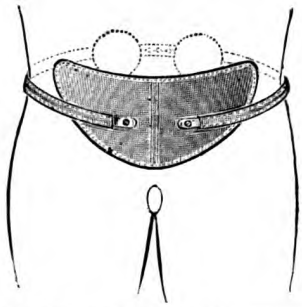
PROTEIN FOOD WITH ORGANIC PHOSPHATES.
(R. HOGG AND SON, 1, SOUTHWICK-STREET, LONDON, W.)

Our examination of this food confirmed the description of it to the effect that it is prepared with casein and glycerophosphates. We found it to contain 76·55 per cent. of protein, 7·90 per cent. mineral matter, and 14·30 per cent. moisture. The mineral matter contained a little more than half its weight of phosphoric acid. The preparation is well made and an important feature about it is that it softens very readily with water, forming a uniform pulpy mixture to which milk or water can be added. The powder is thus uniformly distributed, and the fluid so prepared is free from coarse lumps or unsoftened particles.

New Inventions.

A NEW ABDOMINAL SUPPORT.

THE abdominal support here illustrated has been designed in accordance with the suggestion of Mr. Arbuthnot Lane, with the object of providing a constant support in enteroptosis, visceroptosis, post-operative cases, floating kidney, anteversion of the uterus, varying forms of hernia, and so forth. It consists of two triangular aluminium plates with the vertical edges running parallel to each other and hinged together by a covering of soft leather. The pressure pad thus formed for covering the whole of the lower abdomen is kept in place by two half circular springs which are pivoted to the plates in front and terminate at the back in two soft elliptical pads.

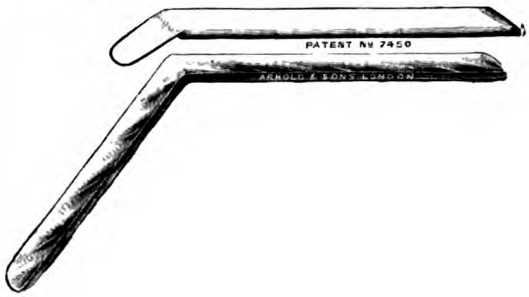


These back pads help to distribute the pressure, which can be varied by the use of light or heavy springs. The direction of the pressure can be varied by altering the position of the springs. The support fits comfortably to the body, and the advantages which are claimed for it are: direct antero-posterior pressure of any desired degree; the springs being shaped to fit the pelvis, there is no binding or cramping the hips; it will keep its position on almost any shaped abdomen, without the use of perineal straps; it is applied or removed by means of one strap and stud, and is easily done in half a minute; being made of metal it has a longer life than any ordinary belt, without being any heavier.

Messrs. Walton and Curtis, 190, Broadhurst-gardens, West Hampstead, London, N.W., are the manufacturers.

ENVELOPE FOR TONGUE DEPRESSORS.

MEDICAL inspection of school children has its own problems, and one of these is the efficient examination of the throat without the risk of carrying infection from one to the other by the tongue depressor. Boiling or steaming the instrument is in nearly all cases impracticable. Disinfection by chemicals has many disadvantages. To obviate these a great number of medical officers use wooden depressors which are burned immediately after use. This is a safer and cleaner method than by the use of one common depressor for all, whatever the disinfectant employed. Wood, however, has also its disadvantages: it is too bulky for carrying about; it is not pure white and so does not reflect the light; and where there are no open fires, and in summer time when there are no fires at all, there is a practical difficulty in getting them burned. A very simple expedient, and one which has several good points in its favour, has been patented and placed on the market by Messrs. Arnold and Sons, Giltspur-street, London, E.C. It consists of an envelope made of specially prepared paper which fits on to an angular depressor. The portion applied to the tongue is of double thickness, so that there can be no risk of organisms passing



through. At the proximate (open) end there is a "tab" on which the finger rests to steady the envelope. This also serves as a catch by which to pull off the envelope after use, thus preventing any portion which has been in the mouth coming in contact with the medical officer's fingers. The small amount of room they occupy in the wallet, the enhanced "illumination" of the throat by the white paper, the facility with which the envelopes can be burned and disposed of, together with the efficiency in preventing throat-to-throat infection, should make this little contrivance a most useful item in the school medical officer's outfit. The same advantages will also commend it to the general practitioner.

DONALD MURRAY, M.B., C.M. Glasg., D.P.H. Aberd.
Stornoway.

FOREIGN UNIVERSITY INTELLIGENCE.—*Berlin:* The chair of Mental Diseases, until recently held by Dr. Ziehen, has been offered to Dr. Karl Bonhoeffer, Professor of Psychiatry in the University of Breslau, who was formerly Professor in Königsberg and afterwards in Heidelberg. As he is only 43 years of age his promotion has been remarkably rapid. If he accepts the present invitation he will have occupied the chair of his specialty in four German universities in nine years.—*Breslau:* Dr. Erich Feiler has been recognised as *privat-docent* of Odontology.—*Prague:* Dr. Alexander Skutetzky, a military surgeon in charge of the medical wing of a garrison hospital, has been recognised as *privat-docent* of Medicine.—*Rennes:* The chair of Chemistry has been divided into two, one of Analytical and Toxicological Chemistry, and one of General Chemistry, Dr. Lenormand, the present professor, taking the first, and Dr. Laurent, Professor of Pharmacy, the second. To the chair of Pharmacy Dr. Perrier has been appointed.—*Vienna:* It is now stated that Dr. v. Noorden, one of the professors of medicine, will not leave Vienna for Frankfort, as he was expected to do.

STATE AID FOR RESEARCH IN MENTAL DISORDERS.—At a meeting last week the visiting committee of the Cardiff Mental Hospital passed a resolution expressing its opinion that it was desirable that State aid, in the shape of grants, should be sought in the domain of research in mental disorders, such grants to be distributed through the Commissioners in Lunacy, as is done in the case of research in public health through the Local Government Board. It was pointed out that such research is liable to be expensive, and, since it is of national and not merely of local importance, it does not seem reasonable that local authorities should have to find all the funds. The results of researches made with the aid of such grants would be published in the Lunacy Blue-book. A further resolution was recorded to the effect that the town clerk circularise the public asylums and registered hospitals of England and Wales with a view to ascertaining whether they were prepared to join, in the first place, in approaching the Commissioners in Lunacy in the matter in order that the latter might make a representation to the proper quarter.

THE LANCET.

LONDON: SATURDAY, MARCH 9, 1912.

The National Insurance Act and the Modern Interpretation of the Hippocratic Oath.

THE famous "Oath" of HIPPOCRATES is probably the earliest extant recognition, on the part of a distinguished practitioner of medicine, of the nature and extent of the obligations of the members of his calling towards their predecessors, their patients, and the public; and it is interesting just now to inquire in what degree the principles underlying it may be considered to have stood the test afforded by the experience of some 2300 years, and to retain their applicability to the conditions of our present environment. At a period when instruction in the healing art is not only readily available, but is offered in return for payment by many competing schools and institutions, it is perhaps unreasonable to regret the weakening of the bond between teacher and pupil which has manifestly occurred since the "Oath" was framed; and there is still much reason to hope that, although the pupils at a modern hospital and school no longer regard the physicians and surgeons of the staff as being "equally dear to them as their parents," they nevertheless retain towards many of them very strong feelings of affection and respect, founded upon a correct appreciation of their several characters and endowments, and upon a grateful recollection of the benefits conferred by their teaching. The expressions of personal regard which have been evoked during the last few weeks by the deaths of Lord LISTER, Sir HENRY BUTLIN, and Sir WILLIAM ALLCHIN prove that the sentiment enjoined by HIPPOCRATES is strongly developed with us. The undertaking to impart a knowledge of the healing art, with certain filial exceptions, only to "disciples bound by a stipulated oath," manifestly contains the germ of the obligation now entered into by the newly affiliated in many of the modern licensing bodies, in the shape of a promise to maintain the honour of the fraternity into which they have been granted admission, and to bear themselves in a manner worthy of the members of a benevolent and honourable calling. And, if we may assume that the "stipulated" oath was identical in its terms with that in which it is referred to, we find that it simply amounts to an undertaking to practise uprightly and honourably, to live cleanly, to refuse assistance to would-be poisoners, abortionists, or suicides, and to preserve secrecy with regard to the private affairs of patients and of their households. We must perforce admit that the increased complexities of modern life have added to the responsibilities of practitioners, and have created new standards of duty in relation to contingencies of various kinds; but the fact remains that the foundations of these standards are as old as the practice of medicine, and that they were plainly set forth by the father of our art before the visible dawn of the Christian ethics which they nevertheless embody. The most upright of modern practitioners might add to the "Oath" of HIPPPOCRATES in matters of detail, but could take nothing away from it, and would be compelled to admit that his additions were of detail only, and were, in all essentials, practically comprised within the simple and stately language of the original.

A remarkable omission from the "Oath," however, regarded by the light of more modern experience, is that it contains no explicit reference to the duties of practitioners towards each other, an omission probably due to the comparative scarcity of physicians at that period of the world's history, and to the consequent rarity of the occasions on which they could be brought into collision. But circumstances having changed, and human nature being what it is and always has been, we now have the difficulties among us engendered by professional competition. The claims of rival medical practitioners are necessarily of a kind only too likely to lead to the mortification of him who fails to make good his ascendancy, and mortification too often means loss of self-control, with loss of dignity to follow it. But we conceive that the very requirement of the stipulated oath from pupils, between whom it must have formed a bond of considerable tenacity, was in itself a definite, even if only an implicit, recognition of admission into a brotherhood; and it is probable that the matrons of Cos, however critical of the way in which a practitioner should behave, were afforded but slender opportunities of instituting damaging comparisons between candidates for their fees, who would almost certainly have been taught that the only way to secure the respect of the public was to show respect to one another. We greatly doubt whether the physicians of the Hippocratic era would have suffered loss of self-command to lead them into the spitefulness of opponency which unfortunately became characteristic of a period of brilliant literary and scientific awakening in Europe and in England, a period which furnished MOLIÈRE with his medical types, and which survived in this country at least until after the exchange of bitter epigrams between Dr. GEORGE CHEYNE and Dr. WINTER, or the publication of the successive editions of Dr. GARTH'S "Dispensary." May we not now recognise a return to the self-control and forbearance of an earlier age, and an increasing recognition of the duty of respecting the position assumed by brethren in the art, even on occasions when we cannot recognise its complete advisability or accuracy. The gifted President of the Royal College of Surgeons of England, whose loss we have lately had to deplore, is quoted as having declared that the medical man has three duties, "his duty to his patient, his duty to his profession, and his duty to himself." The Hippocratic Oath seems to us, in its essential characters, to leave none of these duties unregarded or unprovided for, and those who abide by its prescription will find themselves in possession of a code as practical as it is inspiring.

And if ever there was a time in which it was necessary to strengthen the tie of professional brotherhood by every

argument which can be founded either upon the precepts of antiquity or upon the experience which has been garnered since those precepts were originally framed, surely that time is the present. We are face to face with the fact that an Act of Parliament has been passed which, though professedly framed for the encouragement of national thrift, in its present shape threatens the very existence of the profession of medicine. Important sections of this Act might entail, if they were carried out in the manner intended by those who framed them, and if no safeguarding regulations are forthcoming, the committal of many thousands of the labouring population of this country to the professional care in sickness of medical men who would be so badly remunerated as to render it impossible for that care to be in any way representative of present day standards either of diagnosis or of treatment. Even in the existing state of public business such an Act could hardly have been passed had it not been for the appalling ignorance of the average politician on all matters connected with or arising out of science; an ignorance which, in relation to health questions, was lately declared by a medical writer to be dependent on the fact that the average member of the House of Commons had usually obtained his notions of medicine in the nursery, and from a nurse to whom they had been handed down by her grandmother. Throughout the debates on the Act there was displayed by speakers on either side of the House little clear comprehension of the essentially scientific character of good medical work, of its difference in point of principle either from a handicraft, in which any common man can acquire proficiency, or from a profession like the law, in which every point hitherto decided is set down in books, and is so available for reference as often to place the novice on the same plane as the more experienced. But it was allowed in the House of Commons, in words, that no man of ordinary capacity can do his duty to the sick under the continued pressure of sordid cares, and hence that a proper remuneration of the medical profession, as a body, is essential to a complete utilisation of their powers as guardians either of private or of public health. A serious diminution in the aggregate of medical incomes, especially occurring at a time when many of the necessities and comforts of life are steadily rising in price, would immediately check the flow of students from the classes which now chiefly furnish them; would compel a lowering of the cost, and a consequent impairment of the quality, of medical education; would recruit the profession from the comparatively untaught; and would not only lower the moral and the intellectual tone of its followers, but would place grave impediments in the way of research and of discovery. From such evils as these it is the duty of all practitioners to protect at once their own body and the public, and they can only do so effectually by presenting a united opposition alike to menaces and to blandishments, and by absolutely refusing to take any contracts under the Act except upon terms which will yield a proper and reasonable return. Our duties lie in the future, and in such a display of unity in our ranks as may convince the most sceptical of our determination, and may show that the brotherhood, which is at least indicated in the spirit of the Hippocratic Oath, has survived the lapse of centuries without diminution or decay.

The Discovery of Anæsthesia.

IN an interesting paper, the first part of which appears in another column, Dr. DUDLEY W. BUXTON urges the right of Dr. CRAWFORD W. LONG to be regarded as the pioneer of anæsthesia. The other protagonists are relegated to a position less prominent, as whatever their claims CRAWFORD LONG had anticipated them in the discovery. The dramatic events following CRAWFORD LONG'S pioneer work are grouped about HORACE WELLS, C. T. JACKSON the chemist, and W. T. G. MORTON. None of these men, it appears, knew of CRAWFORD LONG'S work, and only one of them, JACKSON, possessed any scientific knowledge concerning ether. WELLS in 1844 had noticed that during nitrous oxide inhalation those who inhaled became unconscious of pain. He determined to administer the gas, doing so from a bladder, to assuage the pain of tooth extraction. The trials proved successful, and he with MORTON, who had been his pupil and partner, gave a public demonstration. This was, however, a fiasco, and apparently WELLS forsook his "discovery."

MORTON still sought for practical anæsthesia. Having terminated his partnership with WELLS he built up a lucrative practice as a dentist and aspired to a medical qualification. This ambition brought him into touch with JACKSON, whose pupil he became. Chloric ether was commonly used by dentists, and MORTON noticed that after applying it to the tooth the gum tissues were obtunded. This suggested the use of chloric ether as an anæsthetic, and so JACKSON experimented with it, but when employed for human beings it was a failure. It will be recalled that this same drug was tried in some London hospitals soon after SIMPSON'S announcement of his success with chloroform, but again its use was accompanied by failure. Nothing daunted, MORTON requested JACKSON to supply nitrous oxide for his patients. The latter suggested sulphuric ether as being easier to obtain and kindred in action. JACKSON knew these facts as common knowledge among chemists. MORTON was unaware of the action of ether and, possessed by the courage of ignorance, he obtained sulphuric ether and experimented with animals. Success attended his efforts. The next step was to test his discovery upon himself. Inhaling from a long-necked bottle—"Morton's sucking-bottles," as Dr. WESTCOTT so contemptuously termed them, when "Morton-baiting" had become a fashionable pastime among dentists in Boston—he became nearly asphyxiated. Then a handkerchief soaked in ether was substituted and alone in his room MORTON felt himself passing into unconsciousness, as he describes it, with a sickening horror lest there should be no awakening. He had noted the moment of commencing to inhale, and when he awoke he found that he had been unconscious for seven minutes. Such experiments done on oneself evince courage and grit, even if the supreme dangers courted are but vaguely appreciated. That same night to MORTON came EBEN FROST to have a tooth extracted, and, being a fearful soul, he begged to be mesmerised. The chance had come; MORTON'S assurance of "something better than mesmerism" appealed to the man with the aching premolar whose state brooked of no delays. The ether was given, the tooth taken out, and FROST

remained stark in the chair. Again the haunting horror assailed MORTON—was the man dead? MORTON applied the water test by emptying a bowl in FROST'S face. This happily caused a rude awakening, and MORTON hoped that for him had come fame and fortune.

It is interesting to note that, as BIGELOW relates, MORTON'S first essay to etherise a private patient in a surgical operation nearly ended in disaster. Luckily MORTON knew his medical shortcomings and had asked BIGELOW to be present, who happened to observe that over-stimulation had resulted in circulatory exhaustion, and observed it in time. In 1846 MORTON obtained permission to demonstrate "Letheon" in the Massachusetts General Hospital, and WARREN removed a venous tumour. Other equally successful demonstrations took place, and the world acclaimed "Letheon," alias sulphuric ether, to be a success. No one would willingly depreciate the credit due to MORTON for his perseverance and courage. His position as a person knowing practically nothing of the scientific side of anæsthesia was none the less an easier one than was that of CRAWFORD LONG, for the former had brilliant surgeons to support him, while the latter, in a remote country township, was divorced from sympathetic professional brethren. The facts as we know them seem to support the thesis that CRAWFORD LONG, without external suggestion or support, elaborated the idea of ether anæsthesia and successfully practised it before anyone else; that HORACE WELLS initiated nitrous oxide anæsthesia two years later, but did not recognise that though his theory was correct his technique was so faulty as to be foredoomed to failure; that JACKSON passed on second-hand knowledge to MORTON, but had no part or lot in the practical application of that knowledge to produce anæsthesia; and lastly, that MORTON, although actually years behind the true discovery of anæsthesia, yet gave up his lucrative profession and applied the energies of his life to the promotion of what he regarded as his own discovery—ether anæsthesia. He possessed courage, resource; he experimented and he succeeded, having the backing of powerful friends.

Annotations.

"Ne quid nimis."

THE MENACE OF THE COAL STRIKE.

THE complete stoppage of the national coal-supply at its source has already become a terrible menace to the health as well as to the prosperity of the country. Business has been dislocated in a thousand quarters, and in many has definitely come to a standstill. Vast numbers of workers whose industry is bound up with the coal-supply, sometimes only in an indirect manner, are being thrown out of employ, or are labouring from day to day on short notice. Concurrently with this cessation of wages the price of food and fuel and of other necessaries is rising, and must continue to rise while the terrible position lasts. Not that the position can last much longer as it is; inevitably, unless relief comes, the approaching condition will be much worse than the present. Difficulties and delays in transport and production must soon lead not only to a general advance in prices, but to an actual shortage of supplies, and what this will mean to the sick and the young requires no exposition in a medical journal. The interference with the sanitary services and water-supplies of the community, to which we alluded a fortnight ago as forming the gravest threat to the health of the country, has already commenced, and those who know the possible gravity of the situation require all their calmness to wait silent day by day for the signs of a more reasonable and humane spirit among those responsible for our perilous plight. But that calmness must be maintained. Upon the sick, upon those who have the care of the sick, upon the over-worked, and upon the poorly paid, the mere tension engendered by the necessary self-control will have its evil effect, an effect that the statistics of mortality will assuredly reveal to us; but it is absolutely necessary that all who are rendered by more favourable circumstances strong enough to bear the strain should bear it calmly. Scurrilities against coal-miners and coal-owners, Premiers and Chancellors, Tories and Socialists, may temporarily relieve the ass who utters them, but they add to the anxieties of the ass who believes them. This is not the time for wild and whirling words: it is the time when those who feel that they can help their weaker brethren should take thought as to the most practical way in which their services can be rendered.

AN "APOCRYPHAL" MIRACLE EXPLAINED.

A CASE has recently been described in the Danish medical press[1] which, according to a correspondent, throws light on a miracle related in the Apocrypha. The patient was a man of 77, whose right lens was completely cataractous, but whose eye was otherwise normal. The cataract, which had existed for about eight years, had not been operated upon, as it did not interfere with the patient's work as a road-mender and as the sight of the other eye was excellent. While at work in his garden one day the patient had occasion to rub his right eye several times on account of sweat which had trickled into it. He awoke next morning to find that the sight of his right eye was restored; his wife and neighbours also remarked that his eye no longer looked grey. On examination by a doctor five days later nothing was to be seen of the lens till the patient looked down, when it was seen as a grey, shining body floating in the vitreous humour at the bottom of the eye, where it moved with the movements of the eye. On certain movements of the eyeball the lens appeared covering half the pupil, but it quickly slipped back into its former position at the bottom of the eye. The capsule of the lens was nowhere to be seen, nor was the eye painful or tender on pressure. The vision of the patient's right eye gradually improved, and during an observation period of over a year no inflammatory reaction or increase of the intraocular pressure occurred. The miracle related in the Apocrypha happened, of course, to Tobit, who slept with his eyes open in the courtyard of his house. A passing swallow discharged its fæces into his eyes, both of which became covered by a white membrane. His physician could do nothing for him, but his son, called Tobias, meeting the angel Raphael, was conducted by him to the river Tigris, where he caught a large fish the gall-bladder of which he was told to open. The bile was dripped into the father's eyes, when the covering membranes fell off, after the patient had rubbed his eyes violently. Professor Greef in his account of this miracle as portrayed by Rembrandt, suggests that Tobit must have suffered from a pterygium, as this is a common condition in the East, and as the disappearance of a white membrane is mentioned. He negatives the possibility of the condition being due to cataract, which cannot, he states, be cured

[1] Jespersen, Hospitalstidende, Dec. 3rd, 1911. Lundsgaard, ibid., Dec. 20th, 1911.

by external manipulation. The painting by Rembrandt in Brussels depicts the young Tobias performing an operation for cataract on his father. In the Lutheran translation of this miracle the word leucoma is freely translated as cataract, which is retained in the Dutch Bible of to-day. Greef's hypothesis is the less credible, as it is highly improbable that bile rubbed into the eye could remove a pterygium, whereas it is conceivable that old Tobit rubbed his eye vigorously after the instillation of bile, and that he thereby dislocated his lens. If this be the correct interpretation, Rembrandt's painting is at fault only with regard to the cataract needle held by Tobias. The painting is the best portrayal of an operation for cataract which has hitherto been made, and Rembrandt was presumably assisted by v. Meekren, an old pupil of Tulp, whose views as to the impossibility of curing cataract by external manipulations probably coincided with those of Greef. According to yet another theory Tobit suffered from a serpiginous ulcer of the cornea which is treated to this day with the instillation of bile. But such a cure cannot have been so spontaneous and rapid as the restoration of sight by the dislocation of the lens which, as the above case shows, may occur with that suddenness which is one of the essential features of a miracle.

THE PROBLEM OF THE DIPHTHERIA CARRIER.

THE importance of the apparently healthy carrier of infective organisms in regard to the spread of many specific infectious diseases has become increasingly apparent since attention was first drawn to the question in the case of enteric fever. The recognition of this factor in their spread has opened out a new field of work in the prophylaxis of some of these diseases. In none is the problem of greater importance than in the case of diphtheria, and the difficulties in the way of dealing with the carrier of the bacillus of this disease render any careful study of this question noteworthy. We have received a monograph entitled "A Study in Epidemiology illustrated by a Diphtheria Epidemic," privately published by Dr. Angus Graham Macdonald, in which, among other matters, this question of carrier cases is considered in some detail, and in which a scheme is suggested for endeavouring to deal with it. The basis of his observations is afforded by a careful study of an epidemic of this disease occurring in Crewe during the months from March to August, 1910.[1] Ninety carrier cases were isolated in association with 157 cases notified. The contacts were divided into home and school contacts, and there were 534 of the former yielding 62 positive cases or carriers, and 644 of the latter with 28 carriers. In addition 774 bacteriological examinations for release from quarantine were carried out, yielding a total of 2326 examinations. All school-carriers were found to be intimately associated at play with other cases and with carriers, but mere class-room proximity was found to be of little importance as a factor in spreading the disease. The evidence also goes to show that very intimate means are necessary for the transmission of diphtheria from one individual to another—a point which Dr. Macdonald regards as of great importance in indicating how readily the dissemination of the disease may be prevented by prompt bacteriological examination and detection of positive contacts or carriers. These carriers are divided by the writer into four definite groups—first, those who show no clinical evidence of diphtheria in whom the bacillus is found for a short time; second, cases in which there is a history of "cold" or "sore-throat" some time previously, these being probably neglected cases of diphtheria. The third group comprises patients without clinical history of diphtheria, but presenting some local lesion in the throat, nose, skin, or ear, in which the diphtheria bacillus finds lodgment, the commonest example being membranous rhinitis. The fourth group is made up by patients who have passed through a definite attack of diphtheria, and in whom the bacillus remains for lengthy periods after convalescence. The fate of the bacillus when it disappears is not obvious. There is no evidence of phagocytosis, and the suggestion offered as the most probable explanation is that it disappears as a result of the growth of some other organism. The administration of antitoxin appears not to influence the existence of the organism either in case or carrier. Dr. Macdonald sums up his observations upon carriers in a series of statements, among which we may mention that the length of carrier-life of the bacillus appears to have no effect upon its virulence, since the organism has been proved to be virulent after four and eight months in the ear and nose. He maintains that the control of diphtheria depends on the control of the carrier as well as of the case, and he urges that the carrier should be notified, no matter of what age or sex, and that due quarantine and observation should be maintained until satisfactory disappearance of the bacillus. He believes that a determined attack on the disease on the lines of thorough bacteriological investigation should have no difficulty in stamping out diphtheria altogether. He claims that the distribution of the disease which persists endemically is due to undiscovered carriers, and that epidemicity depends entirely on the number and nature of the carriers. After a critical examination of all the facts collected in relation to the particular epidemic investigated, Dr. Macdonald outlines his scheme for dealing with the disease. It affirms that a bacteriologist should be an essential member of the public health staff. He recommends isolation in a case as early as possible after notification and adequate disinfection. In the investigation of each case he advises a thorough inquiry into the history of the patient and into his environment, and urges that swabs should be taken from the patient, from all home contacts, and from as many outside contacts as possible. Until bacteriological reports are obtained all contacts are to be isolated. All contacts found to be positive are to be treated as cases of diphtheria. Dr. Macdonald's monograph is a thoughtful and suggestive study of a complex problem, and deserves to be carefully considered as a practical contribution to the study of preventive medicine.

[1] THE LANCET, March 25th, 1911, p. 795.

THE STUDY OF TROPICAL DISEASES.

A MEETING was held on Wednesday, Feb. 28th, at the Mansion House, by permission of Sir Thomas Crosby, M.D., the Lord Mayor of London, in support of the London School of Tropical Medicine, when Mr. Lewis Harcourt, the Secretary of State for the Colonies, delivered an impressive appeal for the public support of the school. He detailed the vast and valuable work which had been done in our far-off dependencies to mitigate the ravages of tropical diseases, or to discover and eliminate their causes, and claimed on good grounds that the keepers of the national purse had not been niggardly in their contributions to the work. A few days later H.S.H. Prince Louis of Battenberg, taking the chair at the annual dinner of the London School of Clinical Medicine, supplied additional arguments for public digestion why the people of this country should endeavour to support, and support profusely, the grand medical work now being done throughout the borders of our vast Empire. The medical services, Naval, Military, and Colonial, are now collaborating with

private workers and scientific missionaries from our universities and schools of tropical medicine in a manner that bears new fruit every day. The movement is the direct adjuvant to our rule as an Empire; for only by subjection of the inimical forces of disease can we as a nation come into full enjoyment of much territory that bears our name on the atlas, or discharge our duty as a superior race to those whom we have invited to depend upon us. Medical men have sacrificed their lives for this cause; the way for the public to make such sacrifices unnecessary is to facilitate the great object which medical men and sanitarians have in view, and support the multifarious movements now taking place to wipe out disease in our tropical possessions.

THE PAY OF THE PUBLIC ANALYST.

THE remuneration of the public analyst has seldom been upon a scale consistent with the training, skill, and experience which are required of him, but now that the practice of adulteration is becoming such a refinement, requiring a very elaborate series of operations for its detection, the scale of fees in many instances is wholly inadequate. There can be little doubt that modern methods of adulteration are often the product of a subtle scientific mind which discreditably turns its attention to the possibilities of eluding the control over the purity and quality of food, drugs, and drink provided by the Sale of Food and Drugs Acts. No analyst nowadays, if he is an honest man, dare certify that a sample, say, of butter is genuine without determining not only the amount of butter fat present, but the nature of the fat also, a process which involves considerable skill and attention. Then he will estimate the amount of water, curd, salt, and will search for preservatives, of which there are so many, and when found he will be bound to estimate the quantity in order to be able to say whether that is permissible. He is expected to do all this for, say, 10*s*. 6*d*. It may be urged that some compensation is arrived at because other samples which come before him may include substances which give very little trouble so far as their analysis is concerned. Accepting that for a moment, we doubt then whether the average fee for analysis is a fair remuneration for the high qualifications now required for the post. The days when 10*s*. 6*d*. was an ample reward for casting a specimen of suspect coffee upon the surface of water and noting whether some of the particles rapidly sank, colouring the water on their downward way, which meant the presence of chicory, are gone. The public analyst's work now is work of the highest scientific order; it must be done by a competent and conscientious man, otherwise the administration of the food laws must soon fall into disrepute. Slovenly practice must be impossible if discredit of the public analytical service is to be prevented. And there should be no temptation in the shape of totally inadequate pay to shirk the carrying out of a duty in a thorough and effective manner. The machinery which guards the purity and quality of our food-supply must be efficient, and it is impossible to purchase efficiency at rates which are so low as to give no recompense for training, skill, and responsibility. Only recently advertisements have come to our notice which invite qualified analysts to apply for a post which involves the analysis of 800 samples of foods and drugs per annum, and the remuneration offered is an annual sum of £150. In another instance the analyst is required to provide and maintain a laboratory himself, together with apparatus, chemicals, and assistance "as are necessary to enable him *adequately* and *completely* to execute the duties of the office." (The italics are ours.) The work means examining and reporting upon 2000 samples, formal and informal, per year and the remuneration offered is £500. The "informal" samples might mean the performance of some very elaborate analyses indeed, which at 10*s*. per analysis could not possibly meet the expenses of the "apparatus, chemicals, and assistance" laid down in the advertisement. The living wage is left entirely out of the proposition, and such a policy must sooner or later bring discredit upon a very important department of public service.

SUCCESSFUL ARTERIOTOMY FOR EMBOLISM OF THE FEMORAL ARTERY IN A CASE OF MITRAL STENOSIS.

THE recent operation of arteriotomy for embolism has not given the results which the remarkable experimental researches of Carrel led us to anticipate. Probably this is due to the fact that most of the operations have been done on aged subjects with diseased arteries containing long adherent clots. At a recent meeting of the Société de Chirurgie M. F. Lejars, commenting on the failure of the operation in one case, suggested that better results might be obtained in young subjects whose arteries were sound. At a meeting of the Académie de Médecine on Dec. 19th last M. Mosny and M. Dumont reported the following case in which this proved true, and fatal gangrene of the lower limb was prevented. A man, aged 38 years, was admitted into the Saint-Antoine Hospital suffering from cardiac dyspnœa. The heart was dilated and extended two fingers' breadth to the right of the sternum, the apex beat was in the anterior axillary line, the left auricle was manifestly dilated, and there was a presystolic thrill, but auscultation did not reveal any particular valvular lesion. The heart's action was very rapid and irregular. The liver was only slightly enlarged, and there was no dropsy or albuminuria. The patient gave a history of dyspnœa on exertion since childhood. Under rest and digitalis he improved, and a typical double mitral murmur could then be heard. The heart diminished in size and the arterial tension rose, but the pulse was still irregular. One morning, at 6 o'clock, when he was getting up for the tenth time since his admission, he felt a severe pain in the left calf, which he compared to an intense cramp. This rendered the whole limb powerless. When seen three hours later there were manifest signs of femoral embolism. The foot and leg, but not the thigh, were cyanosed, livid, and "marbled" in places, particularly on the great toe, by whitish completely ischæmic patches. The limb was cold as high as a well-marked limit four fingers' breadth above the patella. Sensibility was abolished up to the knee and movements of the foot and leg were impossible. No arterial pulsation could be felt in the limb except in the femoral artery in the upper part of Scarpa's triangle, Examination of the artery did not reveal any pain. Embolism in the upper third of the femoral artery, probably at its bifurcation, was diagnosed, and immediate operation was decided upon. Six hours after the onset of symptoms. under local novocaine anæsthesia, M. Georges Labey laid bare the artery in its upper third and incised it where it did not pulsate, and sensation of resistance showed the presence of a foreign body. The vessel was opened for a distance of one centimetre, and by compression a bifurcated clot extending from the common femoral into the superficial and deep femoral arteries was removed. The artery was sutured and the blood current was re-established. The operation, which took only a few minutes, was well borne. The limb was warmed by hot-air douches. Two hours after the operation the limb was warm and the cyanosis was diminishing. On the following morning the limb had regained its normal appearance, sensibility and motility had returned, and the popliteal artery pulsated. Thirty-six hours after the operation pulsation was distinct in the posterior tibial. At the time of the report (a month after the operation) the good result was maintained and the limb was quite sound, but the

patient was confined to bed by the condition of his heart which was dilated and irregular in action. M. Labey is to be congratulated on this remarkable success, but M. Mosny has gone too far in claiming this as the first successful case. In 1909 Dr. J. B. Murphy, of Chicago, in another case of mitral stenosis successfully removed an embolus from the common iliac artery, restoring the circulation.[1] This was a very daring operation in which it was necessary to catheterise the abdominal aorta and remove clot from it. The patient did not come under treatment until four days after an embolus was arrested at the bifurcation of the aorta; the limb was undergoing dry gangrene, and a line of demarcation had formed four inches below Poupart's ligament. Such complete success as in the preceding case was therefore impossible. Pulsation returned throughout the femoral artery, and amputation was performed at a lower level than would otherwise have been possible. Another and simpler method of treating arterial embolism has been used with success by French practitioners. It consists in breaking up the clot by massage *(pétrissage)* into small particles which are carried by the circulation to smaller arteries where a collateral circulation can be established, and they are no longer a source of danger. We reported a case of femoral embolism from mitral disease in which this was successfully done by M. Paul Claisse.[2] It is curious that this eminently rational and simple procedure has been overlooked, and the same treatment for arterial as for venous obstruction—rest—is recommended in the text-books. But this treatment could not have been adopted in the case now reported, because for success it must be adopted immediately after the embolism occurs.

FEBRUARY AT HOME AND ABROAD.

THE intense cold early in the month occurred when the barometer was low, a circumstance not usual in this country. Very severe frost sometimes happens with a low barometer, but it is generally quite transient, rarely continuing for more than 24 hours. But in the present case, although the glass was low, the pressure distribution was favourable for winds from some point between north and east, and the cold was, to a large extent, brought to these islands by the flow of air from those quarters. No sooner did the relative positions of the highest and lowest barometric pressure areas allow the air to flow from the south-east and south than the temperature rose rapidly to above freezing point, and as throughout the remainder of the month there was a continuous flow of air from between south and south-west the thermometer remained very high for the time of year, with the result that, in spite of the almost Arctic cold of the early days, the mean temperature was far in excess of the average for February. Very soon after the month began the frost became so severe that there are few occasions during the past 20 years which can furnish a parallel. The lowest thermometrical reading of the sheltered instrument in these islands appears to have been 4° above zero at Balmoral, but on the grass or snow the exposed thermometer sank to a few degrees below zero in several parts of the kingdom. At Norwich there was a reading of 3° below. Later in the month the thermometer rose to 50° and above with uncommon frequency for February, and on several occasions ascended to above 55° in the south and south-west of England, while the high figure of 60° was recorded at Great Yarmouth and at Birr in central Ireland. In the metropolis the mean temperature of the month was about 4° above the average. At Westminster and Greenwich the mean of the maximum readings was 49°, and at Kew and Hampstead 47°, while the mean of the minima was 38° at Kew, Greenwich, and Hampstead, and 40° at Westminster. These figures prove that as usual the central parts of London were appreciably milder than the outlying suburbs. Both at Greenwich and Westminster the thermometer rose to 50° or above on 19 afternoons, at Kew on 15, and at Hampstead on only 12. Comparatively few days were quite rainless, but the aggregate amount of the fall was not very much in excess of the average. The largest total was 1·76 inches at Hampstead and the smallest 1·39 inches at Kew. Over the country as a whole the rainfall exceeded the average and the sunshine was in default. In the southern and south-western counties of England this year has, so far, been very dull. In the metropolis last month there were 14 hours of bright sunshine in the City, 26 hours at Westminster, 27 at Hampstead, 35 at Kew, and 38 at Greenwich. Along the south and south-west coasts the figure, although much higher, was still below the normal, and on several days the sun was not seen at all. In the southern regions of Europe the earlier days of the month were more or less rainy, especially on the Riviera and in Spain. At Nice rain fell very frequently during the first nine days and yielded a total of 5 inches. Subsequently, however, the Riviera enjoyed the bright and warm sunshine generally associated with that favoured region. At Nice the mean afternoon warmth was 55° and that of the night 41°. This is rather warmer than the warmest part of this country, but at Biarritz the weather was more spring-like still, the mean maximum temperature being 61° and the mean minimum 46°. On no less than 17 days the thermometer in the shade rose to 60° or above, and occasionally touched 70°, while on the 28th it recorded the summer figure of 77°. Biarritz and its vicinity was, in fact, much warmer than and generally as bright as the Riviera and experienced less rain. At Paris the sunshine amounted to as many as 71 hours, nearly three times that at Westminster, and the mean maximum temperature equalled 51½°. The nights were, however, colder than in London, the mean minimum temperature being 37°. In Central Europe the frost of the early part of the month was more intense and continued longer than in these islands. Readings below zero Fahrenheit were common, while the maximum warmth of the days was below 20°. In Germany the lowest minimum appears to have been 9° below zero Fahrenheit at Munich.

HYPERTRICHOSIS AND SPINA BIFIDA OCCULTA.

IN the last number of the *Deutsche Zeitschrift für Nervenheilkunde* is an article by Dr. Erich Ebstein, of the Medical Clinic in Leipzig, on the occurrence of hypertrichosis in association with spina bifida occulta. The first of the two cases he describes was that of a young woman, aged 16, suffering from chlorosis. On examination it was found that over an area of the back corresponding to the third, fourth, and fifth lumbar vertebræ there was a lozenge- or diamond-shaped patch of long fair hair, which had been present since birth, and had often been cut. There was no abnormal pigmentation of the skin. No central nervous system symptoms were to be found. An X ray photograph, however, showed that the spinous processes of the first and second lumbar vertebræ were definitely bifid, while that of the third was displaced a little to one side. The second case concerned another young woman, aged 22, suffering from acute rheumatism. On examination there was found in the middle-line of the back, over the second dorsal vertebra, a patch of rather long dark hair. There was no reason to suppose that the condition had not existed from birth, though the patient was unable to give any account of it. No symptoms referable to the central nervous system were present. In this instance the radiographic picture was of considerable interest. The cervical spinal column, the ninth and remaining dorsal

[1] See THE LANCET, July 17th, 1909, p. 165.
[2] THE LANCET, Sept. 24th, 1910, p. 962.

vertebræ below, and the lumbar were all normal. The sacral canal, however, was patent in the lower three sacral vertebræ—an anomaly that has occasionally been noted in association with spina bifida occulta. In the dorsal vertebræ above the ninth there were noteworthy alterations. The intervertebral discs could not be clearly made out; the bodies of the vertebræ appeared to have ossified together, so that one could with difficulty be distinguished from another. The third to the eighth ribs, inclusive, on both sides, were unusually small and unusually close together. The spinous processes of these vertebræ could not be distinguished, while the transverse processes, specially on the right side, were remarkably thick. The first dorsal vertebra was considerably deformed. A number of cases of hypertrichosis and spina bifida occulta have been described. The anomaly must date back to an early period in intra-uterine life. In such cases radiographic examination furnishes indispensable aid. Not a few of the "freaks" who have at one time or another been exhibited in public have been cases belonging to this category. Dr. Ebstein refers to "the lady with the horse's mane," a Miss Bell Carter, of Kentucky, in whom an overgrowth of hair between the shoulders was associated with bifidity or rather incomplete union of the spinous processes of the second and third dorsal vertebræ. The reader who may be interested will find other instances in Gould and Pyle's "Curiosities of Medicine." One of the most curious cases of this kind, of which Dr. Ebstein appears to be unaware, was recorded by Sir William Gowers in the *Medico-Chirurgical Transactions*, Vol. XC., 1908. In his case the patient was a man, aged 41, with a unilateral growth of long hair over the cervical region, just to the right of the middle line. The area was triangular, its base corresponding to the middle line of the back. With this was associated motor paralysis of the right arm, and some analgesia corresponding in part to roots from the fourth cervical to the second dorsal. The diagnosis which Sir William Gowers made of congenital syringomyelia seems amply justified. There is no record, however, of an X ray examination in this instance. No imperfection of the cervical arches and spines could be felt.

THE OPTICAL CONVENTION.

THE scheme for holding an Optical Convention, which was launched a few months ago under the auspices of a privately formed committee, has now assumed something of a public character by the issue of a definite programme of work for the convention and a scheme for the bringing together of an exhibition of optical and allied instruments in June next. The promoters of this undertaking have received very strong support from the scientific world, and we observe with interest that an application which they made to the Board of Education for housing space for their exhibition received the support, among other distinguished men, of the President of the Royal Society, the President of the Royal Institution, the Astronomer Royal, and Lord Justice Fletcher Moulton. The Board of Education has acceded to this request, and the exhibition will be held in space to be provided in the buildings of the Science Museum at South Kensington. The committee, taking advantage of the powerful support which it has thus secured, is proposing to make an interesting new departure in connexion with the exhibition. It proposes to circularise the users of optical instruments throughout the United Kingdom, through the medium of the various scientific societies, with a view of promoting improvements in the design and manufacture of the optical instruments in present use. The scheme, as set out in a report now being circulated by the committee, is to obtain comments in the form of criticisms and suggestions from all and sundry whose practical working with such instruments enables them to contribute to the discussion on these points. The material so collected is to be submitted to a small and very highly qualified committee, who will consider, elaborate, and make public in the form of a report the substantial results of this inquiry. The scheme is an ambitious one and, so far as we are aware, represents an attempt at systematic coöperation between the men of science and the manufacturers in a mode and on a scale quite without precedent. It is difficult to say what may not be accomplished by this committee with the effective countenance of the Government on the one hand and of the leaders of scientific thought on the other hand. In the case of a body with less resources we should have thought the plan somewhat over bold, but the circumstances of the case make it reasonable to expect for the present committee success in its undertaking.

RUPTURE OF THE COMMON BILE-DUCT.

IN the *Australasian Medical Gazette* of Jan. 20th Dr. Owen F. Paget has reported a very rare result of being run over—rupture of the common bile-duct. A boy, aged 7 years, was run over by a "sulky" on March 14th, the wheel passing from the right anterior iliac spine towards the liver. When seen on April 4th he was jaundiced and emaciated. The abdomen was full of fluid, the respiration was embarrassed, and the temperature was normal. There was no bile in the stools. Aspiration was performed and three quarts of aseptic bile were removed from the abdomen. The temperature shot up to 103° F., but returned to normal in 24 hours. On April 8th the abdomen was opened by the usual vertical incision for bile-duct operations. The liver appeared to have been torn from its suspensory ligament and rotated forwards, its superior surface becoming anterior. Its anterior edge was flattened out like ribbon and was adherent to the transverse colon. The gall-bladder was adrift from the liver and hung by its duct. Bile was found to leak from a point in the common bile duct at the hepato-duodenal ligament. During attempts to dissect out the duct the patient's condition became so serious that the operation had to be finished. A large rubber tube containing gauze was therefore passed down to the region of the tear, and the abdomen was closed. The gall-bladder was attached by a suture to the liver so that it could easily be found at a second operation. From 10 to 12 ounces of bile were passed through the drainage tube in 24 hours, while none appeared in the stools. Thus a difficult problem had to be faced. A very emaciated child, with a pulse of 130, required a delicate operation—suture of the common bile duct or anastomosis of its proximal end into the duodenum. The severed ends had probably widely retracted. It was decided, if possible, to suture or anastomose the duct, and if not, to short-circuit the gall-bladder into the colon, by which it was thought that half the bile would enter the colon and that thus the alarming emaciation might be combated and the strength increased so that the tear could be sutured by a later operation. On April 26th a second operation was performed. The liver was found to have regained its normal position and was adherent to the diaphragm. The gall-bladder had again gone adrift and could not be found and there were many adhesions from drainage tracts. The gall-bladder was ultimately found adherent to the posterior surface of the liver. It was sutured to the colon and the abdomen was closed, a drainage-tube being inserted. The patient was removed from the table barely alive. No bile discharged into the intestine and that discharging through the wound became fœtid. The child appeared to be dying. The drainage-tube was removed and the sinus allowed to close with the idea that by increasing

the resistance to the escape of bile it might be made to flow into the intestine through the gall-bladder. On May 7th there were severe pains in the upper abdomen apparently due to peritonitis, and on the 8th the motions were coloured brown. Three days later the presence of bile was proved chemically. A week later no bile appeared in the wound and the colour of the motions was normal. The temperature varied from 101° F. to normal. Recovery ensued.

THE SURGERY OF THORACIC WOUNDS IMPLICATING THE DIAPHRAGM.

AT a meeting of the Société de Chirurgiens de Paris on Feb. 2nd, reported in the *Presse Médicale* of Feb. 14th, an account was given of a surgical feat which reflected great credit on the surgeon responsible for it, M. Lepoutre, of Lille. The case was one of thoracic injury; projecting from an open wound in the wall of the chest there was a loop of intestine which was perforated. M. Lepoutre repaired the intestinal lesion, cleaned the external parts, and attempted to return the loop of bowel to the abdominal cavity, but was prevented by the fact that it was firmly gripped by the edges of the diaphragmatic wound through which it had escaped. He opened the abdomen instead of enlarging the thoracic wound so as to assure himself of the condition of the organs beneath the diaphragm. He found these intact and sewed up the wound in the diaphragm, which was 4 cm. in length. The abdomen was drained, but the pleural wound was closed. The patient recovered. M. Rigollot-Simonnot, who reported the case on behalf of M. Lepoutre, gave an interesting review of the different operations which might be used in such cases, with the indications for each. In his opinion immediate laparotomy is indicated only in cases of gunshot wound of the thorax implicating the upper abdomen, in abdominal injuries involving the thorax from below upwards, and in cases displaying unmistakable evidence of abdominal complications. In other cases he favours the thoracic route of approach to the diaphragmatic wound. Drainage should be avoided as far as possible, and should never be applied to the pleural sac; if the thoracic route has been adopted the drainage should be carried out through the diaphragm but external to the pleural sac. He considers that in the immense majority of cases in which immediate thoracotomy has been performed a secondary laparotomy will be necessary, especially when the injury has been on the left side of the chest.

(1) THE EFFECTS OF CAFFEINE UPON THE GERMINATION AND GROWTH OF SEEDS; (2) THE PROTEINS OF RICE.

THE February number of the *Bio-Chemical Journal* contains two papers under the above headings in which the respective writers make some interesting observations. (1) Dr. Fred. Ransom finds that caffeine delays the germination of seeds to a marked extent. Although the list of seeds tested was comparatively short, the results he regards are so uniform that they can hardly be attributed to chance. In every case except one (nasturtium) the seeds which had been treated with caffeine were later in germinating than the tap-water controls, and in a great majority of cases fewer seeds germinated in the caffeine groups. In the course of growth the caffeine-treated seeds were at first relatively less vigorous than those from tap-water, and in many cases they remained so till the end of the experiment. In three caffeine groups no seeds germinated. In no instance except the nasturtium had the caffeine groups any advantage over the controls. Having regard to the fact that caffeine in dilute solution applied to muscle increases the response to stimulation it might be expected to stimulate germination and growth. On the contrary, Dr. Ransom's experiments show that caffeine in a 1 per cent. solution retards or even prevents the germination and growth of seeds, and so far there is no evidence to show therefore that caffeine, either alone or in combination with other substances, can act as a stimulant to plant life. The investigation is an interesting one in view of the occurrence of the alkaloid in certain plants, and we are glad to note that it is being continued. 2. In the second paper the notes of Mr. S. Kajiura's investigation on the proteins of rice are given. A knowledge of the composition of the proteins of rice is obviously important from an economic and hygienic point of view, especially in relation to beri-beri. It was found that the proteins of "white rice," as used for dietary purposes in Japan, consist only to the smallest extent of albumins and globulins. The amount of alcohol-soluble protein is practically negligible, an observation which distinguishes rice sharply from all other cereals hitherto investigated. The main protein of rice (oryzenin) belongs to the glutelin class—that is, proteins soluble in weak alkali. In its nitrogen cleavage it differs from wheat glutenin (the only other glutelin so far studied) very considerably. The results are suggestive, and will no doubt stimulate further work on this important subject.

Sir Anthony A. Bowlby, Surgeon-General Sir Arthur M. Branfoot, Sir James Kingston Fowler, Mr. George H. Makins, C.B., Dr. H. D. Rolleston, Mr. Charters J. Symonds, and Dr. James Taylor have been appointed to the consulting staff of the Convalescent Home for Officers at Osborne, Isle of Wight.

THE Council of the Royal Society has recommended for the Fellowship, among others, Professor Benjamin Moore, Mr. Edward Nettleship, Professor Robert Newstead, and Dr. William McDougall, all of whom have assisted by their scientific work in the direct progress of medicine.

THE King has conferred the honour of Knighthood upon Mr. W. M. A. Anderson, M.V.O., M.B. Durh., who as honorary surgeon to the Princess Royal was summoned to Egypt to attend to the late Duke of Fife.

WE regret to be compelled to delay publication this week of our report of the adjourned joint debate of the Medical, Surgical, and Anæsthetics Sections of the Royal Society of Medicine on Thyroidectomy.

THE King has appointed Mr. William Joseph Essery, M.B. Durh., M.R.C.S. Eng., to be a Commander of the Royal Victorian Order.

IT is in contemplation that a life of Lord Lister should be prepared. Any letters of scientific interest forwarded to Mr. R. J. Godlee, 19, Wimpole-street, London, W., will be gratefully received, and returned after copying if desired.

Dr. StClair Thomson has been unanimously elected a Corresponding Member of the Wiener Laryngologische Gesellschaft.

MANCHESTER UNIVERSITY SETTLEMENT.—A conference will be held at the Settlement, Ancoats Hall, Every-street, on Thursday, March 21st, at 7.30 P.M., on School Clinics, when papers will be read by Dr. Lewis A. Williams, medical superintendent of the Bradford education committee, and Mr. William H. Jones, the borough dentist at Cambridge. The papers will be followed by discussion.

THE PROBLEM OF AFTER-CARE OF SANATORIUM PATIENTS.[1]

BY T. D. LISTER, M.D. LOND., M.R.C.P. LOND., F.R.C.S. ENG.,

PHYSICIAN TO THE MOUNT VERNON HOSPITAL FOR DISEASES OF THE CHEST, AND ADVISORY PHYSICIAN TO THE NATIONAL SANATORIUM ASSOCIATION.

THE treatment of consumption is a costly matter. It is only the still greater cost to the community of the disease itself that justifies the many ways of spending money on treatment that have their several advocates. Among these the sanatcrium has the pre-eminence of being the most costly, and of having the greatest number of skilled supporters. The sanatorium has come to stay, whatever the advocates of other methods may say in its disparagement, or as to the advantages of their own schemes in comparison. It is not necessary here to enter, save incidentally, into the question of the relative value of the alternatives to the sanatorium. Wherever tuberculosis is being fought sanatoriums are established. The sanatorium is recognised as an essential link in the chain of measures which the hygienists of all civilised countries are beginning to adopt. I say beginning, because as yet we are but at the threshold of the struggle. For the causes of the disease are still scientifically unknown.

The Problem of Relative Immunity.

We know certain things. We dogmatise upon them. But our dogmas are open to all forms of criticism. It is needless for me to tell you that the discovery which placed Koch among the immortals is the basis of all our present-day work. The tubercle bacillus is the infective agent, and all cases of consumption are due to the invasion of the body by this microbe. We recognise certain conditions of the body which render it vulnerable, some inherited—this for the eugenists—and some acquired—this for the immunists and sociologists.

But what is this vulnerability? Why is A apparently resistant to the ubiquitous infection and B an easy prey? In what essential qualities do their bodies differ? In what lies the difference between the tissues of the patient who dies in a few weeks from "galloping consumption" even when surrounded by everything that should make the onslaught of the bacillus difficult, and those of the patient badly fed and housed who goes on for 10 or 20 years fighting an indecisive battle, but able all the time to earn a living? Why is there every degree of ability to "stand" a dose of infection?

It is this very difficult question of relative immunity, full of all the problems of pathology, that leaves us, and I fear will leave us for years to come, in no position to answer it. The real answer might give us the clue to the real treatment.

What is being Done?

Meanwhile, what are we doing? We are taking refuge in the teachings of hygiene. We know that certain conditions of living, to which the sanatorium presents the antithesis, are associated with a high rate of attack by consumption of those who live under them.

We say, let us give to as many as possible of these those hygienic conditions they have lacked. Let us adopt the political maxim, "The greatest good of the greatest number," and apply it to the attempt to cure consumption.

I have no delusions as to the statistics of sanatorium results. We have, as has been pointed out, no strictly comparable figures of the results of sanatorium treatment and of non-sanatorium treatment. What has been said of sanatoriums is, to my mind, equally true of other methods of treatment, but I will not venture to go into that.

Teachings of Hygiene.

At present the hygienists of the world are agreed as to the conditions of living which produce liability to the disease. They are also agreed as to the value of the sanatorium in producing resistance to the disease.

The sanatorium, like consumption itself, is a product of civilisation. For good, or for ill, we herd masses of our populations in cities and cage them in factories and tenements. Hygiene, by constant watchfulness, enables us to make the best of things according to the means at its disposal. So far as consumption is concerned, it points out the dangers of infection and the evils of dirt, overcrowding, overwork, under-feeding, drink, and heredity in encouraging infection. It says, if we could only take all the infectious cases away, and if we could destroy the conditions which encourage infection, we could stamp out this plague. Meanwhile, it says also, let us take the case that is as yet still only invaded, and not effectively occupied by the enemy, and give it healthy conditions. Let us supply those weapons of fresh air, cleanliness, sunlight, rest, food, exercise, and sobriety—which are known to be necessary for the body to beat back or surround, perhaps to destroy, the invader.

That the sanatorium does provide such weapons may be accepted. But the individual resistance of the patient—his relative immunity—is an unknown factor, and so statistical experts riddle the results of sanatorium treatment with criticism, while unable to tell us what better to do.

The Sanatorium a School of Hygienic Living.

I say let us be content with teaching the lessons of hygiene. Whether our results be 50 per cent., 60 per cent., or 80 per cent. of arrested cases is immaterial, so long as we train the ignorant dangerous consumptive into ways of safety.

Elsewhere, on another occasion, I have said that this battle against consumption is one of the problems of industrial disease.[2] I said that the sanatorium is only a link in the chain of measures necessary. But it is the one great object lesson in the prevention and treatment of consumption. It is the school of hygienic living for the consumptive. Since my attention was specially directed to tuberculosis I have always recognised this. For a paper, written jointly, and published some years ago in THE LANCET,[3] I suggested the title "A National School for Consumptives." The views that I then advocated, and have consistently insisted upon on the Council of the National Sanatorium Association and elsewhere, are now likely to be adopted as a State provision. The scheme of an industrial sanatorium that I drafted in 1903–1904, which has now been for five years successfully carried out at Benenden, was framed with educational objects in the forefront, as well as those of economy in construction and administration. So far as education goes a sanatorium is a necessity. We might as well say that the bulk of children can be taught as well at home as at school, as that the mass of consumptives can be treated as well at home as in an institution.

Limitations of the Sanatorium.

But I have always pointed out very clearly that the sanatorium has great limitations. It is not enough to "select early cases," as the phrase goes, to send them away to sanatoriums, to let them receive their training for as long as thought fit, and to send them back again "cured," as distinguished laymen hope, to all the evils from which we have only rescued them for a few short months. I pointed out that though much can be done by such methods, yet still more remains to be done, not only in the treatment but in the prevention of the disease, which includes the prevention of relapses. The far greater problem remains.

It may be easy to "cure" or to "arrest" certain early cases, if we select those who can "stand" a dose of infection fairly well. But who believes that any large proportion of such arrested cases will remain well without after-care? Does anyone believe that a person who has once lost that undefined quality of immunity to tuberculosis, and who has now apparently regained it by sanatorium methods—or any methods—is a better life for resisting a fresh attack than one who has never had the disease? Will any insurance office bet the average odds against the chance of such a person dying from consumption?

Combination of all Methods of Treatment Needed.

There is something—there are many things—we do not know about the pathology of the victims of tuberculosis, but one we do know is that the consumptive class is consumptive.

Of course, I am not ignoring the many sanatorium cases that stay well for years after leaving off treatment, nor the cases treated by tuberculin or any other method that do the same. But are not such cases originally resistant? Were not the symptoms which led to their treatment merely the evidence of a diminution of resistance due to some transient

[1] An address delivered during the exhibition at the Royal Sanitary Institute on Jan. 19th, 1912.

[2] "Industrial Tuberculosis," T. D. Lister, THE LANCET, Oct. 15th, 1910.

[3] Garland and Lister: THE LANCET, March 9th, 1907, p. 677.

disturbing cause? The infection is everywhere. So large a proportion of the general population has tuberculosis and are able to get well of it, as shown by many pathologists, that it is not surprising that many such cases pass through the hands of the sanatorium doctor or the physician who immunises by the direct administration of tuberculin. Their disease is only a ripple on the calm sea of health.

Such cases afford, I am convinced, a large number of our most successful results. In other words, the more solid the foundation of natural tolerance, or natural resistance, on which our treatment is superadded, the more lasting will be the superstructure of health.

You will, I trust, forgive me for having thus entered on debatable matters, but I have spoken with no desire to do aught than suggest one of the factors that I think should not be lost sight of in the after-care problem—namely, the relative immunity or resistance of individuals.

By "careful selection" of cases anyone can get good results in a large number of cases of infection by tubercle. But until "careful selection" can be replaced in our medical phraseology by something which leaves less to the personal view of the doctor who uses the term, we must rely for our treatment of consumption among the people on a combination of all the methods of all the doctors. Let us remember that patients are patients and not a row of bottles. We must not waste time and energy in disputes as to whose method is best, but use every method in turn for the cases it suits best.

Part Played by the Sanatorium.

No national system of insurance will enable us to detect latent tuberculosis in the enormous number of people who must have got it, and who are unconscious of it. It is even difficult in the present state of medical education to secure early diagnosis of many who apply for treatment for slight vague illness, as to their possibly being affected by active tuberculosis. Most of the cases admitted to sanatoriums are, and will continue to be, people who are really ill. People who are not ill will not apply.

Let us agree to-day that the sanatorium does, and will continue to do, its part in restoring some of these people to apparent health, and that it teaches many others the ways of health. Some of the first class will remain well for reasons I have stated, others will relapse and seek readmission, others will relapse and die. Some of the second class will learn their lesson so thoroughly that, aided by their own resistance, they will gradually progress to health, others will become chronic, others relapse, and others will die.

It is a pessimistic outlook for those who do not profit by the teaching of the sanatorium, or who are unable to practise after they leave what has been demonstrated and preached to them.

After the Patient Leaves the Sanatorium.

No sanatorium alone cures consumption. Much more is necessary than the three or four months of treatment in a sanatorium. If immunity in our most successful cases has for a time been lost, it has been lost with difficulty, and the foundation of natural resistance must be there or they would not be successful. Will it be regained easily? I think not. The hygienic conditions of sanatorium life will do good as long as they last. But for the permanent recovery of immunity the invaded territory must be again rendered untenable by the enemy.

After leaving the sanatorium the lessons it teaches must be taken into the home and the workshop, into the daily life and habits of the consumptive, for years to come. Sanatorium treatment is not merely putting patients in an open-air shelter, nor resting and exercising them against a temperature chart, nor stuffing them like pigs against a weight record, nor establishing a tolerance of tuberculin injections. These things it is the province of the physician in charge to effect. As a result the patient may leave the institution apparently well. But sanatorium treatment to be effective must have induced something else. It must have roused the patient to the fact that all this machinery of detail meant something vitally important to him—to him himself. He must leave determined to remain well; he must be inspired to imitate the sanatorium life as a necessity of his future existence, and the machinery for so doing must be set up.

This is the problem of the after-care of sanatorium patients—to inspire the patient and to give him guidance and help. How difficult it is for the vast mass of consumptives the increasing literature on the subject affords abundant proof. Every physician who studies this disease is faced by the problem every day. If it is difficult in the case of the patient discharged as "arrested," how much greater is the difficulty in the case of the patient who is discharged only on the way to health or worse.

The Social Problem.

The social problem involved is second only to the strictly medical problem. So well has the lesson of the infectivity of tuberculosis been taught, that the patient is often faced on his return to work by the aversion of his former colleagues. His employer may even be compelled to refuse to restore him, or a new employer to refuse to engage him, quite apart from the employer's risk of legal liabilities.

The public does not grasp the necessary qualifications of a scientific fact easily. The untrained infectious workman with chronic consumption, which does not in his opinion require treatment, is often tolerated while he distributes his spit everywhere, but the returned safe sanatorium patient is boycotted. Moreover, the working conditions under which the patient could previously earn a living may have been the very cause of the loss of resistance which led to his disease declaring itself.[4]

The Question of Change of Occupation.

Idealists have suggested the abandonment of the old life and the taking on of a new means of livelihood. Such a course is impossible for the great mass of consumptive workers. Not until England is again an agricultural country would this be possible here, and, as someone has truly said of "farm colonies," "You cannot make a consumptive clerk or drunken docker into an efficient agricultural labourer;" it is economically impossible.

Our overseas colonies have their various climatic advantages and disadvantages. But the colonies are not opening their arms to receive weaklings. The consumptive class is consumptive, and nobody wants them. Individual instances of brilliant recoveries under colonial conditions are familiar to us, but no protest can be too strongly worded against the loose prescription, "Take a voyage to Australia."

Changes of occupation from clerkship to land surveying, from indoor book-keeping to outdoor agency, and so forth are sometimes possible. But as a rule the patient whose resistance has apparently been restored by a stay in a sanatorium must depend upon himself, and continue in the same employment as before he broke down.

Unfavourable Cases.

For those who only just hold their own under sanatorium conditions a return to their employment means disaster. For those whose resistance was unequal to any attack, and who are gradually going down hill, after-care means the provision of an easy death-bed if possible.

The Government will have some better plan, let us hope, than the infirmary ward for the dying industrial consumptive. For those to whom ordinary city life is impossible provision should be made in model health villages or colonies, but they will be almost inevitably State pensioners. Afforestation schemes, farm colonies, outdoor official positions, and many other suggestions have been made for dealing with various groups of these cases, and we must do what we can for them—a phrase which often signifies our inability to do anything.

"Arrested" Cases.

But the case of the first class, the "arrested" case, is the one to which most attention as regards "after-care" is being paid. It was, no doubt, this class of case which was in the mind of the council when this exhibition was arranged. What is the position of the man who leaves the sanatorium labelled "arrested," "fit for work," "able to do a good day's work without any reaction"? *He is a person threatened by consumption* as much as he was before symptoms of illness led him to make his first appearance before a doctor—but he knows more. It is on his own personal enthusiasm and discretion, as well as upon the unknown factor of his natural resistance, that the permanence of his cure will depend. He can continue his treatment according to his opportunities. The backyard shelter, the canvas pavilion, the regular, sober life that he has learned to live—all the machinery of which he has acquired experience will be of use to him. But he is still threatened

[4] Loc. cit. ("Industrial Tuberculosis.")

with consumption. The tuberculosis dispensary, the tuberculin dispensary, the hospital, the infirmary, the farm colony, our overseas colonies, and the patient's backyard all have their place in the after-care problem. So we see that the after-care problem is not different from, but identical with, the problem of the prevention of consumption, with the one great difference that the patient is educated.

The Prevention of Consumption.

It is bad conditions massed under the term "environment" which produce loss of resistance, and infection which excites the disease. All our energies must be directed in the way of prevention. We cannot at present deal with the existing conditions of life among those most susceptible. Hygiene must be preached not only to those interested, but to those who are not interested. The health conscience of the people must be aroused or created.

As success in sanatorium treatment depends on the inspiration of the patient, so success in the prevention of consumption must depend upon the inspiration of the poorest and most ignorant classes of the people. Health teaching must find its way into our schools and homes. We must secure as wholesome a condition in the workshop, office, and dwelling as exists in the coal-mine or inspected factory. We must provide proper food and recreation, and implant a desire for higher ideals among the masses.

If we succeed in a campaign of prevention, the problem of after-care ceases to exist. It is this problem of prevention, which I say includes after-care, that is the real question for solution by the statesmen whose care is that of the public health.

CRAWFORD WILLIAMSON LONG, THE PIONEER OF ANÆSTHESIA.[1]

BY DUDLEY W. BUXTON, M.D., B.S., M.R.C.P.,
ANÆSTHETIST TO UNIVERSITY COLLEGE HOSPITAL AND LECTURER ON ANÆSTHETICS IN UNIVERSITY COLLEGE HOSPITAL MEDICAL SCHOOL.

Crawford Williamson Long was the pioneer of anæsthesia and the first to suggest and employ ether inhalation during surgical operations. Although the discovery of anæsthetics has bestowed the greatest blessing upon suffering humanity its birth has been marked by much polemic and in some cases with scant recognition of those who have done so much for mankind. While disputants claiming for themselves, or their friends, the plaudits due to great discoverers have rent the welkin with their angry cries and clamoured for a material solatium, one man, Crawford Williamson Long, reputed to be actually the first to produce artificial anæsthesia by inhalation of ether, was content to stand aside, calm and dignified, as one who strove to benefit his race while seeking for himself neither guerdon nor worldly honour. I propose to submit to your consideration the facts which have been accumulated and which, to my mind, prove Long's right to the world's acknowledgment that he was the pioneer of anæsthesia.

Views on Possibility of Anæsthesia at the Time.

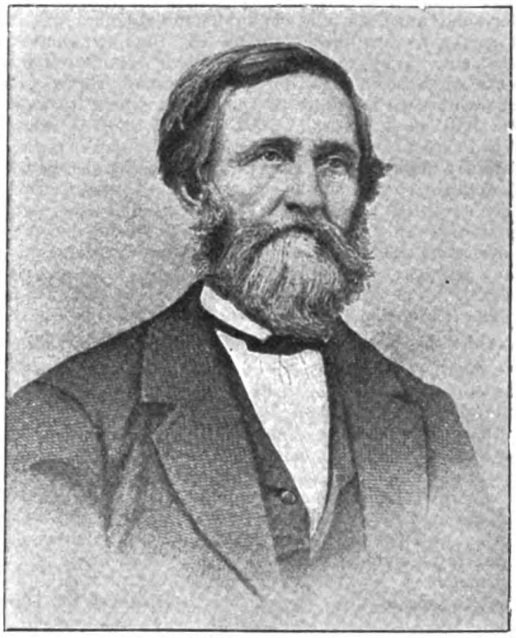
It is impossible to do justice to the man without making at least an attempt to understand the environment in which he worked, and to analyse the professional and public opinion at the time he lived concerning the possibility of anæsthesia. Even so late as 1846 Sir Benjamin Brodie wrote: "Physicians and surgeons have been looking in vain, from the days of Hippocrates down to the present time, for the means of allaying or preventing bodily pain." In his mind were, no doubt, the spongia somnifera of Theodoricus of Lucca, opium, cannabis indica, mandragora, and the whole gamut of nostrums vaunted through the centuries; the claims of Denis Papin, and of Cardan, whose magnet he averred could abrogate pain; the compression of the carotid arteries by Valverdi; nerve compression, suggested by Ambroise Paré and practised by James Moore, and subsequently by John Hunter in St. George's Hospital; Wardrop's (1832) bleeding to syncope, adopted by Richerand; and Mesmer's claims to dissociate the astral from the corporeal body. Many methods had been called, but, as the sequel will show, few had been chosen.

[1] A paper read before the Section of Anæsthetics, Royal Society of Medicine, Dec. 1st, 1911.

Some Biographical Details.

But what of the man himself? Crawford Williamson Long was born on Nov. 3rd, 1815, at Danielsberg, Georgia. (Fig. 1.) His people were of high intellectual and social standing; his grandfather, Captain Samuel Long, who had emigrated from Ireland, was a philanthropist and man of affairs, prominent in the war of his troublous times. Captain Long's wife was a Miss Williamson, of Ulster, and her maiden name was perpetuated in that of her grandson. Of Long's father we learn that he was high in the esteem of his fellow-countrymen and the intimate friend of W. H. Crawford, after whom he named the subject of this history. Crawford held important official posts, twice represented his country in France, and was a Secretary of State. Long's mother, although an invalid, by her literary gifts added culture to her home. Thus was Crawford Long brought up amidst

FIG. 1.



Crawford Williamson Long, M.D.

refined and public-spirited persons, an environment which could but make for those traits of character which in later life developed him into the best type of the man and of the physician.

A few words will suffice to tell the subsequent story. "Studious and wise beyond his years," Long, whose extreme youth when he went to college earned him the *sobriquet* of "The Baby," graduated brilliantly at Franklin College—now the University of Georgia—when but 19 years old. His chief friend and class-mate was Alexander H. Stephens, later to be elected Vice-President of the Southern Confederacy, and to him and Long have been erected monuments in Statuary Hall, Washington, the twain chosen by Georgia as the greatest men of her State. Thence he proceeded to the University of Pennsylvania, and at the age of 23 graduated in medicine. As was customary for those who could afford it, Long spent some time after this in walking the hospitals of New York. The suggestion made to him by his teachers, who recognised his peculiar merit as a surgeon, that he should attach himself to the medical service of the United States Navy, was discountenanced by Long's father, and at the latter's instance he settled as a general practitioner in Jefferson, Georgia, and commenced civil practice in 1841 at the age of 26.

Operations on Hypnotised Patients.

It should be remembered that it was in this same year that Braid, of Manchester, made his trial of the "neurhypnotic trance," and Esdaile in India successfully operated upon hynotised patients. Elliotson, who had migrated from St. Thomas's to University College Hospital, was then giving the full weight of his great mental power to

mesmerism, although his book on "Surgical Operations Performed in the Mesmeric State without Pain" was not published until 1843. There is no doubt that at the time of which we write mesmerism, or the hypnotic trance, was regarded as the accomplished fact of anæsthesia, and that in the United States many of the leading men in medicine and surgery accepted it as the long-hoped-for panacea whereby suffering humanity could pass unflinchingly through the ordeal of the surgeon's knife. In France, Richerand had tried it and pronounced for its value, and other surgeons scarcely less eminent were willing to swallow the doubtful reputation of Anton Mesmer so long as they could benefit their patients by employing methods which had been exploited by his fertile brain.

Inhalational anæsthesia thus started with a heavy handicap. In 1846, to anticipate, the editors of the *New Orleans Medical and Surgical Journal* wrote, *apropos* of ether inhalations: "That the leading surgeons of Boston could be captivated by such an invention as this under such auspices and upon such evidences of utility and safety as are presented by Dr. Bigelow excites our amazement. Why, mesmerism, which is repudiated by the *savants* of Boston, has done a thousand times greater wonders and without any of the dangers here threatened. What shall we see next?" *En passant*, let it be remarked that the sapient editors were condemned to see many things apparently unpalatable. But putting this aside, the quotation appears to show that the utility of mesmerism was widely accepted and constantly practised during surgical operations, even if the Bostonian *savants* condemned it; and further, that any fresh departure in the direction of promoting painless surgery was open to the most embittered criticism. The importance of this fact will be made manifest in the sequel of our narrative.

Knowledge then Current about Ether and Nitrous Oxide Gas.

We must, however, retrace our steps for a brief space and try to obtain a clear idea of what was the current knowledge about ether before Long's first trials of its powers as an anæsthetic. In the books dealing with drugs and poisons ether found a place. It had been known since the thirteenth century, and although some of its merits were recognised it was regarded as so dangerous as to be taboo. However, when, through the enthusiasm of Dr. Beddoes, the work of Priestley, and the discovery of oxygen and nitrous oxide, pneumatic medicine became a vogue ether again assumed prominence.

The foundation of the Hotwells Hospital at Clifton, Bristol, by Dr. Beddoes gave that astute physician a wide experience in inhalational medication. He had studied Mayou's experiments and was familiar with Priestley's work, so that when young Humphry Davy, freed from his indentures to a doctor in Penzance, became his assistant, Beddoes was able to study the gases, the effects of which in the treatment of disease he has given in his delightful collected writings in four volumes. Of the volume entitled "Considerations on the Medicinal Use and on the Production of Factitious Airs," the first part was Beddoes's work, the second being due to James Watt, the engineer. In one of these volumes we find a letter from Dr. Pearson, of Birmingham, the accepted authority in his day upon therapeusis both in this country and in the States. In it he says that Beddoes's researches on "Factitious Airs" had led him to try "the vapour of ether" to relieve the suffering of phthisical patients and with benefit to them. Further, when Mitchell's book on chemistry appeared Beddoes found to his chagrin that the chemist declared nitrous oxide to be a "virulent poison," so he recommenced experiments with oxygen and nitrogen as well as with nitrous oxide gas. Davy, who undertook these researches, came to the conclusion that Mitchell was wrong, and that "the gaseous oxide of azote is perfectly expirable (*sic*)." He also announced that its inhalation cured the pain of an aching tooth, and added: "It may probably be used with advantage during surgical operations in which no great effusion of blood takes place." Alas, no one took the hint, and nitrous oxide remained for nearly 50 years the chief stock-in-trade of travelling lecturers, who gave this gas to members of their audience to provoke exhilaration and semi-unconscious gyrations. These "frolics" were well known, and M. Filvée, in his "Lettres sur l'Angleterre" (1802),[2] mentions these revels as one of the many follies to which English people were prone.

These practices became also common in the States, and it will be remembered it was at one of them that Horace Wells was present when he conceived the idea of using the gas as an anæsthetic. This, of course, happened much later, in 1844. But nitrous oxide gas needs a plant for its accurate manufacture, so that Pearson's suggestion of employing ether vapour as an exhilarant found ready acceptance. Cullen, whose works were read widely both here and in America, advocated ether, and Warren, of Boston, extolled its use in place of nitrous oxide. We see then that in 1841, when Long commenced practice, it was common knowledge that nitrous oxide produced exhilaration, but the suggestion of its employment as an anæsthetic by Davy was forgotten; ether was recognised as producing similar effects, but if we except the doubtful hint in the *Journal of Sciences and Arts* associated with the name of Faraday (1818), no one had grasped its greater merits, while the books of Pereira and others cautioned against its employment, since stupor and death they averred might readily be brought about. Long, it appears, had when a student actually inhaled ether during an "ether frolic," and was so far familiar with its effects.

Long's Early Experiments.

Jefferson in those days was an isolated country village—one might almost say, "the world forgetting, by the world forgot"—so that Long had to pursue his own way relying upon himself and practically out of touch with the centres of surgical thought. His personal charm and high scientific attainments made his house a place of social resort for the neighbourhood. Let Long himself tell us of the fateful happenings of December, 1841. He says:—

> In the month of December, 1841, or January, 1842, the subject of the inhalation of nitrous oxide gas was introduced in a company of young men in this village (Jefferson), and several persons present desired me to produce some for their use. I informed them that I had no apparatus for preparing or preserving the gas, but that I had a medicine (sulphuric ether) which would produce equally exhilarating effects: that I had inhaled it myself, and considered it as safe as the nitrous oxide gas. One of the company stated that he had inhaled ether while at school, and was then willing to inhale it. The company were all anxious to witness its effects. The ether was introduced. I gave it first to the gentleman who had previously inhaled it, then inhaled it myself, and afterwards gave it to all persons present. They were so much pleased with the exhilarating effects of ether that they afterwards inhaled it frequently, and induced others to do so, and its inhalation soon became fashionable in this country, and in fact extended from this place through several counties in this part of Georgia.
>
> On numerous occasions I have inhaled ether for its exhilarating properties, and would frequently, at some short time subsequent to its inhalation, discover bruises or painful spots on my person, which I had no recollection of causing, and which I felt satisfied were received while under the influences of ether. I noticed my friends while etherised, received falls and bangs, which I believed were sufficient to produce pain on a person not in a state of anæsthesia, and on questioning them they uniformly assured me that they did not feel the least pain from these accidents. These facts are mentioned that the reasons may be apparent why I was induced to make an experiment in etherisation.

First Operation under Ether Anæsthesia.

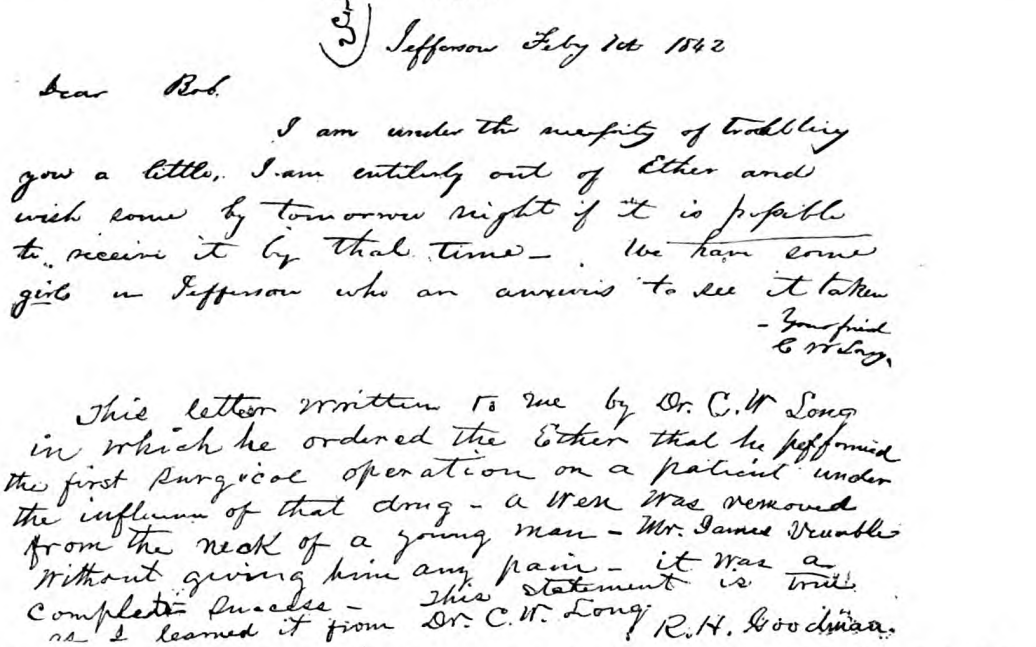
The first trial of his theory was made on March 30th, 1842, and the narrative is given in Long's published account of his experiments. James M. Venable was etherised by Long, who poured ether upon a towel, and when the patient was profoundly unconscious he removed a cyst from the back of the patient's neck. No pain was felt. This was four and a half years before Morton's first case. Subsequently Long used ether on several occasions, eight it is said, and every case was successful. That he did not employ it more largely was due firstly to the fact that his practice was one in which operations were seldom demanded, and secondly because the older practitioners around him urged upon him the "danger" of the method and the disastrous results which would follow a fatal accident, such an accident as they were good enough to say must soon occur. Indeed, Long was more than once threatened with pains and penalties by the community in which he lived if he persisted in his ether practices!

Reason of Long's Silence.

Now, although Long did not conceal his work, for it was known widely in the neighbourhood, as is shown by the facsimile letter which is here reproduced (Fig. 3), he took no occasion until later to read a paper before a medical society dealing with his experiments. This silence has been misconstrued. The simplest justice, however, must explain Long's reticence in a sense which redounds wholly to his credit. Long believed in his method, but recognised that it needed careful working out; he patiently experimented when patients seemed suitable; when they were

[2] Quoted by Mr. George Foy ("Janus") in his life of C. W. Long, 1900, p. 2.

FIG. 2.



Jefferson Feby 1st 1842

Dear Bob.

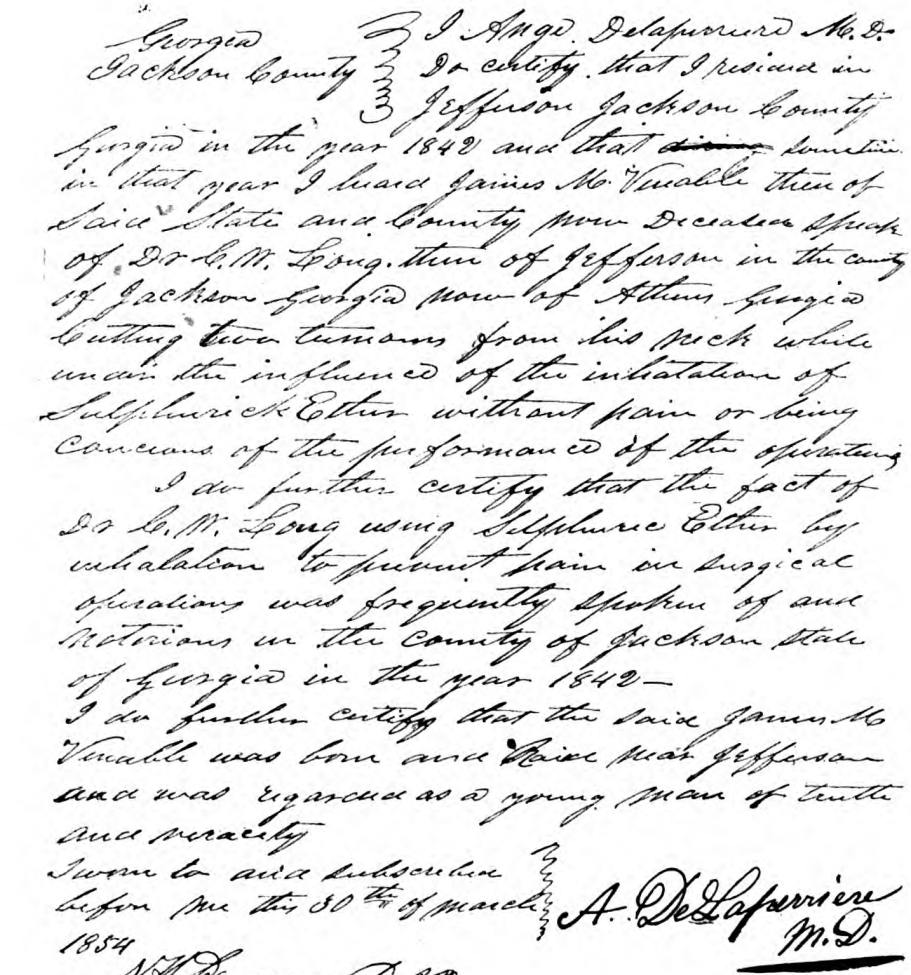
I am under the necessity of troubling you a little. I am entirely out of Ether and wish some by tomorrow night if it is possible to receive it by that time. We have some girls in Jefferson who are anxious to see it taken

Your friend
C W Long.

This letter written to me by Dr. C. W. Long in which he ordered the Ether that he performed the first Surgical operation on a patient under the influence of that drug - a tumor was removed from the neck of a young man - Mr. James Venable without giving him any pain - it was a complete success - This statement is true as I learned it from Dr. C. W. Long R. H. Goodman.

The facsimile letter written in 1842 by C. W. Long to Mr. R. H. Goodman, and a note written upon the enfold of the letter by the hand of R. H. Goodman. The ether was used for an "ether frolic" and for the first operation upon J. M. Venable.

FIG. 3.



Georgia
Jackson County

I Augt. Delaperriere M.D. do certify that I resided in Jefferson Jackson County Georgia in the year 1842 and that ~~since~~ sometime in that year I heard James M. Venable then of said State and County now Deceased speak of Dr C. W. Long then of Jefferson in the county of Jackson Georgia now of Athens Georgia Cutting two tumors from his neck while under the influence of the inhalation of Sulphuric Ether without pain or being Conscious of the performance of the operation

I do further certify that the fact of Dr C. W. Long using Sulphuric Ether by inhalation to prevent pain in Surgical Operations was frequently spoken of and Notorious in the County of Jackson State of Georgia in the year 1842—

I do further certify that the said James M. Venable was born and Raised near Jefferson and was regarded as a young man of truth and veracity

Sworn to and subscribed before me this 30th of March 1854

N. H. Pendergrass J.P. [illegible]

A. DeLaperriere M.D.

not available he tried it on himself and on his pupils. He knew that the public were in favour of mesmerism, a system which he regarded with disfavour, and he had no surgeon of eminence in his neighbourhood to whom he could apply for extended experience. The doctors who knew of his efforts were adverse to them, and so he preferred to wait and gain experience before attempting to exploit a discovery which might have less in it than appeared at first sight. He was alive to the fact that some might believe they found in his practice a development of hypnotism, an anæsthesia by suggestion. But while he waited events were happening in the bigger world of which Long recked nothing.

Morton and "Letheon."

Horace Wells had "discovered" nitrous oxide gas, had tried it and been successful in Hartford, Connecticut, 1844. His essay before the surgical world in the General Hospital, Massachusetts, had been a fiasco; he (Wells) had been shrieked out of the theatre with cries of "humbug." With or without the aid of Dr. Jackson, a man of scientific attainments and State geologist and chemist, Morton had administered ether vapour to himself, subsequently to one or two patients, and ultimately had been permitted by Warren, the surgeon, to administer his nostrum to a patient in the "General Hospital." "This, gentlemen," Warren had said, "is no humbug": anæsthesia by inhalation was an accepted fact.

These events occurred in 1846, but sadly enough the "ether controversy," which embroiled Morton, Jackson and Wells, involves much that we would rather not dwell upon, since the details are far from pleasant reading. We must, however, refer to some points since they connect the story with that of Crawford Long. We spoke of Morton using a "nostrum"; it was sulphuric ether with flavouring additions, and was termed "Letheon." Its identity with ether was challenged, and eventually the medical profession refused to allow further public trials without a disclosure of its nature and composition. The attempt was made to protect letheon by a patent, and to restrict its employment unless a royalty was paid. An English patent was actually granted. W. T. G. Morton was not a medical man, and probably saw no objection to reaping a golden harvest from what he no doubt honestly believed to be his discovery. This restriction on the use of letheon has been denied, but the letter of Dr. Charles A. Davis appears to substantiate the fact.[3]

We know the sequel; the world awoke to the anæsthetic value of ether. There can be no question that whatever motives actuated him Morton's public exhibitions of ether in an important surgical centre were the direct means of publishing the discovery to all civilised communities. Failing to support the rights which he fondly hoped would protect his patent of letheon, Morton sought to secure a grant from Congress, and to be proclaimed the discoverer of ether, and the first to apply it for the purposes of anæsthesia. Dr. Jackson advanced that he had a prior right, asserting that he had suggested the use of ether to Morton, and that the latter's employment of it was at his (Jackson's) instance. Into the merits of this controversy we need not enter, since both Morton and Jackson had been anticipated by Long.

The reasons why Long did not publish his first cases have been pointed out already. However, when Morton's success was bruited about, the duty of making a statement concerning his own cases was brought home to Long, and he put himself into communication with the editor of the *Southern Medical and Surgical Journal*. In 1849 we find in the columns of that journal the following: "A few months ago Dr. Long informed us of his early attempts at etherisation in surgery. He was then informed that any claims set up at this late day to priority of discovery would be severely criticised, if not violently resisted; and that he had best, therefore, do all he could to fortify his position."

Long, in his communication to the Medical Society of Georgia (December, 1849), explains that so soon as he saw from the current medical literature (1846) that letheon had been successfully used, he actually commenced a paper for publication detailing his own experiences with sulphuric ether. Unhappily, the exigencies of his practice intervened and the paper was never completed.

The Rival Claims.

In 1849 Morton petitioned Congress for a monetary reward for his discovery, and his claim was opposed by Jackson and Wells. In 1854, after much persuasion, Long was induced to write to Senator Dawson detailing his own work. The Senator sent Dr. Jackson a curious choice when it is remembered that that gentleman was one of those who claimed the laurels of having discovered ether. The interview took place at Athens, Georgia, to which town Dr. Long had removed in 1851, and Long told his story simply but so effectively as to convince Jackson of its truth.[4] The matter was ventilated in Congress by Senator Dawson, and although Morton's petition was never granted, yet to Crawford Long no recognition was vouchsafed. It is significant that Dr. Jackson urged upon Long that they, Jackson and Long, should unite interests, and as partners claim that they had respectively discovered the use of ether as an anæsthetic, and actually essayed experiments and successfully proved the safety and value of the method. Long was not tempted; he declined in words of striking dignity. He writes: "Our claims are rival, and permit me, sir, to say that although our claims are conflicting, I would not knowingly say anything in the article [he was preparing a full statement of his work in the form of an article] which would be displeasing to you. ..... Still, it becomes each one of us to use all honourable means to advance his own claims, and I know you will not blame me for attending to this matter, which so much concerns my reputation." So the matter dropped, and men forgot Long or minimised his work, and on Ether Day celebrations to Morton is accorded the palm. In 1877 Dr. Marion Sims championed Long's cause, but, unfortunately, his communication so well conceived was hurriedly executed and introduced the inaccurate statement that S. C. Wilhite had suggested to Long the idea of using ether. Wilhite himself contradicted this, and his letter is extant. As a matter of fact, he did not come to live with Long as a student until 1844.

Close of the Story of Long's Life.

So we come to the close of the story of Long and his great discovery, the story of a simple-minded man who, amidst the arduous labours of a scattered country practice, conceived a great idea and, in the teeth of opposition, and though haunted by the fear lest disaster might arise and ruin his professional name and reputation, yet had the courage to test his theory by experiment, and so obtained proof of its accuracy. Surely such a man was worthy to be the author of so momentous a discovery, and of being called one of the greatest men brought forth by a mighty nation.

A few words will suffice to trace the closing years of Long's useful life. He took no further steps to enforce his claims, but patiently laboured for his country and his people through the troublous years of the war, and at length, when brighter days returned, he built up again his practice and ultimately died in harness, his last words being an anxious inquiry as to the welfare of a patient at whose bedside he was when his mortal sickness seized him.

There have been memorials erected to the memory of Long, the discoverer of ether anæsthesia, one in Paris and one at Jefferson, Georgia, and in Boston men see a monument in white marble bearing the inscription: "To the Discoverer of Anæsthesia." It bears no name.

Shall we not in England accord the first place to Long, and in no unfriendly spirit claim for Morton and Wells less exalted

[3] Letter from Dr. Davis written 12 years after the patent was granted to Morton for his letheon, showing that he attempted to enforce patent rights:—"U.S. Marine Hospital, Chelsea, Massachusetts, April, 1859. Dr. Crawford W. Long, Athens, Georgia. Sir,—Hon. Judge Hyllier, Solicitor of Treasury Department, informed me about a year since, and recently repeated the same, that some years since you used sulphuric ether as an anæsthetic and had a record of the same. If it is not asking too much of you I would be greatly obliged if at your earliest convenience you would forward me a statement of the facts. I take the liberty to ask this of you because Mr. W. T. G. Morton, to whom in conjunction with Dr. C. T. Jackson a patent was granted in November, 1846, for using ether, has brought a suit against me as a Government Officer for an infringement of his patent. Judge Hyllier was confident that you could furnish me with proof sufficient to satisfy a jury that you used it in this way before he or Jackson claimed to have made the discovery. I should have asked for these proofs through my attorney and had them properly witnessed, &c., but the Secretary of the Treasury having decided that I used the article on my own responsibility, and therefore the Government were not bound to defend me, I wish to save as much expense as possible.—Very respectfully, (signed) CHARLES A. DAVIS, M.D., Physician and Superintendent."

[4] Dr. Jackson published a full account of this interview and the steps he took to verify Dr. Long's statements. See Boston Medical and Surgical Journal, April 11th, 1861.

niches in the Temple of Fame; for we may not forget that to them, and indeed to Dr. Jackson, the world owes very much, since, if not the first to employ ether as an anæsthetic, they made themselves the heralds of an epoch-making discovery, and they were in ignorance when they did so that Crawford Williamson Long had anticipated them?

(To be continued.)

THE LONDON COUNTY COUNCIL AND MEDICAL AFFAIRS.

Notification of Cerebro-Spinal Meningitis and Poliomyelitis.

THE Public Health Committee reported to the London County Council on Feb. 27th with regard to the compulsory notification of epidemic cerebro-spinal meningitis and acute poliomyelitis or acute polio-encephalitis. As to cerebro-spinal meningitis, the committee stated that this disease had been compulsorily notifiable in London since March 12th, 1907. During the time that had elapsed since that date, 656 cases had been notified, and detailed information, which might become valuable at any time, had been accumulated. Considerable attention had been given to this disease during recent years in the principal cities of Europe and America, and the committee regarded it as of importance that in London the continuity of statistical information should be preserved. Acute poliomyelitis was made compulsorily notifiable on Sept. 1st, 1911, and since then 50 cases of the disease had been notified. The disease occurred principally among children, 11 or 12 per cent. of the cases proving fatal, and infantile paralysis frequently resulting among those who survived.

The committee recommended that both these diseases should be added to the list of diseases permanently notifiable under Section 55 of the Public Health (London) Act, 1891, and the Council approved of this, and decided that they be so notifiable from and including March 13th, 1912.

The Deputy Medical Officer of Health.

With reference to the Council's authorisation of the appointment of a deputy medical officer of health and deputy school medical officer for the County of London at a salary of £1000 a year, the Establishment Committee reported that 30 applications for the position had been received and 10 selected candidates had been interviewed. In the opinion of the committee Mr. W. Butler, M.S., M.B. Glasg., D.P.H. Lond., medical officer of health and school medical officer for Willesden, was the candidate best fitted for the position, and it accordingly recommended his appointment. In compliance with the standing order requiring three names to be submitted to the Council the committee also mentioned the names of Mr. Alfred Greenwood, M.D., B.S., B.Sc. Vict., D.P.H. Irel., L.R.C.P. & S. Edin., L.F.P.S. Glasg., barrister-at-law, and Mr. William Henry Whitehouse, M.D., B.S. Durh., D.P.H. Edin., barrister-at-law. On March 5th the appointment of Dr. Butler was approved by the Council.

The Medical Treatment of School Children.

It was reported at the meeting of the Education Committee of the London County Council on Feb. 28th that the Board of Education had expressed its views with regard to the experimental schemes for the treatment of children suffering from suppurating ears through the agency of various nursing institutions, which the Council has carried on in different parts of London during the last three years. The Board stated that it was very desirable that the question of the treatment of minor ailments in the county as a whole should be fully investigated by the Council, and it was reluctant to approve an isolated undertaking of this nature providing for the treatment of one type of ailment in one part of the county. If satisfactory results were to be obtained it was essential that the question should be considered as a whole in close connexion with the Council's scheme of medical inspection, the Council not committing itself in the meantime to isolated experiments which might prove subsequently a source of embarrassment in preparing a general scheme of treatment. For these reasons the Board was not willing, on the information before it, to sanction a proposed extension of the experiments in Camberwell.

In reply to this communication the Children's Care Committee stated that unless some such arrangements as those proposed were made many children in the district would be unable to obtain treatment. The committee recommended that the Board be urged to approve the experiment as a temporary measure on the understanding that the scheme would be under the supervision of the Council's school medical officer. The committee also suggested that the Board of Education be informed that the Council would be prepared to consider a general scheme for nursing treatment when a grant as promised on behalf of the Government should have been made in respect of the medical service.

The committee decided to advise the Council to send a communication on these lines to the Board of Education.

The Council has received the following letter from the Board of Education, dated Feb. 21st:—

SIR,—With reference to Sir Laurence Gomme's letter of the 12th December last, I am directed by the Board of Education to state that, under the code of regulations for public elementary schools, 1909, as modified by the minute of the Board of Education, dated June 25th, 1910, they are satisfied that provision has been made by the local education authority for the medical inspection of children attending the public elementary schools within the area of the authority for the year ending on the 31st July, 1912.

I am, &c.,
(Signed) GEORGE NEWMAN.

"The Maudsley Hospital."

The Asylums Committee has received an inquiry from the Lunacy Commission as to the name by which it was proposed that the mental hospital to be erected at Denmark Hill should be known, and has addressed a communication to Dr. Maudsley on the subject, who, in reply, has intimated to the great pleasure of the committee that he did not object to the use of his name in connexion with the title for the new institution. The committee has therefore determined that the hospital shall be known as "The Maudsley Hospital." The members felt that no more appropriate name could be chosen, and have expressed themselves as glad of the opportunity of thus permanently associating Dr. Maudsley's name with the good work to be carried on in the hospital which owed its establishment to his timely suggestion, and towards the cost of which he had made so generous a contribution.

Medical Superintendent of Long Grove Asylum.

In reporting the resignation by Dr. C. Hubert Bond of his appointment as medical superintendent of Long Grove Asylum, on his appointment by the Lord Chancellor to be a Commissioner in Lunacy, the Asylums Committee stated that Dr. Bond had been in the service of the Council for 19 years, and had been medical superintendent of the Epileptic Colony as well as of Long Grove Asylum. At both these institutions his care and forethought for the patients in his charge, his desire for the welfare of the staff, and his thorough administration had earned the highest approbation of the committee, which, while it congratulated Dr. Bond on his new appointment, regretted that the County of London would lose his valuable services.

FAR EASTERN ASSOCIATION OF TROPICAL MEDICINE.

THIS association held its Second Biennial Congress at Hong-Kong from Jan. 20th to 27th, under the presidency of Dr. J. MITFORD ATKINSON, of Hong-Kong. One hundred and fourteen members of the medical profession practising in the Far East were present, including the official delegates from the Governments of India, Ceylon, Netherlands-India, French Indo-China, Federated Malay States, Straits Settlements, Philippine Islands, Kiautschou (Imperial German Government), Macao, China, Japan, and the Commonwealth of Australia.

His Excellency Sir FREDERICK LUGARD, G.C.M.G., Governor of the Colony, in an address of welcome, referred to the foundation of the association on the initiative of the Bureau of Science of the Philippines in 1910. He spoke in terms of eulogy of the Tung Wah Hospital in Hong-Kong, which is entirely managed and controlled by an annually elected board of Chinese gentlemen, under the supervision of the Registrar-General, with a Government inspecting medical officer, and also of the University of Hong-Kong, which will shortly be opened with its first Faculty, that of medicine. He hoped that when next the association met in Hong-Kong it would assemble in the great hall of the University.

The PRESIDENT then delivered his address on the

"Progress of Tropical Medicine during the Past 25 Years." He traced the history of the discovery of the malarial parasite, and its transmission to man by the mosquito, and detailed the work done by the Government in Hong-Kong in malaria prevention, with the result that the number of admissions for malaria to the two largest civilian hospitals had fallen from an average of 971 in the quadrennium 1897–1900 to 693 for 1901–05, and to 594 for 1906–10. He showed how the seriousness of plague had diminished since Governor Sir Henry Blake in 1903 succeeded, by a practical demonstration of what could be accomplished by the people themselves by a thorough cleansing of their houses and clothing, in obtaining the coöperation of the Chinese population.

Scientific Meetings.

The whole of Jan. 22nd was devoted to Beri-beri, papers being read by Major Weston P. Chamberlain, M.D., and Captain Edward Vedder, M.D. (Manila); C. Noel Davis, M.B. (Shanghai); Victor G. Heiser, M.D. (Manila); L. Bréaudat, M.D. (Saigon); Dr. Legendre (Hanoi); H. Fraser, M.D. (Kuala Lumpur); Professor Teruuchi, M.D. (Tokyo); Colonel Makita (Tokyo); and Dr. Tsuzuki (Japan). An interesting discussion took place, and eventually the following resolution was passed:—

That the accuracy of the opinion of this association, recorded in 1910, has received further and more complete confirmation by investigators in Japan, China, French Indo-China, the Philippine Islands, Siam, Netherlands-India, the Straits Settlements, and the Federated Malay States—namely, that "beri-beri is associated with the continuous consumption of white (polished) rice as the staple article of diet."

It was therefore again desired to bring this opinion to the notice of the various Governments concerned and to recommend international action.

Jan. 23rd was devoted to Dysentery, Cholera, Intestinal Parasites, and Plague, papers being read and discussed on the Multiplication of Amœbæ of the Human Intestine, by A. Gauducheau, M.D., Médecin-Major (Hanoi); the Action of Ipecacuanha on Amœbæ, by Captain Vedder, M.D. (Manila); the Surgical Treatment of Dysentery, by O. Müller, M.D. (Hong-Kong); the Bacteriological Diagnosis of Cholera, by Professor Teruuchi, M.D., and O. Hida, M.D. (Tokyo); the Source of the Human Liver Distome (Clonorchis endemicus, Bälz), by H. Kobayashi, M.D. (Tokyo); Intestinal Parasites of Man in Hong-Kong, by J. Bell, M.R.C.S. (Hong-Kong); Immunisation against Pneumonic Plague, by Richard P. Strong, M.D. (Manila); Preventive Inoculation in Experimental Plague-Pneumonia, by Professor G. Shibiyama (Tokyo); the Connexion between Man and Rat in the Plague Epidemic in Malang, Java, during 1911, by W. L. de Vogel, M.D. (Batavia). This last paper was accompanied by an interesting series of lantern photographs, showing how the rats were found in the bamboo supports of the native houses.

On Jan. 24th papers were read on the Prophylaxis of Syphilis in Natives by "606," by M. L. R. Montel, M.D. (Saigon); the Care of the Eyesight in the Tropics, by G. M. Harston, M.D. (Hong-Kong); Vesical Calculi in South China, with a Report of more than 1000 Cases, by J. M. Swan, M.D. (Canton); Carbon-Dioxide Snow in Private Practice in the Tropics, by G. P. Jordan, M.B. (Hong-Kong); Results of the Past Two Years' Work in the Study of Tropical Sunlight, by Paul C. Freer, M.D. (Manila). There was no afternoon session on this day.

On Jan. 25th papers were read on Opium Poisoning, by A. Gauducheau, M.D., Médecin-Major (Hanoi); Care of Children in the Tropics, by G. M. Harston, M.D. (Hong-Kong); The Need for Physiological Standards in Clinical Research, by G. D. Whyte, M.B. (Swatow); The Prophylaxis of Umbilical Tetanus at Saigon, by M. L. R. Montel, M.D. (Saigon); Latest Researches into Spotted Fever, by Staff-Surgeon Dr. Fürth (Tsingtau); Relapsing Fever and its Treatment by Salvarsan, by W. V. M. Koch, M.D. (Hong-Kong); Miliary Fever, by Dr. Sairailhé (Bienhoa, Cochin China); and Blood Pressure, by J. C. Dalmahoy Allen, M.D. (Hong-Kong).

Jan. 26th was devoted to the subject of malaria and public health, and papers were read on Malaria as a Factor in the Etiology of Biliary Calculi, by G. A. Finlayson, M.B. (Singapore); Remarkable Parasites in a case of Tertian Malaria, by Captain H. M. Neeb, M.D. (Batavia); A Revision of the Anopheline Mosquitoes of British Malaya, by Major S. P. James, M.B., I.M.S. (Simla); Ceratopogon Parasitic on Anopheles, by A. T. Stanton, M.D. (Kuala Lumpur); Blackwater Fever in Burma, by L. J. Fink, M.B. (Burma); Anti-malarial Campaign in Formosa, by Dr. Hatori (Formosa); Mortality, Birth-rate, and Sanitation in Saigon, by M. L. R. Montel, M.D. (Saigon); Indian Native Immigration, by Sir Allan Perry, M.D. (Ceylon); and the Necessity for Uniform Quarantine Regulations for all the Coast Ports of China, by Fleet-Surgeon Dr. Uthermann (Tsingtau).

The association adopted a report to secure uniformity in quarantine at Eastern ports, the main points in which were: 1. The establishment of a definition for the term "status sporadicus" and a common standard for the term "epidemic." The definitions suggested were: *Status sporadicus* in respect of any communicable disease means the existence in a place, within the next preceding 14 days, of a case or cases of that disease, not definitely traceable to an imported case. *Status epidemicus:* Plague, cholera, small-pox, typhus exanthematicus, trypanosomiasis, or other communicable diseases shall be considered to be epidemic in any port, place, or defined locality, when after the first telegraphic report of the appearance or recrudescence of the disease, any weekly report thereafter shall show the occurrence of an average daily number of three cases, exclusive of cases imported into, or originating in, a quarantine station. 2. Circulation among the signatories of weekly returns of plague (human or rodent), cholera, small-pox, yellow fever, typhus, trypanosomiasis, and telegraphic information of first occurrence in a clean territory. 3. To issue a bill of health to all outgoing vessels detailing the facts as to quarantinable disease in the territory of departure. 4. To report by telegram to destination the departure of an infected or suspected ship, and endorse the ship's bill of health with full particulars as to disinfection practised. 5. Ships from a plague-infected place or carrying persons or suspected cargo therefrom, but showing no evidence of plague in man or rodent, shall not be disinfected at ports of call, if it can be shown that the vessel has been properly treated for vermin, the persons on board and their effects properly disinfected, and objectionable classes of cargo rejected or properly disinfected.

Jan. 27th was devoted to the business meeting. An invitation for the next biennial congress to be held at Saigon in 1913–14 was accepted. Votes of thanks were given to various officers and others—especially to Dr. Francis Clark, the honorary secretary, for his invaluable work in connexion with the Congress.

Exhibits.

Dr. J. M. Swan, Canton, lent a collection of 1000 vesical calculi; Mr. W. J. Tutcher, Hong-Kong, herbarium specimens of medicinal plants found growing in China; and the Tung Wah Hospital, Hong-Kong, Chinese drugs in common use. Messrs. Burroughs, Wellcome, and Co., London, exhibited "Wellcome" brand quinine, quinine hydrochloride tabloids, "epinine" for syphilis and trypanosomiasis, tabloid medicine cases, and other pharmaceutical preparations; Messrs. Down Bros., London, surgical instruments and aseptic furniture; Messrs. Allen and Hanburys, London, surgical instruments and "Allenbury" specialities; and E. Leitz, Wetzlar, microscopes and bacteriological instruments and apparatus.

THE LONDON SCHOOL OF CLINICAL MEDICINE.

THE annual dinner of this institution was held under the presidency of H.S.H. Prince LOUIS of BATTENBERG in the rooms of the Royal Institute of Painters in Water Colours, Piccadilly, W., on March 1st, when covers, distributed among 24 tables, were laid for more than 170 persons. The chairman, with Sir Thomas Barlow, Admiral Sir John Durnford, Director-General Sir James Porter, R.N., Mr. Rickman J. Godlee, and Sir Malcolm Morris, occupied one table, while the remaining 23 tables were apportioned among other members of the school and their guests, among whom may be mentioned Sir William Bennett, Surgeon-General Sir Arthur Branfoot, I.M.S. (retired), Sir James Crichton-Browne, Sir Henry Burdett, Sir James Mackenzie Davidson, Sir Dyce Duckworth, Sir John Rose Bradford, Director-General Sir W. Launcelot Gubbins, Sir Frederic Hewitt, Professor R. T. Hewlett, Admiral Swinton Holland, Admiral

H. W. Savory, Captain A. W. Clarke, Professor W. J. R. Simpson, C.M.G., Dr. S. Squire Sprigge, Dr. Frederick Taylor, Mr. C. Louis Taylor, Dr. C. C. Choyce (Dean of the School), and Mr. P. J. Michelli, C.M.G. (secretary of the Seamen's Hospital).

In proposing the toast of the evening, the CHAIRMAN pointed out that the School of Clinical Medicine was founded in 1906 for the purpose of affording for post-graduate students an opportunity of bringing themselves into touch with the most recent developments in medicine and surgery. It was felt that at the Dreadnought Hospital there existed a large amount of clinical material which was lost to education, and the sanction of the committee of the Seamen's Hospital Society having been obtained the school received the sympathy and help of the leading physicians and surgeons of the medical profession. During the first year's work 68 students attended, and since that time the activities of the school had steadily been extended. Since 1906, 560 students had been enrolled, composed of all classes of medical men coming from Great Britain and Ireland, Canada, United States of America, Peru, Nicaragua, Chili, Brazil, Argentine, Spain, Greece, Holland, Germany, France, India, China, Straits Settlements, Australia, New Zealand, and South Africa. The school had been well attended by officers of the medical services either before or after their entry into those services. From the very first the naval surgeons seconded for study had availed themselves of the advantages of the new school, and within the last 18 months, owing to the action of the Durnford Commission, acting in conjunction with the Director-General of the Medical Department of the Navy, Sir James Porter, systematic courses of instruction had been attended by from 20 to 30 officers annually. It was hoped that in the future a still closer connexion would be established between the Clinical School and the Royal Naval College at Greenwich. The Dreadnought Hospital and Clinical School afforded one of the most complete courses of operative surgery in the kingdom, and negotiations were also in progress whereby the post-graduate student would be afforded instruction in practical medicine. After complimenting the board of management of the Seamen's Hospital on its excellent work, His Serene Highness pointed out that hospitals were charitable institutions supported by a generous public. Everyone who realised what the nation owed to men of the mercantile marine should contribute to the maintenance of such excellent and necessary institutions as those of the Seamen's Hospital Society, and although the present occasion was not one in which he had been desired to make an appeal for money he would hint to those who were generously disposed that additions to the financial resources of the society would be more than welcomed.

Sir MALCOLM MORRIS, with whose name the toast had been coupled, in his reply said that the appointment of His Serene Highness (who had made the dinner a success by his presence in the chair that evening) to the office of a Sea Lord had given the most profound gratification to every Englishman. Comparing the progress which had been made in naval matters and in medicine, he pointed out an almost exact coincidence. The change from the old wooden ship to the modern Dreadnought, the torpedo boat, and the submarine was as great a revolution as that which had taken place in medicine owing to the action of one man, a man whom they had laid to rest within the last few days, Lord Lister. We trusted in the navy for our protection, and what the navy did for our shores and our homes Lord Lister had done for our bodies. Sir Malcolm Morris also referred to the introduction and use of the Roentgen rays and the enormous advance in medicine due to this agent owing to the work of, among others, Sir Mackenzie Davidson, and drew an interesting comparison between the deep-sea sounding experiments of Lord Kelvin and modern methods of exploring the cavities of the human body. Referring to the need for post-graduate studies, he said that the greatest insurance that could be given to the nation was the insurance of a highly skilled and highly educated doctor, and they were greatly indebted to the head of the Navy Department for allowing the naval surgeons to use the clinical school for instruction.

Captain A. W. CLARKE proposed the toast of "The Medical Services" with considerable happiness, departing from the formal statement, with which he had been supplied by the authorities, to detail his own experiences, as one who had been all over the world, of the vast debt which scattered communities owe to the ministrations of medicine.

Director-General Sir JAMES PORTER, who replied, said that it was now recognised that only the best that the medical profession could furnish was good enough for the service which he represented, and referred to the connexion between the Royal Naval Medical Service, the Royal Army Medical Corps, the Indian Medical Service, and the Colonial Services, which was now being recognised so that those services were not going to live any longer in water-tight compartments.

Sir JOHN ROSE BRADFORD, who proposed "The Guests," referred with gratitude to the great interest which the Colonial Office and successive Colonial Secretaries had taken in the advancement of tropical medicine. With the toast he coupled in humorous phrases the names of Sir Thomas Barlow (the President of the Royal College of Physicians of London) and Mr. Rickman Godlee (the President of the Royal College of Surgeons of England), who both made suitable replies.

The dinner was the largest ever held by the school.

Public Health.

REPORTS OF MEDICAL OFFICERS OF HEALTH.

County of East Sussex.—Mr. A. G. R. Foulerton attributes an important share in the reduction of infant mortality in this county to the influence of the large number of trained midwives introduced into the rural districts by the Sussex Nursing Association, and to the supervision of untrained midwives by the county authorities. In the class of mothers among whose infants the highest mortality occurs it is often of little use to distribute leaflets, however well prepared, while women health visitors are prone to be looked on with suspicion and considered unpractical. The midwife, on the other hand, nearly always has the mother's full confidence, and her advice usually determines the mother's treatment of her infant. In January, 1911, the midwives under supervision numbered 159, of whom 86 were trained. Out of 1931 maternity cases in which the midwives acted as such, and not as monthly nurses, it was necessary for them in 193 instances to send for medical aid on behalf of the mother or the infant. During 1910 the rate of reported still-births was 1 for every 74 confinements. The report reviews a variety of subjects arising out of the annual reports from individual districts in the county for 1910, and, as is frequently the case with county reports, makes a somewhat late appearance in consequence of the time required to get all the data completed. In this instance, however, the delay has enabled the county statistics to be revised by the Census data of 1911, which showed that the aggregate of the several local estimates of population was some 10,000 in excess of the actual figure.

County of Kent.—Dr. W. J. Howarth's report gives a further illustration of the great progress which has been made in many directions in organising the county sanitary service. It contains some important observations on the condition of the encampments of hop-pickers which should be seriously considered by those concerned. Where huts are employed it is common to find no provision for surface drainage and no rain-water spouting, with the result of much dampness and discomfort to the occupants. The tents used are often unsatisfactory, particularly for the women and children, being badly pitched and not watertight. The by-laws require cooking-houses to be thoroughly cleaned and kept clean, but unfortunately do not insist on cooking-houses being provided. The privy accommodation is also generally inadequate, and in Maidstone rural district Dr. Tew refers to the liability which still exists for the pollution of water-supplies, and expresses the fear that the lessons of the typhoid epidemic of 1897 are being forgotten or ignored. It would seem that the encampments of hop-pickers are in many places of a considerable size, and there is much to be said for the local authority detailing special men during the picking season to supervise the scavenging arrangements and ensure the protection of water-supplies. Frequent inspection of the foodstuffs brought in barrows to these encampments is also particularly necessary.

City of York.—Dr. Edmund M. Smith's annual report for this city is interesting reading as showing the care which is given to all branches of public health administration. It is reasonable to conclude that the notable decline in the

general death-rate and also in the mortality from tuberculosis and diseases of infancy which has characterised York during the past decade is to be attributed to a material extent to the increased efficiency of the municipal sanitary work. The efforts already made in various directions to combat tuberculosis are particularly striking, and the experience gained should be invaluable now that the administrative conditions are altered by general notification of pulmonary tuberculosis and by the prospect of sanatorium provision being available on a large scale. There are three school nurses for the city whose work is combined with that of health visiting. In the latter duties the rule that no notes should be taken by the health visitor at the homes is at first sight arbitrary, but has much to commend it. The results of inquiries made as to the practice of different towns in dealing with tuberculous meat show that while the recommendations of the Royal Commission of 1898 are usually taken as the standard they are frequently departed from. In York the entire carcass is not condemned when tuberculous lesions are present in both body cavities but are "in the early stages," or even when they are present in the muscular system or in the lymphatic glands embedded in the muscles. Cases in which the latter conditions obtain do not often come under notice in meat inspection, but when they do there is usually substantial ground for total condemnation. The employment of a veterinary meat inspector, who acts with the sanitary inspectors in systematic inspection of the numerous private slaughter-houses, has had satisfactory results, while butchers, as a result of their system of insurance, show an increasing disposition to consult the sanitary authorities in all cases of doubt. In advising on the destruction of rats Dr. Smith lays stress on the advantages of using bacterial virus and on the harmlessness of the virus to man. The latter statement needs the qualification that the virus should not be allowed to contaminate food or places where food is kept. A substantial beginning appears to have been made in applying the provisions of the Housing Act and regulations to insanitary property in York.

Metropolitan Borough of Wandsworth.—A bulky volume has lately been issued by the borough council which comprises a mass of information relating its general administration up to March 31st, 1911, and includes the reports of the medical officer of health and the public analyst for 1910. These show that the proportion of samples of foods taken under the Sale of Food and Drugs Acts which proved to be adulterated or otherwise unsatisfactory was as high as 9 per cent., a figure attributed mainly to greater discrimination in the selection of the samples and to the improved methods employed in obtaining them. Among the adulterations reported the substitution for arrowroot of a flour containing 90 per cent. of tapioca may be mentioned. As Dr. P. Caldwell Smith points out, a comparison of the price paid for the arrowroot, 1*s.* 6*d.* a pound, with that usually paid for tapioca, 3*d.* a pound, shows that a large profit may be obtained by this practice. The amount of boron preservative in some samples of prepared meats was exceptionally high, in one case (sausages) reaching 55 grains per pound. Proceedings were taken against certain of the vendors and convictions obtained. This was also the case with a sample of cocoa containing 33 per cent. of extraneous shell, and with several samples where margarine was substituted for butter. The penalties usually imposed in these cases seem, however, to be much too small. A fine of £1, or even £5, is not enough to act as a deterrent to the practice of gross and profitable frauds such as are recorded in these reports. We would like to see more drastic action, for example, in the case of skim milk found to contain 44 per cent. of added water, or of the vendor who carries unadulterated milk in his large churn for the benefit of inspectors and casual purchasers, while habitually distributing adulterated milk in small cans to his regular customers.

VITAL STATISTICS.

HEALTH OF ENGLISH TOWNS.

IN the 94 largest English towns having an estimated population of 17,559,219 persons in the middle of this year, 8793 births and 5194 deaths were registered during the week ending March 2nd. The annual rate of mortality in these towns, which had decreased from 21·6 to 16·8 per 1000 in the three preceding weeks, further declined to 15 4 per 1000 in the week under notice. During the first nine weeks of the current quarter the mean annual death-rate in these large towns averaged 17·0 per 1000, while in London during the same period the average death-rate did not exceed 16·2 per 1000. The annual death-rates last week in the several towns ranged from 3 5 in Acton, 6·4 in Wallasey and Darlington, 7·5 in Ilford, and 8 0 in Lincoln, to 23·7 in Ipswich, 23·8 in Huddersfield, 24 6 in Merthyr Tydfil, 24 9 in Gloucester, and 26·8 in Great Yarmouth.

The 5194 deaths from all causes last week were 451 fewer than the number in the previous week, and included 394 which were referred to the principal epidemic diseases, against numbers declining from 435 to 353 in the three preceding weeks. These 394 deaths from the principal epidemic diseases included 142 which resulted from whooping-cough, 109 from measles, 53 from diphtheria, 49 from infantile diarrhœal diseases, 21 from scarlet fever, and 20 from enteric fever, but not one from small-pox. The mean annual death-rate from these diseases last week was equal to 1 2 per 1000, against 1·1 and 1·0 in the two preceding weeks. The deaths attributed to whooping-cough, which had decreased from 186 to 147 in the three preceding weeks, again declined to 142 last week, and caused the highest annual death-rates of 2 2 in Tottenham, 2·3 in West Bromwich, 2·8 in Walsall, and 3 8 in Merthyr Tydfil. The deaths referred to measles, which had been 98, 69, and 88 in the three preceding weeks, rose to 109 last week; the highest annual death-rates from this disease were 1·7 in Rhondda, 2 2 in Manchester, 2·5 in York, 2·7 in Salford, and 2 8 in Warrington. The fatal cases of diphtheria, which had declined from 71 to 44 in the four preceding weeks, rose to 53 last week, and included 23 in London and its 14 suburban districts, and 2 each in Birmingham, Grimsby, Manchester, Huddersfield, Rotherham, and Newcastle-on-Tyne. The deaths of infants under two years of age attributed to diarrhœal diseases, which had been 49, 58, and 39 in the three preceding weeks, rose to 49 last week; 23 deaths occurred in London and its suburban districts, and 3 each in Liverpool, Manchester, Salford, and Cardiff. The deaths referred to scarlet fever, which had been 22, 28, and 17 in the three preceding weeks, rose to 21 last week, and included 3 in Birmingham, and 2 each in London, Manchester, Preston, Huddersfield, and Leeds. The 20 fatal cases of enteric fever were 2 in excess of the average in the eight preceding weeks of the current quarter; 4 deaths were registered in Manchester, and 2 each in London, Salford, and Cardiff.

The number of scarlet fever patients under treatment in the Metropolitan Asylums and in the London Fever Hospital, which had decreased from 1512 to 1427 during the three preceding weeks, had further declined to 1392 on Saturday last; 160 new cases of this disease were admitted to these institutions during the week, against 178, 154, and 181 in the three previous weeks. These hospitals also contained on Saturday last 1136 cases of diphtheria, 462 of whooping-cough, 222 of measles, and 64 of enteric fever, but not one of small-pox. The 1228 deaths from all causes recorded in London were 106 fewer than the number in the previous week, and were equal to an annual death-rate of 14·2 per 1000. The deaths referred to diseases of the respiratory system, which had decreased from 545 to 352 in the three preceding weeks, further declined to 295 last week, and were 23 below the number registered in the corresponding week of last year.

Of the 5194 deaths in the 94 large towns, 172 resulted from different forms of violence, and 374 were the subject of coroners' inquests. The causes of 34, or 0·7 per cent., of the deaths registered last week were not certified either by a registered medical practitioner or by a coroner after inquest. All the causes of death were duly certified in Sheffield, Leeds, Bristol, West Ham, Bradford, Hull, Nottingham, Portsmouth, and in 66 other smaller towns. The 34 uncertified causes of death last week included 6 in Birmingham, 4 in London, and 2 each in Stoke-on-Trent, Dudley, St. Helens, Burnley, Blackburn, and Sunderland.

HEALTH OF SCOTCH TOWNS.

In the 18 largest Scotch towns, having an estimated population of 2,182,400 persons in the middle of this year, 1175 births and 784 deaths were registered during the week

ending March 2nd. The annual rate of mortality in these towns, which had decreased from 22·8 to 18·5 per 1000 in the three preceding weeks, rose to 18·7 per 1000 in the week under notice. During the first nine weeks of the current quarter the mean annual rate of mortality in these towns averaged 19 1 per 1000, and was 2·1 per 1000 in excess of the mean rate recorded during the same period in the large English towns. The annual death-rates in the several Scotch towns last week ranged from 10·3 in Kirkcaldy, 12·9 in Clydebank, and 13·3 in Aberdeen, to 22·5 in Hamilton and in Kilmarnock, and 24·0 in Greenock.

The 784 deaths from all causes were 9 in excess of the number in the preceding week, and included 93 which were referred to the principal epidemic diseases, against numbers steadily rising from 89 to 120 in the five preceding weeks. Of these 93 deaths, 56 resulted from measles, 16 from whooping-cough, 9 from diphtheria, 6 from scarlet fever, 5 from infantile diarrhœal diseases, and 1 from enteric fever, but not one from small-pox. These 93 deaths from the principal epidemic diseases were equal to an annual death-rate of 2·2 per 1000, or 1·0 per 1000 above that recorded in the 94 large English towns. The deaths attributed to measles, which had averaged 62 in the three preceding weeks, declined to 56 last week, and included 27 in Glasgow, 7 in Greenock, 5 in Edinburgh, and 5 in Kilmarnock. The deaths referred to whooping-cough, which had been 14 and 18 in the two preceding weeks, slightly declined to 16, and of this number 4 were registered in Glasgow, 3 in Edinburgh, and 2 in Dundee. The fatal cases of diphtheria, which had been 6 and 22 in the two previous weeks, fell to 9 last week, and included 4 in Glasgow and 2 in Edinburgh. The 6 deaths attributed to scarlet fever were 3 in excess of the number in the previous week, and included 2 in Glasgow and 2 in Aberdeen. The deaths of infants referred to diarrhœal diseases, which had been 14 and 11 in the two preceding weeks, further declined to 5 last week. The fatal case of enteric fever was recorded in Kirkcaldy.

The deaths referred to diseases of the respiratory system in the 18 towns, which had decreased from 220 to 192 in the three preceding weeks, further declined to 138 in the week under notice, and 24 deaths were attributed to different forms of violence.

HEALTH OF IRISH TOWNS.

In the 22 town districts of Ireland, having an estimated population of 1,157,014 persons in the middle of this year, 673 births and 490 deaths were registered during the week ending March 2nd. The annual rate of mortality in these towns, which had decreased from 31·0 to 24·6 per 1000 in the three preceding weeks, further declined to 22 1 per 1000 in the week under notice. During the first nine weeks of the current quarter the mean annual death-rate in these Irish towns averaged 23·5 per 1000; in the 94 large English towns the mean annual death-rate during the same period did not exceed 17 0 per 1000, while in the 18 Scotch towns it was equal to 19·1 per 1000. The annual death-rates in the several Irish towns last week were equal to 24·9 in Dublin (against 14·2 in London), 21·6 in Belfast, 21 1 in Cork, 12·7 in Londonderry, 16·3 in Limerick, and 19·0 in Waterford; while in the 16 smallest of these Irish towns the death-rate last week was equal to 21·0 per 1000.

The 490 deaths from all causes in the 22 Irish towns were 55 fewer than the number in the previous week, and included 36 which were referred to the principal epidemic diseases, against numbers declining from 49 to 27 in the three preceding weeks; of these 36 deaths, 16 resulted from whooping-cough, 9 from diarrhœal diseases, 5 from measles, 3 from scarlet fever, and 3 from diphtheria, but not one from enteric fever or from small-pox. These 36 deaths from the principal epidemic diseases were equal to an annual death-rate of 1 6 per 1000; the death-rate last week from these diseases did not exceed 1·2 per 1000 in the 94 large English towns, while in the 18 Scotch towns it was equal to 2 2. The deaths attributed to whooping cough, which had declined from 25 to 14 in the three preceding weeks, rose to 16 last week, and included 11 in Belfast and 3 in Dublin. The deaths of infants referred to diarrhœal diseases, which had been 8 and 5 in the two previous weeks, rose to 9 last week; 4 deaths were recorded in Dublin, 2 in Belfast, and 2 in Clonmel. The 5 fatal cases of measles were equal to the average in the three preceding weeks, and were all registered in Dublin. The 3 deaths referred to scarlet fever, and the 3 fatal cases of diphtheria were also registered in Dublin.

The deaths referred to diseases of the respiratory system, which had decreased from 239 to 189 in the three preceding weeks, further declined to 135 last week. Of the 490 deaths from all causes in the 22 Irish towns, 142, or 29 per cent., occurred in public institutions, and 7 resulted from different forms of violence. The causes of 17, or 3·5 per cent., of the total deaths were not certified either by a registered medical practitioner or by a coroner after inquest; in the 94 large English towns the proportion of uncertified causes of deaths in the week under notice did not exceed 0·7 per cent.

VITAL STATISTICS OF LONDON DURING JANUARY, 1912.

IN the accompanying table will be found summarised complete statistics relating to sickness and mortality in the City of London and in each of the metropolitan boroughs. With regard to the notified cases of infectious diseases, it appears that the number of persons reported to be suffering from one or other of the ten diseases specified in the table was equal to an annual rate of 5·3 per 1000 of the population, estimated at 4,519,754 persons in the middle of the year. In the three preceding months the rates were 8·5, 7·8, and 6·3 per 1000 respectively. The lowest rates last month were recorded in Paddington, Hammersmith, City of Westminster, Stoke Newington, and Shoreditch; and the highest rates in Hampstead, St. Pancras, Holborn. Deptford, and Greenwich. Three cases of small-pox, all belonging to Woolwich, were notified last month, none having been notified in London during the six preceding months; 2 cases remained under treatment in a Metropolitan Asylums Hospital at the end of the month. The prevalence of scarlet fever continued to show a decline; this disease was proportionally most prevalent last month in Fulham, Chelsea, St. Marylebone, Deptford, Greenwich, and Woolwich. The Metropolitan Asylums Hospitals contained 1473 scarlet fever patients at the end of the month, against 2152, 2103, and 1878 at the end of the three preceding months; the weekly admissions averaged 165, against 317, 254, and 198 in the three preceding months. Diphtheria was slightly less prevalent than it had been in the preceding month; the greatest proportional prevalence of this disease was recorded in Hampstead, St. Pancras, Holborn, Poplar, Greenwich, and Lewisham. The number of diphtheria patients under treatment in the Metropolitan Asylums Hospitals, which had been 1143, 1327, and 1294 at the end of the three preceding months, had further declined to 1191 at the end of last month; the weekly admissions averaged 134, against 168 and 180 in the two preceding months. Enteric fever also was less prevalent than in the previous month; this disease was proportionally most prevalent last month in Bethnal Green, Stepney, Poplar, Southwark, Bermondsey, and Lambeth. There were 49 enteric fever patients under treatment in the Metropolitan Asylums Hospitals at the end of last month, against 160, 85, and 76 at the end of the three preceding months; the weekly admissions averaged 8, against 9 in each of the two preceding months. Erysipelas was proportionally most prevalent in Holborn, Shoreditch, Bethnal Green, Poplar, Battersea, and Deptford. The 39 cases of puerperal fever notified during the month included 5 in Kensington, 5 in Stepney, 4 in Fulham, and 3 each in the City of Westminster, Poplar, Southwark, and Camberwell. Ten cases of cerebro-spinal meningitis, including 3 in Paddington; and 4 of poliomyelitis, including 2 in Camberwell, were notified during the month.

The mortality statistics in the table relate to the deaths of persons actually belonging to the several boroughs, the deaths occurring in institutions having been distributed among the boroughs in which the deceased persons had previously resided; the death-rates from all causes are further corrected for variations in the sex- and age-constitution of the populations of the several boroughs. During the five weeks ending Feb. 3rd the deaths of 6736 London residents were registered, equal to an annual rate of 16·3 per 1000; in the three preceding months the rates had been 15·1, 14·1, and 16·1 per 1000. The death-rates last month ranged from 11·7 in Hampstead, 13·1 in Wandsworth, 13 6 in Stoke Newington, 13·9 in Lewisham, 14·0 in Camberwell, and 14·2 in Hackney, to 19·2

ANALYSIS OF SICKNESS AND MORTALITY STATISTICS IN LONDON DURING JANUARY, 1912.

(Specially compiled for THE LANCET.)

CITIES AND BOROUGHS.	Estimated population in the middle of 1912.	NOTIFIED CASES OF INFECTIOUS DISEASE.												DEATHS FROM PRINCIPAL INFECTIOUS DISEASES.‡										Deaths from all causes.	Death-rate per 1000 living.†
		Small-pox.	Scarlet fever.	Diphtheria.*	Typhus fever.	Enteric fever.	Other continued fevers.	Puerperal fever.	Erysipelas.	Cerebro-spinal meningitis.	Poliomyelitis.	Total.	Annual rate per 1000 persons living.	Small-pox.	Measles.	Scarlet fever.	Diphtheria.*	Whooping-cough.	Enteric fever.	Diarrhœa and enteritis (under 2 years).	Total.	Annual rate per 1000 persons living.			
LONDON...	4,519,754	3	922	765	—	94	2	39	471	10	4	2310	5·3	1	63	9	55	78	16	88	310	0·7	6736	16 3
West Districts.																									
Paddington	142,362	—	15	28	—	2	—	1	6	3	—	55	4·0	—	4	—	1	4	—	—	9	0 7	212	16 5
Kensington	171,746	—	30	26	—	—	—	5	19	—	—	80	4·9	—	4	—	—	2	1	3	10	0 6	275	18·0
Hammersmith	122,750	—	16	21	—	—	—	—	13	—	—	50	4 2	—	—	1	1	—	—	1	3	0·3	169	15 0
Fulham	155,402	—	47	22	—	2	—	4	19	—	—	94	6·3	—	3	—	3	4	1	1	12	0·8	228	16·0
Chelsea	65,397	—	19	7	—	1	—	—	5	—	—	32	5·1	—	1	—	—	—	1	1	3	0·5	116	19·2
City of Westminster	157,248	—	15	22	—	—	—	3	11	—	—	51	3 4	—	3	—	—	1	1	2	7	0·5	227	16 9
North Districts.																									
St. Marylebone	116,155	—	37	20	—	1	—	—	5	—	1	64	5·7	—	2	1	1	3	—	2	9	0·8	178	17·0
Hampstead	85,966	—	17	32	—	2	—	—	2	—	1	54	·6	—	—	1	4	—	—	—	5	0 6	86	11·7
St. Pancras	216,145	—	58	68	—	3	—	1	25	—	—	155	7·5	—	—	—	5	4	—	7	16	0·8	325	16·4
Islington	326,398	—	67	47	—	7	—	2	17	—	—	140	4 5	—	8	—	5	10	—	6	29	0·9	532	17·7
Stoke Newington...	50,581	—	13	4	—	—	—	—	3	—	—	20	4·1	—	—	—	—	—	—	1	1	0·2	63	13·6
Hackney	222,986	—	61	39	—	4	—	1	25	1	—	131	6·1	—	—	—	3	5	—	3	11	0 5	290	14·2
Central Districts.																									
Holborn	48,026	—	5	12	—	—	—	—	13	1	—	31	6·7	—	1	—	1	—	—	—	2	0 4	81	18 9
Finsbury	86,130	—	13	16	—	1	—	2	11	—	—	43	5·2	—	—	1	—	—	—	5	6	0·7	165	20·7
City of London	18,695	—	4	2	—	—	—	—	1	1	—	8	4·4	—	1	—	—	—	—	1	2	1·1	36	22·1
East Districts.																									
Shoreditch	110,430	—	12	9	—	1	—	1	17	—	—	40	3·8	—	1	1	3	3	—	6	14	1·3	214	21·2
Bethnal Green	127,985	—	31	9	—	5	—	—	20	—	—	65	5·3	—	—	1	1	1	1	1	5	0 4	213	17·6
Stepney	277,315	—	29	38	—	10	—	5	39	1	—	122	4·6	—	—	—	2	7	2	9	20	0·8	419	16·5
Poplar	161,597	—	20	35	—	7	—	3	33	1	—	99	6·4	—	—	—	4	11	1	4	20	1·3	304	20 2
South Districts.																									
Southwark	190,017	—	24	28	—	8	—	3	25	1	—	89	4·9	—	2	—	4	2	—	2	10	0·5	299	17·1
Bermondsey	125,260	—	23	25	—	10	—	—	14	1	—	73	6·1	—	5	—	3	3	1	3	15	1 2	229	19·6
Lambeth	297,550	—	68	29	—	13	—	2	25	—	—	137	4·8	—	2	1	4	5	4	7	23	0 8	414	15 0
Battersea...	167,589	—	39	23	—	2	—	—	25	—	—	89	5·5	—	—	—	2	2	1	4	9	0·6	243	16·2
Wandsworth	321,881	—	65	55	—	5	2	1	24	—	—	152	4·9	—	—	1	4	3	—	7	15	0·5	382	13·1
Camberwell	261,591	—	48	42	—	2	—	3	25	—	2	122	4·9	—	4	—	1	—	—	3	8	0·3	339	14 0
Deptford	109,377	—	36	21	—	—	—	1	21	—	—	79	7·6	—	11	—	—	2	—	2	15	1·4	171	17·2
Greenwich	95,994	—	30	24	—	—	—	1	10	—	—	65	7·1	—	10	—	—	5	—	2	17	1·8	145	16·1
Lewisham	165,249	—	39	39	—	6	—	—	8	—	—	92	5 8	—	—	—	3	—	2	4	9	0·6	210	13·9
Woolwich...	121,932	3	41	20	—	2	—	—	10	—	—	76	6·5	1	1	1	—	1	—	1	5	0 4	171	15 6
Port of London	—	—	—	2	—	—	—	—	—	—	—	2	—	—	—	—	—	—	—	—	—	—	—	—	—

* Including membranous croup. † The death-rates are corrected for variations in sex- and age-constitution of the populations of the several boroughs, the population of England and Wales being taken as the standard. ‡ Deaths from "typhus fever" and "other continued fevers" are not now distinguished in the Registrar-General's weekly returns; these two columns are therefore omitted from the Table.

in Chelsea, 19·6 in Bermondsey, 20·2 in Poplar, 20·7 in Finsbury, 21·2 in Shoreditch, and 22·1 in the City of London. The 6736 deaths from all causes included 310 which were referred to the principal epidemic diseases; of these, 1 resulted from small-pox, 63 from measles, 9 from scarlet fever, 55 from diphtheria, 78 from whooping-cough, 16 from enteric fever, and 88 from diarrhœa and enteritis among children under 2 years of age. The lowest death-rates from these diseases in the aggregate were recorded in Hammersmith, Stoke Newington, Holborn, Bethnal Green, Camberwell, and Woolwich; and the highest rates in Shoreditch, Poplar, Bermondsey, Deptford, and Greenwich. The 63 deaths from measles were 151 below the corrected average for the corresponding period of the five preceding years; the greatest proportional mortality from this disease was recorded in Paddington, Islington, Bermondsey, Deptford, and Greenwich. The 9 fatal cases of scarlet fever showed a decline of 34 from the corrected average number. The 55 deaths from diphtheria were 31 below the average; this disease was proportionally most fatal in Hampstead, St. Pancras, Shoreditch, Poplar, and Bermondsey. The 78 fatal cases of whooping-cough were 74 fewer than the corrected average number; the greatest proportional mortality from this disease was recorded in Paddington, Islington, Shoreditch, Poplar, and Greenwich. The 16 deaths from enteric fever were 6 below the average, and included 4 in Lambeth, 2 in Stepney, and 2 in Lewisham. The mortality from diarrhœa and enteritis among children under two years of age was proportionally greatest in St. Pancras, Finsbury, Shoreditch, and Stepney. In conclusion, it may be stated that the aggregate mortality in London last month from the principal epidemic diseases (excluding diarrhœa) was 40 per cent. below the average.

THE SERVICES.

ROYAL NAVY MEDICAL SERVICE.

THE following appointments have been notified:—Fleet-Surgeons: R. A. Ross to the *Hindustan;* H. W. Gordon-Green to the *Collingwood;* and R. J. MacKeown to the *Vanguard.* Staff-Surgeon: W. K. Hopkins to the *Commonwealth.* Surgeons: J. C. F. D. Vaughan to the *Vanguard;* H. B. German to the *Collingwood;* and M. H. Langford to the *Halcyon*, additional, for the *Spanker.*

ROYAL ARMY MEDICAL CORPS.

Lieutenant-Colonel William A. Morris is placed on retired pay (dated March 1st, 1912).

Major William Hallaran to be Lieutenant-Colonel vice W. A. Morris (dated March 1st, 1912).

The undermentioned Captains to be Majors (dated Feb. 29th, 1912): Francis P. Lauder and John Tobin.

Surgeon-General J. G. MacNeece has been selected for appointment as Principal Medical Officer of the Southern Command, in succession to Surgeon-General H. R. Whitehead, C.B., with effect from April 1st.

Colonel R. I. D. Hackett, principal medical officer of the Karachi Brigade, has been granted six months' combined leave of absence home from India. Colonel W. W. Pike, D.S.O., lately senior medical officer at Cairo, has taken up duty as Principal Medical Officer of the Bombay Brigade, in succession to Colonel R. H. Forman, honorary surgeon to H.E. the Viceroy, who has been placed on retired pay. Colonel W. G. Macpherson, C.M.G., principal medical officer of the Fourth (Quetta) Division, has been appointed an Honorary Surgeon to the King.

Lieutenant-Colonel M. J. Sexton, lately holding medical charge of the Military Hospital, Arbor Hill, Dublin, has taken up duty at Wynberg. Lieutenant-Colonel J. Donaldson, in charge of the isolation hospital at Aldershot, has embarked for a tour of duty in India. Lieutenant-Colonel E. A. Burnside, from Golden Hill, has been appointed to command the Station Hospital at Bellary, Madras Presidency. Lieutenant-Colonel J. M. F. Shine, on return from Fyzabad, has been appointed Senior Medical Officer at Jersey, vice Lieutenant-Colonel F. P. Nichols. Lieutenant-Colonel L. T. M. Nash, on completion of a tour of service in India, at Karachi, has been appointed to hold charge of the Military Hospital at Hounslow. Lieutenant-Colonel T. G. Lavie, at present serving at Queenstown, has been placed under orders for a tour of service in Malta.

Major R. W. Clements, specialist sanitary officer of the Ninth (Secunderabad) Division, has been appointed to the substantive charge of the enteric fever convalescent depôt at Wellington, on relief by Captain W. R. Galwey. Major L. Humphry, specialist in advanced operative surgery to the Sixth (Poona) Division, has been granted six months' general leave of absence home from India, with effect from March 30th. Major E. P. Connolly, on arrival in India for a tour of service from Cardiff, has been posted to the Second (Rawal Pindi) Division. Major H. Herrick has been transferred from Hyderabad to the Station Hospital at Naini Tal. Major G. M. Goldsmith, from Maymyo, has been appointed to command the Station Hospital at Thayetmyo, Burma. Major H. H. Norman, from Kasauli, has taken up duty at Shwebo. Major H. S. Roch has been transferred from Lincoln to the Military Hospital at York for duty. Major J. M. Cuthbert, from Leith, has been appointed to the Military Hospital at Edinburgh. Major A. Chopping has been transferred from Cherat to Peshawar. Major J. G. MacNaught, on completion of a tour of service in South Africa, has been appointed to the Aldershot Command. Major E. C. Freeman has been granted by the War Office one year's extension of his appointment as Staff Officer to the Administrative Medical Officer of the East Anglian Division.

Captain T. J. Potter, specialist in bacteriology, has left the London District for service in Egypt. Captain E. V. Aylen, specialist in dermatology, Fourth (Quetta) Division, has been granted eight months' general leave of absence home from India. Captain H. Rogers, stationed at Fort Westmoreland, has been placed under orders for a tour of service in Malta. Captain A. H. Bond, from Naini Tal, has joined the Station Hospital at Delhi for duty. Captain C. T. Connyngham has been appointed Specialist in Dermatology and Venereal Diseases to the Fourth (Quetta) Division. Captain J. A. Bennett has been appointed Specialist in X rays and Electrical Science to the Sixth (Poona) Division. Captain D. M. Corbett has been granted eight months' general leave of absence home from India. Captain R. F. O'T. Dickinson has been transferred from Jhansi to the Station Hospital at Bareilly. Captain F. A. McCammon, at present serving at Poona, has been placed under orders for duty at Colaba. Captain B. A. Craig and Captain H. M. J. Perry have arrived home on duty from Hong-Kong; the former has been posted to Aldershot and the latter to the Eastern Command.

Lieutenant H. S. Blackmore and Lieutenant M. Drummond have been posted to the London District. Lieutenant E. S. Calthorpe has been appointed to Queen Alexandra Military Hospital at Millbank for duty. Lieutenant A. W. Bevis, Lieutenant M. J. Williamson, and Lieutenant C. L. Franklin have embarked for a tour of service in South Africa. Lieutenant T. W. Stallybrass has joined for service in Egypt. Lieutenant P. S. Tomlinson has embarked for a tour of duty in India.

INDIAN MEDICAL SERVICE.

Lieutenant-Colonel H. Fooks, at present holding medical charge of the 15th Lancers (Cureton's Multanis) at Risalpur, has been selected for appointment as officiating Principal Medical Officer of the Aden Brigade during the absence on leave of Lieutenant-Colonel H. F. Cleveland. The services of Lieutenant-Colonel B. B. Grayfoot have been placed at the disposal of the Government of Bombay. Lieutenant-Colonel J. Crimmin, V.C., C.I.E., has been appointed Presidency Surgeon of the Third District in Bombay. Lieutenant-Colonel A. Colman, civil surgeon at Rawal Pindi, has been granted one month's leave of absence.

On relief by Major T. G. N. Stokes of the office of Sanitary Commissioner of the Central Provinces, Major W. H. Kenrick has been placed on special duty in connexion with the prevention of malarial fevers in the Central Provinces. Major T. S. Horley has been transferred as District Medical Officer at Madura. The services of Major L. E. Gilbert have been placed at the disposal of the Government of Madras. Major H. Bennett has been selected for appointment as Civil Surgeon at Karachi. Major R. G. Turner on return from leave has been posted as Civil Surgeon at Naini Tal. The services of Major C. M. Matthew have been placed at the disposal of the Government of India for employment at Madras as Officiating Medical Storekeeper. Major H. J. K. Bamfield has been appointed Specialist in Midwifery and

Diseases of Women and Children to the Second (Rawal Pindi) Division.

Captain N. S. Sodhi has been transferred from Gurgaon to Ludhiana District as Plague Medical Officer. Captain H. W. Illius, Bengal Presidency, has returned to India from leave. Captain H. Ross, chief plague officer in the United Provinces, has been placed on special duty at Lucknow in connexion with the Prince of Wales Medical College. Captain A. W Howlett has been appointed Superintendent of the Central Prisons at Agra, vice Captain A. W. Overbeck-Wright. Captain A. F. Babonau, plague medical officer at Gurgaon, has been transferred to the Ambala district Captain H. B. Scott has been placed in charge of the Civil Surgeoncy at Shwebo until relieved by Captain W. Egan, R.A.M.C.

SPECIAL RESERVE OF OFFICERS.

Royal Army Medical Corps.

Lieutenant Thomas Lindsay is confirmed in his rank.

TERRITORIAL FORCE.

Royal Army Medical Corps.

1st South-Western Mounted Brigade Field Ambulance, Royal Army Medical Corps: The undermentioned officers to be Captains (dated Nov. 16th, 1911):—Lieutenant Thomas H. Haydon and Lieutenant James C. Burton.

2nd Wessex Field Ambulance, Royal Army Medical Corps: The undermentioned officers to be Captains (dated Dec. 25th, 1911):—Lieutenant Edward R. Clarke and Lieutenant Charles R. Crowther.

Attached to Units other than Medical Units.—Lieutenant Andrew Robertson to be Captain (dated Dec. 9th, 1911). Captain William B. Armstrong to be Major (dated Jan. 11th, 1912). Captain Robert J. W. Oswald resigns his commission (dated Feb 28th, 1912).

THE ROYAL ARMY MEDICAL COLLEGE.

The Director-General of the Army Medical Service and officers of the Royal Army Medical College entertained a numerous and distinguished company at a conversazione on Feb 23rd, thereby affording an opportunity for their guests to become acquainted with some of the many-sided activities of this branch of our profession. In the spacious and admirably lighted laboratories and museum of the educational portion of the institution were displayed many interesting exhibits, microscopic, electrical, and chemical, as well as those more especially of military medical appliances. The micro-organisms of the chief tropical diseases were shown in an almost exhaustive series of beautifully stained specimens, and special demonstrations were given by Lieutenant-Colonel Sir W. Leishman, F.R.S., of kala-azar and tick fever; while Captain J. C. Kennedy exhibited Mediterranean fever and trypanosomiasis. The latest method of staining spirochætæ was shown by Major L. W. Harrison, and Major W. S. Harrison and Major H. E. M. Douglas, V.C., D.S.O., demonstrated ankylostomiasis. In the hygienic laboratories Lieutenant-Colonel C. H. Melville and Major H. B. Fawcus showed various recent methods of water sterilisation, including the use of filters, heat, and electricity. A specially interesting exhibit was that by Major E. M. Pilcher, D.S.O., of the present field medical and surgical equipment of our military forces. From the surgical standpoint of to-day it would seem impossible to devise anything more comprehensive or complete, while the ingenuity displayed in economising space could not be surpassed. The Director-General and Lady Gubbins received their guests in the mess quarters, where refreshments were provided, and the band of the Royal Army Medical Corps performed during the evening. The mess is connected with the college by a sort of rialto the constructional arrangements being exceedingly well designed for the bodily comfort as well as the intellectual advancement of the officers of the corps. The Secretary of State was present and several members of the Army Council, to whom the evidences of intellectual alertness and a keen scientific spirit in this branch of military administration must have given great satisfaction.

ESPERANTO AND THE RED CROSS.

A knowledge of Esperanto would facilitate the ambulance work of the Red Cross, for it must often have happened on the field of battle that much suffering has resulted through a lack of understanding between the wounded man and the Red Cross worker. Already in France the military authorities have taken up the subject of Esperanto, and we are informed that there are many Esperantists in the French army. In this country but little attention has been paid to the matter probably because Esperanto has become associated with so many "isms" and cranky ideas, but many people apparently find it a fascinating hobby, and some commercial firms are using it to extend their business relations abroad. With the object of calling attention to the use of Esperanto in Red Cross work M. Privat visited Lord Haldane at the War Office on Feb. 29th. Lord Haldane, in answer to a question as to whether Esperanto could be introduced into the British Army, explained that the conservative nature of the English people would make official recognition very difficult, though he recognised the utility of Esperanto, more especially as it appeared to be spreading in China and Japan.

THE GRAND PRIORY OF THE ORDER OF THE HOSPITAL OF ST. JOHN OF JERUSALEM IN ENGLAND.

The King has sanctioned the following promotions in and appointment to the Order of the Hospital of St. John of Jerusalem in England:—As Knights of Grace: Mr. John Astley Bloxam (from Honorary Associate), Surgeon-General Hayward Reader Whitehead, C.B., and Dr. William Edmund Cant (from Honorary Associate).

Correspondence.

"Audi alteram partem."

EXOPHTHALMIC GOITRE.

To the Editor of THE LANCET.

SIR,—The discussion now proceeding at the Royal Society of Medicine induces me to offer the following suggestions on the pathology of Graves's disease.

Most authorities agree that it is a condition due to excessive absorption of thyroid colloid. The method by which the colloid is absorbed is not yet known. In the case of the normal gland it is often stated that the colloid stored in the lumina of the vesicles directly enters the lymphatic circulation. Intercellular communications have been described uniting the lymphatics and the vesicles, and a colloid-like substance is to be found in the lymph spaces of any thyroid section. The mechanism by which the colloid becomes transferred to the lymphatic spaces is not explained, nor is it known how such a process is normally controlled. It is possible that the colloid accumulates in the vesicles until sufficient pressure is reached to open up the communications with the lymphatics, or to rupture the vesicle and empty its contents into the surrounding connective-tissue spaces, and that the process may be facilitated by contraction of the muscles outside the gland. Such an explanation seems to me utterly inadequate.

Distension of the vesicles does not determine the escape of the colloid. In cases of parenchymatous goitre the vesicles distend enormously without emptying. In cases of acute inflammation the gland becomes depleted of colloid and the small vesicles are sometimes to be found empty when the larger ones are still distended. It is evident, therefore, that there must be some other method of absorption. There is no doubt that it is sometimes possible in cases of goitre with distension of the vesicles to trace a direct connexion between the colloid of the vesicles and the contents of the lymphatic spaces; such a condition, however, would seem to be an occasional accident rather than the normal process of absorption. In sections coagulated lymph closely resembles colloid, and is probably often mistaken for it.

The other explanation is that the colloid is absorbed by a method of diffusion through the walls of the capillaries. The blood-supply of the thyroid vesicles is analogous to that of the lung alveoli. The capillaries are very numerous and are in close apposition with the cells lining the vesicles. It is not uncommon to find capillary loops projecting into the lumina, also, to add to the analogy, the cells lining the vesicles are capable of phagocytic action and sometimes contain blood corpuscles and pigment. If we can assume that some substance, perhaps the internal secretion of another gland acting through the blood-stream, can render colloid

diffusible, we have a method by which the requirements for colloid absorption can be delicately adjusted. It has been suggested by Woolley[1] that the non-diffusible colloid is converted into a diffusible crystalloid.

In Graves's disease the changes in character of the vesicles—viz., the tubular structure, the infolding of the walls, and the high columnar epithelium—can be largely explained by an absence of distension. The glands, however, show indications of hypertrophy in that they are larger and more numerous. The excessive absorption of colloid can be explained by two factors, an increased diffusibility of the colloid and an increased blood-supply. The former is probably the more important.

In a previous paper[2] I pointed out that the changes in the thyroid gland in some cases of primary Graves's disease are focal in character. The distribution, to go back to the analogy of the lungs, is like that of a broncho-pneumonia. The areas affected vary from the size of miliary tubercles to nodules half an inch in diameter and larger. It is impossible to explain such a distribution of the changes by any theory which attributes the condition to alterations in the blood or nervous system, for it is evident that such alterations would affect the whole of the gland tissue or, at any rate, that of one lobe. We are left, therefore, with the explanation that at the centre of each of these foci there is some substance being formed which renders the colloid diffusible and possibly increases the blood-supply locally. Associated changes often found in the centre of these areas are lymphocytic and plasma-cell accumulation. In some cases these are slight, in others marked, and they are similar to the changes of chronic inflammation.

It is suggested that these points indicate an agent as the cause of Graves's disease which can lodge in capillaries and set up changes in the surrounding glands leading to absorption of colloid. The toxic action of such an agent must be slight. It is possibly a micro-organism. Other facts suggesting the same idea are the enlarged glands of the neck, the lymphocytosis, and the well-known fact that many cases of Graves's disease end with myxœdema. I have been endeavouring to test whether the gland in cases of Graves's disease contains a ferment which can render colloid diffusible. The experiments are not yet completed. The advisability of inoculating suitable animals—e.g., monkeys—with Graves's disease thyroid should be considered.

I am, Sir, yours faithfully,

HELEN CHAMBERS, M.D. Lond.,
Clinical Pathologist, Royal Free Hospital.

Feb. 24th, 1912.

To the Editor of THE LANCET.

SIR,—In your excellent abstract of the discussion on Partial Thyroidectomy and Local Anæsthesia (i.e., analgesia) my remarks on the employment of ether in such cases are not given quite correctly. May I extend your abstract?

I said that provided atropine was injected before ether was used, that anæsthetic was suitable for many of the cases. My experience with the open method of etherisation and of intravenous infusion of ether has led me to this conclusion, but as I pointed out the employment of ether by *any* method is open to one objection. The stimulation of the ether gives a spurious appearance of well-being to the patient whose real condition is thus masked. The operator may be misled and induced to undertake a more serious surgical procedure than he originally contemplated. The patient presents such a favourable aspect that even against his better judgment he continues his work, anxious as always to do the utmost for the patient.

When the ether administration is stopped collapse sets in and in some cases the patient cannot withstand the depression and sinks. If chloroform is employed in the way I suggest both the anæsthetist and the surgeon are better able to estimate the degree of operative shock, and the latter can restrict his procedures to the immediate necessities of the case. There should be no post-operative shock due to the anæsthetic unless over-dosage or asphyxial complications have been allowed to complicate the normal course of narcosis.

I am, Sir, yours faithfully,

DUDLEY W. BUXTON.

Mortimer-street, Cavendish-square, W., March 2nd, 1912.

[1] Woolley: Bulletin Johns Hopkins Hospital, February, 1912.
[2] Observations on the Pathology of Innocent Goitre, Brit. Med. Jour., Sept. 25th, 1909.

THE PRESENT POSITION OF SALVARSAN.

To the Editor of THE LANCET.

SIR,—In view of the controversy at present raging as to the benefits to be expected from the arsenical treatment of syphilis one is forced to ask the question, Is it really as efficacious and curative in *the long run* as mercury and should we discard the latter drug as the routine treatment? I have had 29 years' experience of treating syphilis and conscientiously believe from the proved results of my treatment of many scores of cases which have been under my care from start to finish that when mercury is properly and adequately administered it will actually cure syphilis. I am in touch with many patients who were infected and treated years ago. I know them, their wives and children, and in a few instances the grandchildren. They are all free from any clinical signs of the disease and in those cases which have allowed a Wassermann to be done they have given negative results. My observations refer to patients who were infected from 15 to 40 years ago, or even longer. I think that one should be chary in expressing a dogmatic opinion upon the *cure* of a case of syphilis until time has assisted one to that end. When one knows from practical experience what can be done with mercury one does not feel inclined to entirely discard it in favour of another preparation which, regarded from the standpoint of time, cannot be said to have stood as lengthy a "curative" test. That arsenic is of undoubted value in certain cases there can be no question. But is it advisable to use it as a routine treatment, and can it be truthfully said to the patient that one will eradicate and cure syphilis by its use *alone*, or advise that it should be regarded as the premier drug?

In my experience one might almost say that there are two types of syphilis: that as seen in the better-class private patient, in contra-distinction to the disease as met with in hospital cases. I never see in private the gross ravages of the complaint which are so common in institutional clinics. Moreover, in the private cases after, certainly, six weeks' treatment it would be difficult for anyone to assure himself that the patient had got or had ever had syphilis, and if they will only follow out instructions they usually never have any further sign of the trouble. The hospital case, owing to loss of time in attending, which usually means loss of work and wages, is too frequently content to stop treatment with the disappearance of symptoms and does not seek further advice until a relapse compels it to do so. Their syphilis simmers within them. Mercury has received much unmerited blame, partly from the way it has been tendered and accepted. One meets with cases who complain that they have been under Mr. So-and-so's care for two years and are not yet well! Cross-examination reveals the fact that they may have visited the surgeon in question twice or thrice. They certainly have not accepted the proposed treatment or obeyed as regards alcoholic moderation. Consequently, they blame the surgeon and the drug. Again, I have had cases which were treated as syphilitic with mercury and no beneficial result ensued—for this reason, they were tubercle.

Certain cases of syphilis react magically to arsenic, whilst others do not respond satisfactorily. The same may be said of mercury. That arsenic does clear up certain specific lesions with remarkable rapidity is common knowledge. But mercury will do ditto. Hospital practice is one thing and private practice another. The better class, educated patient is apt to ask awkward questions and to want some guarantee as to the effect and results of proposed arsenical treatment. One of the usual questions is, Is it quite safe, no risk, danger, or ill after-effects? Well, I take it that such a question requires a "qualified" answer. The next is, Can you assure me that the effect of the injection will be a permanent cure and that the disease will not break out again? Of course, one must answer that query according to one's experience *and conscience*. We know but little about the propagation or multiplication of the spirochæte within the human body, whether it does so, for certain, by fission or sporulation. Certain microphotographs would lead one to presume fission, others sporulation. However much we know about the effect of arsenic or mercury on the mature spirochæte, I do not think we can speak otherwise than theoretically as to their action upon the presumed embryo, the subsequent maturation of which is conceivably the explanation of a "relapse." It has been suggested

that one should give one or two intravenous injections of arsenic so as to clear off the existing spirochætæ and then to follow up with a more or less prolonged mercurial *régime*. But if mercury is really necessary to effect a cure, why not start with it and continue with it to the final medication of the case, and not subject the patient to even the small percentage of risk which would seem to attend the intravenous injection of arsenic for what seems to me to be a transient and somewhat problematical benefit?

I have no hesitation in saying that mercury when adequately and judiciously administered cures syphilis. I would think twice before making such a dogmatic statement in regard to arsenic. It would now appear that aural symptoms are not uncommonly met with during the early stages of syphilis, or rather since arsenic commenced to displace mercury in the treatment of the disease. I would like to apologise to the many students to whom I have taught the rudiments of syphilis for not having mentioned this seemingly common symptom, for the simple reason that I was unaware that it occurred.

I am, Sir, yours faithfully,

March 4th, 1912. CAMPBELL WILLIAMS.

THE SIGNIFICANCE OF THE SYMPTOMS IN CASES OF DUODENAL ULCER.

To the Editor of THE LANCET.

SIR,—I desire to point out that the explanation put forward by Mr. C. Mansell Moullin in THE LANCET of March 2nd of the group of symptoms which he associates with duodenal ulcer is really no explanation at all, and incidentally to protest against the tone of his references to the views held by physicians on this subject. He says: "It is not consistent with scientific work to assume that a thing does not exist because it has not yet been seen," but it is at least as unscientific to assume that a thing does exist until it has been seen. His contribution to the problem is that the symptoms hunger-pain, pyloric spasm, hæmorrhages, and hyperchlorhydria are caused by an intensely hyperæmic and hyperæsthetic state of the mucous membrane, and in illustration of this he actually cites the case of the interior of the stomach of Alexis St. Martin.

The description to which he refers was given by Beaumont as follows: "The inner surface of the stomach showed extensive erythematous livid patches, from the surface of which exuded small drops of grumous blood, large and numerous aphthous ulcers, the whole covered with thick mucus"; but if I am not misrepresenting Mr. Mansell Moullin in supposing that this is the condition to which he refers the symptoms just related, it is noteworthy that Beaumont expressly states that St. Martin suffered no pain and had a good appetite, so that in the one case to which Mr. Mansell Moullin appeals in which the alleged condition was present there were no such symptoms as those for which it is now given as the suggested explanation.

I am not one of those who regard hyperchlorhydria as a satisfactory explanation of hunger-pain, but I protest against Mr. Mansell Moullin's language where he suggests that it is used by physicians as "a long word which hides our ignorance from our patients," followed by the remark that "the days of the early Victorian physician have not gone by yet," although I confess I do not understand what he means by that, except by using the words "early Victorian" in the contemptuous sense in which we hear this qualification applied to dress and furniture of that period which does not happen to satisfy the modern taste.

I suffered from hunger-pain for almost the whole of the first half of my life; it had no relation to "cold" or catching cold, I never had "jaundice," I never suffered from "septic poisoning," I certainly had it in childhood and up to the age of 35 or 40. It was distinctly brought on by fatigue and by excitement; for example, in my early manhood I always had a bad attack after making a speech; it was relieved by alcohol, a circumstance that I discovered on one occasion, but having a horror of such a remedy I never repeated it; I could always relieve it by a small dose of morphia; it was also relieved by a large meal, but not by a small one; in fact, small quantities of food seemed often to make it worse. I was undoubtedly neurasthenic and often suffered from overwork, and to this alone I attribute the symptom. I call it gastralgia for want of a better name, and I think it is possible that Soupault was right in attributing the actual mechanism to a spasm of the pylorus, but I have no doubt of its essentially nervous origin, and I have treated many cases successfully on the principles suggested by my own condition.

As one who has welcomed the assistance of surgeons and has fully admitted the great advance in the treatment of stomach diseases which has followed from that assistance, I regret that any surgeon should allow himself to adopt such an arrogant attitude towards his medical colleagues as is displayed by Mr. Mansell Moullin.

I am, Sir, yours faithfully,

Birmingham, March 4th, 1912. ROBERT SAUNDBY.

OPERATION FOR PHLEBITIS WITH THROMBOSIS.

To the Editor of THE LANCET.

SIR,—I have read with interest Mr. Skene Keith's communication in THE LANCET of Feb. 3rd *re* the excision of thrombi in cases of phlebitis of the superficial veins of the lower extremities. I have had several cases where this operation has been done with excellent results and greatly to the gratification of the patients. All that is necessary is to make a skin incision over the inflamed and thrombosed segment of vein, tie above first and then below the thrombus, and dissect out the intervening diseased part. This can be done *cito, tuto, et jucunde* under local anæsthesia, saving much time, relieving pain, and preventing all risk of embolism.

In "Clinical Memoranda" (Baillière, 1909) I have written the following paragraph:—

> The treatment of phlebitis and thrombosis of the veins of the lower extremities by the "masterly inactivity" of rest in bed, and local applications, is not only intensely irksome to the patient, but is fraught with the danger of sudden death from pulmonary embolism. All danger is averted by, and a speedy recovery follows, the surgical treatment by excision of the affected veins at the earliest opportunity. Moderate inflammation is no bar to operation.

I am, Sir, yours faithfully,

A. T. BRAND, M.D., C.M.

Driffield, East Yorks, Feb. 27th, 1912.

THE BEARING OF SIR DAVID SEMPLE'S TETANUS RESEARCHES ON SURGERY.

To the Editor of THE LANCET.

SIR,—I have lately been discussing with a number of surgeons Sir David Semple's researches on Tetanus,[1] and have been rather surprised to find that they do not consider them to have any practical bearing on surgery. They do not think that he has sufficiently proved his case to cause us to consider the matter from a practical point of view. If any of these men had been unfortunate enough to have had a case of tetanus ensuing on a surgical operation, as I have had myself on two occasions (hernia), or after a hypodermic administration of remedies, perhaps they would be more disposed to consider the matter. To my mind Sir David Semple has proved his case. It is a far-reaching case; I regard it as one of the most important papers of modern times in its bearing on surgery, especially in India, where tetanus is very prevalent. (In all that follows I am not referring to tetanus following mill injuries and such accidents.)

A few years ago there was considerable correspondence in the British medical press *re* tetanus following surgical operations, especially hernia. There was no definite conclusion arrived at as to the causation, but there was a very definite impression that some cases at least could not be explained by direct infection of the wound (through ligature or so forth). I am personally satisfied that Sir David Semple's paper, though not written directly to bear on surgery, demonstrates the proximal cause of tetanus following surgical operations where infection from direct sources can be excluded.

I have seen two cases of tetanus myself follow hernia operations; the same ligatures, the same lotions, &c., and technique were used for these cases as were used on the same day in several other major operations, including another hernia without tetanus following, and the same

[1] See Scientific Memoirs of the Government of India, No. 43 THE LANCET, June 10th, 1911, p. 1589.

has been used from year to year by me without seeing a case of tetanus following in anything else. Several other men whom I know have had the same experience. I also know of two cases of tetanus following ligature of piles by two other careful men. I know of a recent case of tetanus following the strangulation of a nævus on the face with a ligature by a careful man, and I also know of tetanus in a hysterectomy case in the British Isles by a very careful and experienced operator, where there seemed absolutely no possibility of direct infection. The fact that many men have never seen a case of tetanus follow a surgical operation or the subcutaneous administration of quinine, and that it is very far from often following either, is no argument that it does not follow. We can never tell when it may follow. One case is quite enough; is too many if it can be avoided. I once came across a brilliant young surgeon who was unfortunate enough to have had one such case, and was struck by the fact that the idea of it had ruined his nerve, not unlikely for life. There are enough cases of tetanus recorded, and crowds of cases unrecorded, following surgical operations to justify us in seriously considering its proximate causes.

As far as I can judge from my own personal experience and from the experience of others, both recorded and unrecorded, I believe that tetanus follows on operation for hernia very much more frequently than on any other. Up to the present time tetanus following operation has been put to the charge of the surgeon. The implication has been that he introduced the tetanus through suture, lotions, dressings, instruments, sponges, or from his own hands or those of his assistants—not a very comforting reflection for the surgeon. Why should this tetanus occur in spite of the utmost care on the part of the surgeon? I believe that the reason is explained by Sir David Semple's paper. An anaerobic area has been left—the *sine quâ non* for the development of tetanus from tetanus spores. Sir David Semple has shown that the spores of tetanus are frequently present in the human intestine. He has shown that when tetanus spores are injected into a given area of a guinea-pig and quinine injected into a distant area of the same guinea-pig, tetanus bacilli are to be found in the anaerobic slough produced by the quinine and nowhere else, and that a control guinea-pig which has similarly received an equal number of spores, but has not received any quinine, is not affected by tetanus.[2] How do the spores reach the anaerobic area in this case? I can only understand it by some of them travelling through the blood circuit and eventually becoming stranded in the area of dead anaerobic tissue, where they develop into toxin-producing tetanus bacilli. In the case of hernia the intestine, which may contain tetanus spores, has lain stationary in the hernial sac. May tetanus spores not migrate into that sac? The time-honoured operations for hernia imply a ligature of the sac, and excision of a portion of it distal to the ligature which leaves an anaerobic hernial stump. This may have in it migrated tetanus spores, or tetanus spores may be brought to it by the blood circuit. Since reading Sir David Semple's paper I have modified my treatment of the sac so as to avoid leaving an anaerobic stump. I draw down the sac, catch it as high up as possible with an intestinal forceps, cut it off below the forceps, fix a catgut suture at one end of the sac behind the forceps, and run a glover's suture from the fixed point through the sac and over the forceps, not tightening it until it is all inserted. I then open the forceps with the loose suture over them and insert a stout long probe between the blades and withdraw the forceps. With the assistance of the probe we can with a dissecting forceps draw the sutures tight, drawing out the probe as we go along. With the probe we put the stitches on the stretch, and hence we can find them easily to tighten them. I now return the stitched-up opening, and dispose of the opening in the abdominal wall in the usual way. This procedure is simple; it is as effective as any of the anaerobic stump methods, and it is an attempt to render tetanus after hernia as rare as it is after other surgical operations.

A ligatured pile is an anaerobic stump in the vicinity of tetanus spores. How are we to avoid tetanus in this case? Cut off the piles and stitch up the wound, or do a Whitehead's operation, or if we decide to ligature, then give the patient a dose of tetanus antitoxin. I have never had a case following piles, but I have only once ligatured a pile. It is not to be assumed that the policy which I advocate is a policy leading to laxity in our technique. A recent writer in the *Indian Medical Gazette* seemed to lament that the establishment of Sir David Semple's case would lead to this result. We have to deal with quite enough other germs to cause us to be as careful in our technique as if tetanus did not exist.

The records of my hospital show that tetanus frequently follows on mill injuries, often to all appearance injuries above suspicion. There are here on an average 20 to 30 such cases in the year. For over two years we have administered a dose of tetanus antitoxin to every such case on admission to hospital. There has been one case of tetanus developed in this hospital during these two years in such cases. That case came in nine days after the injury, and my assistant had used his judgment and considered antitoxin unnecessary, and hence did not use it. I add this paragraph to show the importance of the use of tetanus antitoxin as a preventive in such cases. As a curative agent, when symptoms of tetanus have developed, I have found it absolutely useless.—I am, Sir, yours faithfully,

HENRY SMITH, V.H.S.,
Amritsur, India, Feb. 15th, 1912. Lieutenant-Colonel, I.M.S.

[2] A growth of tetanus bacilli can be obtained by making anaerobic cultivation from the tissues at the seat of injection of the spores in both cases, and there is a growth of tetanus bacilli at the seat of injection of quinine in the quinine case.

THE COLOUR SENSE IN RELATION TO THE EMOTIONS.

To the Editor of THE LANCET.

SIR,—The effect upon the pulse-beat of a slight emotion may be illustrated from the examination of a candidate for admission to the railway service of New South Wales. The degree of emotion varies with the type of applicant. In one man there is great anxiety to obtain a position, in another comparative indifference to the result. One man is stable, another is neurotic. The degree of appeal in a railway fettler under examination for permanent employment in the railway service varies less than in any other class. This man belongs to a rapidly disappearing class, a large majority of whom were born and reared in the country districts by poor hard-working parents. They are as a rule big muscular healthy men of stable type, in many ways childlike, and more than usually honest. A neurotic railway fettler is rare. A casual observer would regard him as being mentally dull, but a true valuation is that within its limited orbit of observation and experience the mind is sound in judgment.

The appeal to a colour-blind fettler is direct to the mind, his face shows no indication of emotional response. This is very marked during his selection of the wools. When spoken to his voice is monotonous in tone, and still more so when attempting to name the colours in the lantern, when he frequently hesitates and pauses before answering. On the other hand, a fettler with a good colour sense never hesitates or pauses when he is naming the colours in the lantern; in his case there is no evidence that he requires assistance from the mind. During the examination by the wools the fettler with a normal colour sense frequently shows a slight degree of excitement, his hand may shake, and when examined physically there is frequently an increase in his pulse beat. This condition is transient and may disappear before the examination is finished. When the mind of a fettler realises that he has a defect which unfits him for the service he looks depressed, but if he is a colour-blind person there has been none of the preliminary excitement frequently seen in a person with a good colour sense. Under these conditions the depression appears to persist longer in a colour-blind person than in one with a keen colour sense, and to be more sombre and uniform in its mood.

One type of candidate drawn generally from the city is not satisfactory to deal with from the standard of emotional appeals. A number are neurotic, a class I endeavour to exclude from the running lines of the railway service. A dilated pupil, tremulous hand, rapid pulse, &c., frequently indicate the habits of a degenerate. A mind with experience will endeavour to exclude such persons.

I am, Sir, yours faithfully,

GEORGE HENRY TAYLOR,
Railway Medical Officer, New South Wales.
Sydney, Jan. 2nd, 1912.

THE INTESTINAL FLORA.

To the Editor of THE LANCET.

SIR,—Under the above title Dr. A. Distaso gives in your issue of Feb. 24th what he describes as a "brief summary of the results of my researches, the details of which will appear soon *in extenso*." I have been much interested of late years in the subject of the possible causation of some kinds of mental disorder, or of phases of such, through the absorption into the circulation of toxic material from the intestinal contents. I am therefore looking forward with interest to the detailed account of his researches which Dr. Distaso foreshadows. He will probably give in this the evidence for certain statements which appear in the summary just published. The inference from this observation is that he has as yet given no evidence for them; and this is precisely what I desire to affirm. I would call the attention of your readers, and of Dr. Distaso, to the following weighty statements which he makes without, in my judgment, adducing any evidence:—

> The flora of the normal adult ..... is certainly harmful, and, far from defending the organism against infection, it may be said to help it (*sic*).
>
> In the colon indol and other bodies belonging to the heterocyclic and aromatic series are elaborated and absorbed. These bodies, when absorbed, severely tax the functions of the body and therefore of the liver. This fact may throw some light on the etiology of diseases of the liver. [What "fact" is referred to?]
>
> Not only is there intoxication by the products of bacterial growth, but the disappearance of the bacteria indicates a process of autolysis, the products of which when absorbed cannot fail to be harmful.
>
> Constipation and the resulting intoxication are caused by the intestinal flora. [It is apparently taken for granted that all chemical changes in the intestinal contents which result in the production of toxin are due to bacteria.]
>
> Doubtless the products of the intestinal bacteria, by increasing secretions inhibiting the submucous plexuses, give rise to stasis.

I am, Sir, yours faithfully,

EDWIN GOODALL.

City of Cardiff Mental Hospital, Feb. 27th, 1912.

ELECTRIC METALLIC COLLOIDS AND THEIR THERAPEUTICAL APPLICATIONS.

To the Editor of THE LANCET.

SIR,—My attention has just been called to a communication in your issue of Feb. 3rd, over the signature of Mr. C. E. A. MacLeod, bearing on my article on the electric colloids of Jan. 13th.

Nothing was farther from my intention than to call in question the efficacy of the "collosols," and if I did not refer to them by name this was due to the fact that, as the writer himself admits, their introduction into therapeutics is so recent that sufficient time has not elapsed for it to have been possible to subject them to adequate clinical trial. The employment of colloids in therapeutics is by no means a new thing, for it is many years since the attention of the profession was first called thereto, and electrargol, with which most of my personal observations were made, has been tried on such an extensive scale that each one of its indications is established by a large number of published reports.

Then, too, as far as I can gather from the somewhat scanty references given by Mr. MacLeod, the "collosols" do not appear to have been employed for the same purposes as the electric colloids. As a matter of fact, the writer of the letter in question only mentions a certain number of local applications, and he barely touches the constitutional applications which have conquered for electrargol a place in contemporaneous therapeutics (pneumonia, broncho-pneumonia, influenza, suppurative infections, cholera, puerperal fever, eruptive fevers, &c.).

With regard to stability, I do not wish to call in question that of the "collosols," but this does not impugn the fact that the stability of the electric colloids has been practically demonstrated many years since. I mention this merely to show that in therapeutics each preparation must stand on its own merits, and must establish its own indications for use. The electric colloids have rendered great service to a large number of practitioners other than myself, but I feel justified in stating that the results obtained are their individual attributes, and in the absence of specific confirmation cannot safely be assumed to be possessed by other varieties of colloids. I am, Sir, yours faithfully,

Paris, Feb. 28th, 1912. B. G. DUHAMEL, M.D.

THE TREATMENT OF TUBERCULOSIS AND THE SANATORIUM QUESTION.

To the Editor of THE LANCET.

SIR,—It is a thousand pities that "F.R.C.P." should stir up strife in the medical profession by his remarks as to the constitution of the advisory committee on tuberculosis. Although one regrets the absence of certain names, every member of this committee is well known and distinguished for work done (and well done) in this department of preventive medicine; and the inclusion of a few more specialists or general practitioners would not have added appreciably to the strength of the committee.

From the remarks made by "F.R.C.P." on sanatoriums one would imagine that they were opposed to dispensaries instead of supplementing and completing their work. Even supposing that every case can be cured by tuberculin at a dispensary (which most authorities on tuberculin treatment would not admit) we still have to deal with the (mostly hygienic) causes leading to the tuberculous illness, which cannot often be done in working-class households without at least some training in a sanatorium. Example is always more powerful than precept, and the habits of a lifetime are more easily changed when the value of the change is demonstrated at a sanatorium. Moreover, no man in his senses would treat a febrile consumptive with tuberculin as an outpatient or in a working-class home if better conditions were available. It is the febrile consumptive who has to be treated as a rule, and no arrangements are adequate which leave this fact out of consideration.

Further, recovery from pulmonary tuberculous illness, *however treated*, is conditional; if habits and conditions of life are unsatisfactory relapse or reinfection usually takes place sooner or later. Not every tuberculous person needs treatment. Many such go through life without tuberculous illness; but if a tuberculous person has more than a very limited quiescent lesion, if the bodily health is in any way affected by the tuberculous focus, and if his habits or conditions of life are unsatisfactory, he is in danger of a breakdown and requires treatment, directed not only against the tubercle as such, but against all other contributory causes. We need open-air schools, training in domestic hygiene, better housing, early diagnosis based upon physical examination in addition to the tuberculin test, systematic treatment by hygienic means as well as by tuberculin and other remedies, and adequate measures for after-care in the shape of hygienic homes, day and night camps, and the like. For such a programme we need the open-air school, the dispensary, the sanatorium, hospital, or home, the health colony or camp; and we need them all. I am, Sir, yours faithfully,

Farnham, March 2nd, 1912. F. R. WALTERS.

CYSTITIS AND URINARY ANTISEPTICS.

To the Editor of THE LANCET.

SIR,—I have been much interested in the two exceedingly able and full articles on "Cystitis" by Dr. David Newman which have appeared in your recent issues. There are, however, certain small points with reference to the action of urinary antiseptics in the second paper on treatment, which are so entirely at variance with the conclusions that I have formed on the matter that I cannot forbear criticism. I have been doing experimental work on this subject for some time (the results of much of which will be found in the *Bio-Chemical Journal*, Vol. V., Nos. 6 and 7, and in the most recent Transactions of the Section of Pharmacology of the Royal Society of Medicine), and this is my excuse for discussing a subject where Dr. Newman's clinical experience is so incomparably greater than mine. Dr. Newman states, in referring to the giving of urotropine and helmitol in cases of mild B. coli infections, that "in cases where the urine is acid, as in B. coli infections, formalin is liberated from these preparations and creates irritation, but if the urine be rendered neutral or alkaline by potash or lithia salts this difficulty is overcome." These words appear to me to imply that Dr. Newman considers that the liberation of formaldehyde by acid urine from urotropine is in the nature of an incident, not desirable in itself, and which it may be desirable to prevent. As a matter of fact, there is, I think,

not the slightest doubt that these drugs act slowly by the liberation of formaldehyde and are not in themselves antiseptic. This liberation, as Dr. Newman says, only takes place in an acid medium, and, in consequence, to render the urine alkaline is to render urotropine or helmitol of no effect, and they may just as well not be given. Further on, under the heading "Chronic Cystitis," the statement is made: "When the urine is acid, alkalies and alkaline salts are indicated." This is a generalisation of the statement, so often made, that in B. coli infections the urine should be rendered alkaline, because alkaline urine inhibits organisms of this class. This inhibitory power exists, but it is comparatively slight and is negligible compared with the very great antiseptic power against B. coli of an acid urine *plus* urotropine, so that I am decidedly of opinion that in these infections the aim should be to increase the urinary acidity as much as can be tolerated by the patient giving urotropine in conjunction; and, in the few cases in which I have been able to apply this principle, the results have borne it out. In conclusion, I should like to say how pleased I have been to read Dr. Newman's praise of boric acid given by the mouth as a urinary antiseptic, since I have found that in laboratory experiments, at any rate, it is quite efficient, and is, indeed, the only efficient drug in alkaline urine, while its use as a urinary antiseptic at all is by no means generally recognised.

I am, Sir, yours faithfully,

ANSON JORDAN, M.D., F.R.C.S.

Cambridge, March 5th, 1912.

ANCIENT EGYPTIAN SPECIALISTS.

To the Editor of THE LANCET.

SIR,—In an interesting annotation in this week's LANCET entitled "The Story of Ancient Medicine revealed by Greek Inscriptions," you say quite rightly: "The life-history of the ancients can no longer be adequately written by confining research to the classic authors." I am not sure, however, that even these writers have been completely exhausted. Take, for instance, the side-light which Herodotus, the father of history, throws casually on the above subject in his history of the Persian war: ἡ δε ἰητρικὴ κατὰ τάδε σφι δέδασται· μιῆς νούσου ἕκαστος ἰητρός ἐστι καὶ οὐ πλεόνων. πάντα δ' ἰητρῶν ἐστι πλέα· οἱ μὲν γάρ ὀφθαλμῶν ἰητροὶ κατεστέασι, οἱ δὲ κεφαλῆς, οἱ δὲ ὀδόντων, οἱ δὲ τών κατὰ νηδύν, οἱ δὲ τῶν ἀφανέων νούσων (B, 84).

I particularly appreciate those experts τῶν ἀφανέων νούσων. I wonder what diagnoses they made!

I am, Sir, yours faithfully,

Hove, March 2nd, 1912. W. AINSLIE HOLLIS.

MEDICAL MEN AND CERTIFICATES: A TEST CASE.

To the Editor of THE LANCET.

SIR,—A test case which I recently took into the petty sessions at Petersfield, and won, may prove of interest to the medical profession. A child of poor parents was under my care for some months and was unfit to attend school. The education authority demanded a medical certificate. Now I maintain that such certificates have a certain value, and therefore either the authority or the parents must pay for them. But one cannot ask the parents to pay, at any rate in these poor agricultural districts. So I always refuse a certificate unless the authority will pay a fee, and have steadily done so for the nine years I have been in practice. Of course, I originally ascertained that legally the authority had not the power to insist on a certificate; and for nine years they have not attempted to prosecute in these circumstances. This time, however, they did. I had persuaded the parents to let me see the case through at my own expense. I instructed a solicitor, Mr. Percy Burley, of Petersfield, and gave evidence myself, and the education authority had no case at all, although the magistrates could not see their way to grant any costs. The attendance officer who prosecuted owned that he was told by his superiors at Winchester to go right through with the matter because they knew it was practically a test case. I carried it through as a question of principle. We medical men, in the country at any rate, are expected to write certificates for school boards, juries, &c., without fee, and often without the barest thanks.

I am, Sir, yours faithfully,

East Meon, Hants, March 2nd, 1912. EDWARD T. JONES.

COMPULSORY NECROPSIES.

To the Editor of THE LANCET.

SIR,—The time is rapidly coming when no practitioner should be allowed to certify a "cause of death" not verified by post-mortem examination. The Insurance Act will spend millions on the prevention of untimely death—but we really do not know what people die of. I am an ordinary practitioner; I find I have signed in my time about 1200 certificates of "cause of death," yet not in a dozen cases was there a necropsy, and I may have been mistaken 90 per cent. of the times.

Now the Registrar-General's returns of the "causes of death" are simply made up of my cases and the similar cases of other practitioners possibly more ignorant than myself. Of what scientific value can they be?

I am, Sir, yours faithfully,

J. C. MCWALTER, M.A., LL.B., D.P.H.

Dublin, March 4th, 1912.

THE WORK OF A MEDICAL MISSIONARY IN CHINA.

(FROM A CORRESPONDENT.)

AT the request of the special correspondent of THE LANCET in China I am permitted to give a very rough sketch of the work of a single medical missionary from the professional point of view only. It is the rule of the Church Missionary Society to station at least two medical missionaries at each station; unfortunately, the supply does not keep pace with the demand, and during the last six years, to which the following brief notes apply, I have been alone professionally with but few exceptions. In this statement I do not refer to those Chinese assistants who are able to do some parts of the manifold variety of duties connected with the carrying on of a hospital of some 60 beds, annually treating some 600 in-patients and 11,000 out-patients, male and female.

Nature of Work.

In this connexion I would deprecate the idea that statistics convey a real idea of the quality of the work done; they may become a source of real danger to medical missionaries, and the public who support this sort of work are to some extent responsible when they compare one set of figures with another, not knowing the circumstances under which work is done. For example, one man (with great self-control) confined his first few years in the work to the surgery of circumcisions, sebaceous cysts, and the like; the result was an infinitesimal death-rate and the object at which he aimed, the confidence of the Chinese. Another to my intimate knowledge has never refused to operate upon any case brought to him with any hope of cure; and many a sigh of private professional relief has he breathed when even this "fighting chance" has been refused; but the death-rates of the two surgeons should not be compared.

Considering this small hospital at Ningpo as a type of many, the class of work done will show to friends at home the importance of having an all-round training and the faculty of adaptability. One has to try to combine the offices of surgeon and physician, general practitioner and consultant, pathologist and bacteriologist, X ray expert and general mechanician when apparatus breaks down, general superintendent and ofttimes nurse, architect, and builder; and added to these usually the duty falls to one of trying to raise the money with which to carry on the work of helping the helpless.

Many a practitioner at home struggling against competition may well envy the medical missionary with his sphere of work. In these few remarks I shall confine myself as far as possible to the surgical aspects of our mission work, and I trust that no one will misunderstand when the other side of our Divine commission, "to preach the good news and heal the sick," is passed over in this article.

During the past six years, then, approximately there have been 3400 in-patients and 59,000 out-patients. Operations under general anæsthesia more than 1100. Minor operations under cocaine, eucaine, &c., eye operations more than 1400.

Malignant Disease (52 Cases).

Of these 52 cases, 42 were confirmed by microscopic sections; 28 were epiblastic in origin and 24 mesoblastic; 28 were in males, 24 in females. Three were fatal whilst in the wards, in each case put down to shock of operation—(*a*) sarcoma of the kidney, female, aged 46; weight, 6½ lb.; (*b*) fibro-sarcoma of the uterus, female, aged 39; weight, 20 lb.; (*c*) osteo-sarcoma of the rib, male, aged 51; weight, 8 lb.

Malignant disease in our practice means that the patient has gone the round of the native doctors, each of whom has probably guaranteed a cure for varying sums of money, and in addition probably the local deities have been called upon to assist—again for a monetary consideration to the priests. Finally, when ulceration or glandular infection has set in, the foreign doctor is consulted.

In this connexion I might mention that there is one particular shrine near Ningpo to which patients are taken, and so far as I have gathered from the Chinese its chief claim for distinction lies in the fact that several hundred years ago a celebrated physician lived there who took more liquor than was good for him, and in that condition he fell into a pond and was drowned. Hence the sanctity and healing virtue of the shrine.

Our oldest case was 84, with squamous-celled epithelioma of cheek, and the youngest 7, with mixed-celled sarcoma of lower jaw. Like others at home, we have experienced the pleasure of seeing an inoperable, clinically and microscopically, malignant tumour disappear. The patient was a middle-aged woman, and the whole of the lower half of the abdomen was occupied by a solid tumour, which on opening the peritoneal cavity was found to have invaded almost every organ in the neighbourhood, and even the abdominal wall could be seen to be infiltrated by the growth. The actual original focus I could not settle, but it seemed to spring from the left uterine appendages. I sutured the abdominal wall, and explained that the tumour could not be removed, and that there was no hope of recovery. Sections of the growth invading the abdominal wall were made, and were thought to be endotheliomatous. From the day of operation improvement set in, and all the classical symptoms pointing to presence of malignant disease disappeared. When seen nine months later only a slight thickening in the left iliac fossa was palpable, and five years later she was still quite well.

One of my early cases of malignant disease (*not* included in statistics) was a cat, aged 17, the faithful friend of a clerical colleague. After removing a typical carcinomatous breast recurrence followed, and I was impelled to destroy it. My Chinese assistants could not understand our desire to save the life of a beast. Since, then, however, we have been consulted in the matter of both dogs and cows!

Amputations (125).

These are, unfortunately, common. When foreign fashions, such as railway travelling, come in these will be immensely increased. Utter carelessness is the feature of those in the local cotton mills; no factory precautions are enforced—they have not yet been thought necessary. One man was brought to us with an arm almost severed, and not any attempt at first aid had been given; he died before we could do anything, having been bleeding probably quite an hour. Total number of amputations, 125. Of these, 1 through hip-joint, 11 through the thigh, and more than 40 through different parts of the leg or foot. Amputations of the upper extremity, 11.

Several times *double* amputations were performed, in no case fatal. In one case of double gangrene in a woman with advanced cardiac and renal disease, and a history of lingering agony with battalions of blue-bottle larvæ occupying every position in the gangrenous limbs, we felt that there might be some slight hope in amputation if the anæsthetic were possible. We have had no experience of spinal analgesia, and so, after injecting 1 c.c. of Burroughs, Wellcome, and Co.'s pituitary gland extract, we amputated both legs through the knee-joint; including anæsthetising, operating, and bandaging we spent just 20 minutes, my Chinese colleague completing his work about a minute before I did. However, his flaps in the end continued to discharge serous fluid long after mine had healed. In this case I used the opportunity of a control amputation by my Chinese colleague (under the usual precautions of a thorough hand cleansing) and deliberately omitted to wash *my* hands. I immersed them for ten minutes in biniodide of mercury in rectified spirit 1 in 1000. The woman made a good recovery, and the occasionally marvellous effect of pituitary gland injections in combating shock was shown by the fact that the pulse was far better after than before the double amputation under chloroform—our routine anæsthetic.

Of cases urgently needing amputation quite as many patients refuse as consent to undergo an operation' probably more; the reason alleged is that in the spirit world the absence of a limb is a terrible calamity. It is for a similar reason that to be decapitated is reckoned by Chinese a far more severe punishment than all others, but even this may be got over (like most things in China) for an expenditure of money. In the neighbourhood of Ningpo a powerful and rich man some hundreds of years ago displeased the Emperor, was beheaded, and was buried; but the relatives made some *ten* huge graves, killing off thousands of stonemasons to preserve the secret as to which of the ten was the one occupied by the unfortunate man without a head, the reason being that (it is said) a false head of pure gold was fixed up, which would certainly deceive everyone in the spirit world, just as surely as gold works wonders in this present age.

Bone Operations (197).

Excisions of hip joint 3, elbow 5, shoulder 2, maxillary articulation 2. Necrosis of bone is one of the commonest surgical complaints in this part of China; the lower end of the femur very common.

Hæmorrhoids, Fistula in Ano, &c. (127).

Clamp and cautery the routine treatment, though occasionally Whitehead's operation, especially useful in cases of prolapse of rectum of many years' standing, such as would seldom be seen at home. We use the "locking up" of the bowels method, so emphatically condemned by some, but none the less efficacious in our experience; a morphia (½ gr.) suppository is always inserted after operation, and the third day a saline purge is given.

Eye Operations (Iridectomies, 44; Cataracts, 17; Excisions of Eye, 12; Hypopyon, 11).

It is remarkable to note the comparative infrequency of cataract operations as seen in *this* part of China.

Operations for entropion and ectropion average some 40 per annum. The Streatfield-Snellen operation is the one preferred. One feature of excision of the eyeball is absent in similar cases at home; I refer to the public handing over of the eye to the immediate relatives of the patient. So many wild rumours are in constant circulation, that to show the credulous Chinese that we do not make medicine of the eyes of our patients we always return them their property in full view of all, but still, probably, they will credit us with the practice.

Gynæcological.

The less said about this branch of the work the better. We are scarcely ever called in till decomposition of the fœtus is in progress, the old women midwives having done their worst. We do not make a feature of this work, but out of 64 cases it is interesting to note that *only 14 were normal.* There were 6 maternal deaths. There were 11 cases of transverse presentation with either tonic contraction of the uterus or septic decomposition of the contents; of these 1 child only was saved. Decapitation is usually our procedure, but so far from it being easy we have found it extremely difficult, so acute is the flexion of the child and so firm the grip of the uterine muscle. Usually for days after such a case one's fingers have but small power.

There were 4 cases of eclampsia, 3 of placenta prævia, 1 of hydrocephalus, 1 of face and 1 of unreduced occipito-posterior presentation. Chinese midwifery as we have met it is awful in its simplicity; it consists usually in letting the patient die if normal delivery is not possible. One case treated in our wards was that of a woman from whose uterus we removed the remains of an "aftercoming head" 38 days after the remainder of the body had been wrenched away by Chinese midwives; the base had disappeared but the remainder was removed and the patient recovered rapidly.

Glands of Neck, Axilla, &c. (89 Cases).

To get a case before suppuration and periadenitis has set in is not common. Hence the operation usually is one requiring long dissection and deep.

Abdominal Sections (34, with 9 Deaths).

These are rare events in China so far. Before the period in which these occurred, only one, I believe, had been performed in this city of 400,000 inhabitants, and it should be noted that 7 were done during the first three years and 27 during the last three. Refusals of leave to operate are almost daily met. Liver abscesses were 7, 4 amœbic and 3 mixed infections. Spleen abscesses were 2, both staphylococcal.

In these cases I have used siphon-drainage habitually, an interrupted rubber drainage-tube passing into a vessel under the bed containing a measured amount of 1 in 40 carbolic acid lotion. The benefit to both patient and surgeon is enormous; the value of Leonard Rogers's work on this subject is very great. Two features strike me as of importance in this matter: the surgeon knows just how much pus is passing out and when blocking occurs, and the patient is convinced (though in suspicious China) that there was some necessity for the operation after all, seeing the daily siphonage of pus. Of the value of the method towards keeping the cavity in the liver sterile no one should need convincing. Two cases were fatal, both from complications. The largest amount removed was 140 ounces from the right lobe of the only woman patient I have treated for this condition. She was, with one exception only, the most morose and suspicious patient I have met, but six months after operation she came to see me an utterly different woman, physically and mentally and morally.

In these few years the feeling of the Chinese that the abdomen was not meant for the surgeon has been passing away, but probably few surgeons at home can point to a consecutive series of seven advanced ovarian cysts in one year, each refusing to allow operation. The commonest condition I have met is that of fæcal fistulæ, generally the result of strangulated herniæ; occasionally with a traumatic origin, as in one case where a bullet smashed up the last few ribs and ploughed a furrow in the splenic flexure of the colon, leading to a chronic fæcal fistula which showed no tendency to close. The colon was found to have a fair mesentery and was sutured successfully.

A thing which has struck me as unusual is the frequency of chronic intussusception in the adult; whether diet enters into its causation I cannot say. The symptoms sometimes seem to be very slightly marked except in the later stages, and in one case quite recently we watched the tumour migrate successively from the right iliac fossa to the hepatic region and onwards. The case was typical, but the patient refused permission to operate. The same sad features occurred in another more acute case, when the tumour was actually seen to project from the anus; the patient died a few days later. One woman allowed me to do an abdominal section for this condition, and it was of the cæco-colic variety. Reduction was possible and a tumour of the caput cæci was found and removed together with the appendix and portion of the cæcum. She recovered rapidly. The tumour was of the size of half a walnut roughly, and was non-malignant. This patient was very strong-minded, desiring surgical help against the wishes of her relatives.

Ovarian tumours are commonly met, and only three have been removed—two ordinary multiloculars and one dermoid complicated with an abscess in the broad ligament containing gonococci. This last case died from lobar pneumonia on the third day, with no abdominal symptoms. Only three appendix cases have been operated upon out of the three or four met yearly. The comparative rarity in Ningpo seems striking. Two of these three had abscesses and the third was a case of advanced gangrene; the latter died.

One of the most interesting from a bacteriological standpoint was an abdominal abscess caused by a streptothrix of an unknown variety. It probably commenced in the appendix region, and was opened in the left iliac fossa. The case was published at the time in the *China Medical Journal*.

Other Operations.

Miscellaneous operations included three upon the œsophagus in two of which X rays were of great help in localising. A Chinese-made false tooth-plate with one tooth, and numerous jagged edges, was swallowed during sleep by a man. We did a tracheotomy to relieve dyspnœa, and finally cut down on to the œsophagus between the left lobe of the thyroid and the sterno-mastoid and removed it entire. The material of which it was made and the fact that ulceration was present might have made removal by the mouth impossible except by experts. In any case both this and the case of a long needle swallowed in the rice bowl recovered. The third was a lad with an œsophageal fistula about an inch above the clavicular insertion of the sterno-mastoid. Possibly this was congenital in origin, as he had had it as long as he could remember. Milk taken by the mouth flowed out at once. We excised about 1½ inches and ligatured the remaining portion with catgut, and it healed over at once.

One dorsal laminectomy for tubercular disease causing sudden paraplegia in a young man gave great benefit, but only for a few weeks. Incidentally we may mention that the patient ripped off all his dressings the day after operation, and the wound was caused to gape open.

In our work we must not be surprised at meeting strange experiences. One excision of the breast for carcinoma comes to my memory when I actually found the woman expectorating on to the lines of suture, having taken off the dressings. The case healed by first intention, but hardly in consequence of the extra lavage.

Elephantiasis is of very common occurrence amongst the "farm labourers," and in two instances I have done Handley's operation of lymphangioplasty. The effect on the first was marvellous in the diminution of the hypertrophied tissues and the healing of a huge chronic ulcer, but I am bound to say that from this limited experience I am not a believer in its value for elephantoid legs in Chinese coolies. The value of the operation will probably be found when gravity assists rather than hinders the capillary action of the embedded silk threads. Whether the great amount of elephantiasis in this region and the comparative *absence* of filariasis in the general population are related to one another in any way needs to be worked out. In 120 consecutive examinations of night-taken blood from hospital patients (20 c.mm.) the filaria was found in but one, and he came from a place 200 miles to the south of us.

No less than seven cases of congenital absence of the anus were seen, the eldest being five days old. Every single one was a male, and the reason for the sex being so uniform is suggested by the remark of one parent, "If it were not a boy we would not have troubled to bring him." Infanticide of girls is not yet a thing of the past in some parts of China. We saw eight cases of cancrum oris, all fatal, and usually seen when the cheek has been extensively destroyed. The bacteriology is not yet clear. Arguing by analogy from two cases recently seen, the possibility of a spirillar origin with other organisms living symbiotically should be investigated. Vincent's fuso-spirillar symbiosis I have demonstrated in two cases, one of recurring gangrene of the toes, and one a peculiar subacute gangrene of the penis, *not* syphilitic in origin in all probability. Gunshot wounds call for no special mention, but the variety of missiles in shape and material is fairly great. A large portion of our work consists in trying to undo the effects of the surgery of the Chinese; in particular the use of a septic needle habitually plunged into anatomical situations, usually considered dangerous by us from the West, gives us plenty of septic joints, for example. The knee-joint on four occasions was certainly thus infected, and in five others almost certainly so.

There should be a great future before vaccine therapy, for the average Chinaman most certainly believes in the needle. A mere catalogue of one's surgical operations in a small hospital is of slight value in itself, but this account has been written with the hope that, the work of the ordinary medical missionary being of a varied and somewhat important nature from the physical aspect alone, the sympathy of one's professional brethren at home may be possible; and this can only be when they realise the nature of our work, such as these brief notes have aimed at giving.

KING'S COLLEGE HOSPITAL.—At the annual court of the corporation, held on Feb. 29th, Mr. Herbert Haynes Twining was elected treasurer of the hospital in succession to Mr. Charles Awdry.

PLAGUE IN RUSSIA AND THE NEAR EAST.

(FROM THE BRITISH DELEGATE TO THE CONSTANTINOPLE BOARD OF HEALTH.)

Plague in the Kirghiz Steppes.

THE centres of endemic plague in the southern steppes of Russia, Asiatic and European, continue to show considerable activity. The published records of the different outbreaks are incomplete, but from paragraphs appearing in the Russian medical journals and from communications made by the Russian delegate to the Constantinople Board of Health the following facts may be gathered. During the latter portion of the year 1911 plague outbreaks of greater or less extent occurred in various Kirghiz settlements in the governments of Astrakhan, Uralsk, and Semirétchinsk. The area covered by these three governments is a very large one; the latter two are in Asia and the first is in Europe. It is particularly in the steppes of the Astrakhan government that plague has recently been most active; in the other two it has been confined to few and relatively small outbreaks.

In the Semirétchinsk government, which is situated close to the Mongolian frontier and to the north of Kashgar, plague appeared on August 31st (Old Style) in the *urotchishché* (Kirghiz settlement) of Akskoé, in the *volost* of Tcherikof. By Sept. 4th there had been 4 cases, all fatal, of pneumonic plague. A later telegram, from Prjevalsk, dated Sept. 14th, reported 8 fatal cases of the same disease in the above-mentioned *volost*, at a spot near Naryn (in the Prjevalsk district of the Atbashinsk region); it is probable that this was one and the same epidemic. Two more deaths occurred here on Sept. 16th, including that of a mollah who had washed and buried the bodies of some of the earlier victims. By Sept. 20th the epidemic here was declared to be at an end.

In the Uralsk government, situated much more to the west and adjoining the Astrakhan government, 5 deaths from pneumonic plague occurred in the Uletinsk *volost* before August 10th. In the same district, in the "9th *aoul*" (or Turkoman settlement), near Djambent, 8 fatal cases of pneumonic plague were recorded between June 29th and August 8th. In the Tchadyrtinsk *volost* of the same government 8 cases and 3 deaths from plague of the "pneumonic and abdominal forms" occurred before Sept. 10th, followed by 1 death on the 12th and 1 fatal case on the 13th. Another case occurred in another settlement 5 versts away, and the totals by Sept. 16th had reached 10 cases and 6 deaths.

In the Astrakhan government plague was epidemic in the *urotchishché* of Saganai from the end of August to the middle of September; a score or more cases occurred here. On Sept. 21st the disease became epidemic in several other centres. The following table is a summary of the later returns:—

Period.	No. of infected centres.	Cases.	Deaths.
Sept. 21st to Nov. 7th	16	73	63
,, ,, ,, ,, 21st	28	120	102
,, ,, ,, ,, 28th	33	139	119
,, ,, ,, Dec. 19th	38	187	166
,, ,, ,, ,, 26th	43	201	180

The infected centres were situated principally, if not entirely, in the Narynsk, the Kamysh-Samara, and the Primorskais (or maritime) divisions of the Astrakhan steppes. The disease was most active in the Ak-tchagyl settlement (15 versts from the above-named Saganai), and in those of Sartubć, Kudanysh, Djapalatka, and Antan-tchagyl. Elsewhere but few cases or deaths occurred in any single centre. While many of the outbreaks were pneumonic in character, this was not invariably the case.

In the Russian medical journal, the *Vratch*, No. 35, of August 27th last, an article of considerable interest upon plague in the Kirghiz steppes was published by Dr. Koltsof, a member of the medical mission sent by the Russian Government last summer to deal with these outbreaks. The article is mainly confined to an account of the epidemic occurring in the steppes between May 6th and July 19th of last year, when 33 cases and 32 deaths from plague were recorded in 9 centres; but it also contains a summary of the epidemics in the Bukeëf Horde of the Kirghiz steppes of the Astrakhan government during the preceding 12 years. The summary is limited to this particular region of the steppes. It may be held to supplement the list of epidemics given in my article upon "Some Hitherto Unknown Centres of Epidemic Plague in the Kirghiz Steppes," published in THE LANCET of April 24th, 1909. According to Dr. Koltsof's observations, the disease generally, but not always, gives rise to two annual epidemics in the infected centres, one in summer the other in winter. Working backwards from last year, he finds the following outbreaks recorded.

In 1910 the winter epidemic ended on Feb. 22nd, and the summer one began on June 15th. In 1909 there was no summer outbreak; the winter outbreak began at the end of October, and continued until February, 1910. In 1908 there was only a summer epidemic, lasting from July 7th to August 3rd. In 1907 the summer epidemic began on July 26th, the winter one on Oct. 11th. In 1906 the winter outbreak ended on Feb. 28th, and the summer revival of the disease on April 15th. In 1905 occurred the exceptionally severe epidemic known as the "Beketaieff epidemic," in which some thousand persons lost their lives; it began on Oct. 13th and continued until February, 1906. Some minor outbreaks also seem to have occurred in the summer of 1905. In 1904, when plague was prevalent among the Kirghiz and Cossacks in the Uralsk province, it was imported thence to the Bukeëf Horde in December, but caused only a limited outbreak. (It is stated that 415 persons died from the disease in the Uralsk province.) In 1903 there was apparently no plague in the Horde, though it was epidemic elsewhere in the Astrakhan government. In 1902 there was only a summer outbreak, beginning on June 3rd. In 1901 there was no summer epidemic; the winter epidemic of 1900–01 began on Dec. 23rd and is known as the Tekebai-Tubek epidemic. No summer revival of plague occurred in the summers of 1899 or 1900; but in the winter of 1899–1900 there was an epidemic, which began on Nov. 15th. Beyond this date there are said to be no records of plague in the Bukeëf Horde. The article contains observations upon the epidemiological, clinical, and post-mortem characters of plague in these regions, and on the measures taken to suppress the outbreaks.

In another article published in the *Vratch*, No. 52, of Dec. 31st, 1911, M. Shurupof, a veterinary surgeon, records some observations upon the possibility of plague occurring in camels. Attention had already been called to this possibility, and some of the above plague outbreaks in man were said to have been accompanied by a disease in camels. In one of the cases at Saganai the attack was said to have followed the consumption by the patient of the flesh of a camel that had died from that disease, and it was added that Dr. Klodnitski, a bacteriologist, had found the plague bacillus in the camel's tissues. The importance of such an observation, if confirmed, is obvious, and the Government has sent a veterinary specialist to the steppes to make further investigations. (See the *Vratch*, No. 42, of Oct. 15th, p. 1630). M. Shurupof's experiments were carried out in the laboratory in Fort Alexander I. at Cronstadt, as far back as 1902, with the object of obtaining a protective serum from these animals. But although three animals were injected intravenously with relatively enormous quantities of plague cultures, none of them took the disease. It is concluded that these animals are entirely insusceptible to plague. A similar experiment, made on a single camel in the same laboratory in 1898, had led to the same negative result. The writer of the article thinks that the recent observations above referred to made in the Kirghiz steppes must be received with doubt, and that possibly the organism isolated from the dead camel by Dr. Klodnitski and others was the Bacillus bipolaris plurisepticus, and not the plague bacillus.

It should be noted that all dates mentioned in the above paragraphs are according to the Old Style.

Plague in Odessa.

Four cases of plague occurred in Odessa late in September and early in October last (Old Style). None have been reported since.

Plague in Smyrna.

On Sept. 17th a fatal case of plague was seen in Smyrna. The patient was a porter connected with the German post-office in that city. He had arrived from Koniah three weeks before. On Sept. 22nd a second case was seen, in another

employee of the same post-office. In neither case was the source of infection known.

Plague in Mersina.

A single case of plague occurred in Mersina on Nov. 5th. The patient was a *kavass*, aged 24; he died on the 8th. Here also the origin of the infection could not be traced.

Plague in Jeddah.

The annual revival of plague in Jeddah appears to have begun on Jan. 13th, when a single case was seen in a native servant. A second case followed on the 15th. No fresh case was seen until the 31st, when 3 deaths were reported, followed by a fresh case on Feb. 2nd. No case has been reported since. Yanbo and El Wej have both remained free from the disease.

Constantinople, Feb. 12th.

BIRMINGHAM.

(FROM OUR OWN CORRESPONDENT.)

The Health of Birmingham.

THE health committee in reporting upon the health statistics for 1911 points out the difficulty of comparison owing to the extension of boundaries. The committee, therefore, deals with the figures relating to the city as constituted prior to Nov. 9th. The death-rate for the year was 16·8 per 1000. In the three previous years it was 14·8, 16·6, and 16·9. The higher figure last year was due to the excessive rate in the summer months. Although the summer was the hottest on record the diarrhœal mortality was lower than in some previous years. It was 1·37 per 1000, whereas in 1906 it was 1·64, and in 1904 1·83. The special efforts made in recent years to lessen the diarrhœal death-rate and infant mortality have evidently met with some success.

Birmingham and Consumption.

The mortality from tuberculosis shows a substantial decrease when compared with the mortality during the previous ten years, the number of deaths being 1490, as compared with the average for ten years of 1771. At Salterley Grange, where early cases only are treated, there was arrest of the disease in almost all the 116 patients discharged. Much good has also been done with the more advanced cases admitted at Yardley-road Sanatorium, where patients are taken for six weeks' educational treatment. Tuberculin is administered to these patients by the intensive method, and the treatment is continued afterwards in a special dispensary for as long as necessary. The sanatorium accommodates 60 patients, and it frequently happens that everyone is receiving tuberculin. About 300 inoculations a week are given in connexion with the sanatorium and dispensary, and the Birmingham system of giving a short period of sanatorium treatment, combined with tuberculin, merits attention from the authorities concerned with the administration of the money set apart for the treatment of consumption under the Insurance Act.

A New Obstetrical and Gynæcological Society.

For some months there has been an effort to form an Obstetrical and Gynæcological Society for the Midland and Western Counties. It has been strongly felt that a society should be formed on lines similar to those already existing in London, Glasgow, Edinburgh, and the North of England. A meeting was held on Feb. 19th which was largely attended not only by local specialists but by delegates from Bristol, Cardiff, Lincoln, and Woodhall Spa, and a society was formed with Professor Edward Malins as president.

The Children's Hospital.

The annual report shows that 15,612 patients were treated during 1911, as compared with 15,261 in 1910. The average cost per person maintained in the hospital was 4*s.* 2*d.* per week, as compared with 3*s.* 11*d.* in 1910. The year had been occupied with the development of the plans for the new hospital. The committee had at call for building and furnishing about £35,000, but it was anticipated that a further £15,000 would be required.

The University of Birmingham.

The annual report presented at the annual meeting of governors on Feb. 28th shows that 1017 students attended the University last session, of which number 633 were matriculated students. The number of matriculated medical students was 85, the largest number since 1904, when it reached 92. The total number of medical students matriculated and not matriculated was 200, of whom 45 were women. The chief item of medical interest in the report concerns the new regulations for clinical teaching. The council has been negotiating with the Board of Education with a view to obtaining grants for medical instruction. In order to take advantage of this new source of income it was necessary to constitute a University clinical board to take over the work previously carried on by the Birmingham Clinical Board and to appoint as members of the staff of the University the whole of the teachers engaged in clinical teaching. In addition the Board of Education required that to ensure permanence of clinical teaching the hospitals should undertake to continue to provide facilities, subject to six years' notice being given at any time they considered it desirable to discontinue the admission of University students to the wards of the hospitals. The committees of the General and Dental Hospitals have accordingly passed resolutions in this direction. In the case of the Queen's Hospital a special Act of Parliament imposes upon the hospital the duty of providing clinical instruction.

Association of Public Vaccinators of England and Wales.

The annual meeting of this association was held in the Midland Hotel on March 1st. Mr. A. H. Martin, of Evesham, was elected president, and Dr. Arthur Drury, of Halifax, gave an interesting address. In the evening the annual dinner was held and was largely attended, not only by the members but by several local members of the profession who had been invited as guests. There was an interesting toast list, "The Association" being proposed by the President and responded to by Dr. A. E. Cope, who eloquently pleaded for a greater recognition of Jenner's services as the founder of preventive medicine. Dr. Drury proposed "The Guests of the Association," and referred to the great loss the association had sustained by the death of Dr. F. T. Bond, of Gloucester. Professor Robert Saundby, the President of the British Medical Association, responded. He described his own attitude towards the Insurance Act, originally stated in his presidential address in July, and from which he had not wavered. He regretted that a majority of the Council had differed from him, and failed to realise the strong feeling shown by the mass of the medical profession in the country. Dr. G. A. Wilkes proposed "The Public Health and Poor-law," and Dr. J. Robertson, medical officer of health of Birmingham, responded. Interest was given to the meeting by the exhibition of two letters of Jenner and an original diploma of membership of the Jennerian Society, which were in the possession of Dr. Drury.

March 5th.

LIVERPOOL.

(FROM OUR OWN CORRESPONDENT.)

Formal Opening of the New St. Paul's Eye Hospital.

ON Feb. 27th the new St. Paul's Eye Hospital was formally opened by the Earl of Derby in the presence of a large and influential gathering. Lord Derby, in declaring the hospital open, said there was a special feature of the hospital which he wished to commend—namely, the bringing of the mother and the newly born infant straight into the hospital, in order that the infant could be treated before the disease (ophthalmia neonatorum) had got a hold upon it. By that means they would be able to check the disease, which nine times out of ten, if not treated, would land the child not into a hospital of the kind, but into a blind asylum or some similar institution. Mr. Sydney Stephenson (London), in moving a vote of thanks to Lord Derby for presiding, made feeling reference to the late Mr. George Edward Walker, remarking that the opening of that hospital was the crowning point of a career devoted to humanity. Its founder was one who believed that the greatest care should be given to children, recognising, as he did, that the hope of the future was the child. In that hospital they had accomplished a scheme for the treatment of ophthalmia neonatorum. In this, as in other respects, Liverpool had led the way, and it had not only attracted interest in this country but on the Continent and

in America. They had a scheme there for the prevention of blindness which would surpass the wit of man to exceed. The truth was that a philanthropist's dream had been converted into a sound, salutary, and substantial success. Dr. Arthur N. Walker, in seconding, mentioned that his father had always cherished the ambition of having established in Liverpool a hospital such as they now possessed. One of the greatest benefits of that building was the accommodation provided for children. They could take in cases at the beginning and stop disease. It was a happy omen, he thought, for the hospital that in the past year they had treated more cases than ever before of ophthalmia in infants, and for the first time not one case in Liverpool had resulted in blindness. Lord Derby was presented with a gold key the head of which was formed after the shape of the Maltese cross, and which was supported on a prettily chased acanthus leaf cluster. In the centre panel were the arms of the Earl of Derby. Amongst the ladies present, probably the most interested spectator was Mrs. George E. Walker, the widow of the late founder of the hospital.

Sir Benjamin Johnson on the Medical Aspects of the Insurance Act.

At the annual meeting of the Everton Liberal Association, held last week at the club premises, an interesting speech was delivered by Sir Benjamin Johnson, the leader of the Liberal party in Liverpool. Referring to the Insurance Act, Sir Benjamin Johnson said that having once agreed to the doctrine of compulsory insurance—which all parties had done apparently without a qualm—it was childish to quibble as to the consequences. A great experimental measure such as the Insurance Act was bound to have defects and weaknesses which experience alone could remedy. Mr. Lloyd George had told them that the Act would be worked independently of the doctors. He, for one, felt that an Insurance Act unattended by medical benefits would be shorn of its real value as a great measure for the promotion of national health. He did not think that Mr. Lloyd George was altogether to blame for the trouble connected with the doctor's remuneration. Contract practice had been almost universal in the medical profession for generations, but there was no doubt that the bulk of the profession had been preparing, prior to the introduction of the Act, to put it on a better basis, and the advent of the Insurance Act had precipitated the revolt. It was of enormous importance in the fight against sickness and disease to have the willing and thorough coöperation of the doctors, and the 4*s.* 6*d.* capitation fee was, in his judgment, inadequate to secure that end. The Government had declared that they were willing, on proof being shown that the amount fixed by the Act was inadequate, to reconsider the terms; and he trusted that as a result of negotiations between the British Medical Association and the Insurance Commissioners a satisfactory compromise might be reached. Failing such a settlement he believed the Act would be a comparative failure, instead of a regenerative force making for the building up of a healthier and stronger nation.

Banquet to Sir William Lever.

Sir William Lever, the chairman of the Liverpool School of Tropical Medicine, and Lady Lever were entertained to dinner at the Adelphi Hotel on Feb. 29th by the staff of the school on their return from a visit to South Africa.

March 5th.

SCOTLAND.

(FROM OUR OWN CORRESPONDENTS.)

Edinburgh Hospital for Women and Children and the Hospice.

AT the annual meeting of the Edinburgh Hospital and Dispensary for Women and Children and the Hospice held in Edinburgh on Feb. 29th, Lady Kinross presiding, the report of the executive committee made especial reference to the opening of the new wing of the hospital by Her Majesty the Queen in July, 1911. The amalgamation of the two institutions was now completed, the Hospice being entirely reserved for maternity cases. Since the amalgamation there had, however, been a falling off in subscriptions for the two institutions, and in consequence one of the wards in the hospital, for patients paying at the rate of 5*s.* weekly, had had to be closed. In the report of the treasurer this falling off was stated in several cases to have been the result of the increased taxation in the country. The medical report referred to the necessity for a children's ward in the hospital as well as for the reopening of the second 5*s.* ward, and drew attention to the work done at the infant consultation and milk depôt in the High-street. Since the opening of the new wing at the hospital there had been a gratifying increase of work, especially on the surgical side. The adoption of the reports was moved by Mr. G. A. Berry, President of the Royal College of Surgeons of Edinburgh. A tribute was paid to the memory of the late Dr. Sophia Jex-Blake, founder of the hospital.

Presentation to Dr. John Fraser.

On Feb. 27th a gathering of ladies and gentlemen took place in the hall of the Royal College of Physicians of Edinburgh, when a presentation was made to Dr. John Fraser, who lately retired from the position of H.M. Commissioner in Lunacy for Scotland. The presentation took the form of a three-quarter length portrait of Dr. Fraser by Mr. Fiddes Watt, A.R.S.A. The chair was occupied by the Master of Polwarth, chairman of the Board of Lunacy, and among those present were Dr. Byrom Bramwell, President of the Royal College of Physicians; Sir Thomas and Lady Clouston; Mr. Addison-Smith; Dr. Urquhart; Dr. Campbell; Dr. Turnbull, Dr. John Macpherson, Dr. Hamilton Marr, and Mr. John Cowan, W.S., H.M. Commissioners for Scotland; Dr. Charles Macpherson, Deputy Commissioner; Dr. G. M. Robertson, superintendent, Royal Edinburgh Asylum; Mr. T. W. L. Spence; Dr. Carlyle Johnstone, Dr. James Ritchie, and Dr. Carmichael. The chairman spoke of his own good fortune in having had during the whole of his tenure of the chairmanship of the Board of Lunacy Dr. Fraser as his colleague. He referred to the advances that had taken place in lunacy work during that time, and gave an appreciative tribute to the kindly disposition of Dr. Fraser, which, he said, must have had a great influence on all concerned with the care of the insane in Scotland. Sir Thomas Clouston, in making the presentation, referred to Dr. Fraser's career as a student and later as a graduate, and spoke of the presentation which was being made by some 200 of Dr. Fraser's friends as representing friendship and comradeship in every part of the world. Dr. Fraser, in reply, expressed his pride and gratitude at the honour done him, and his deep regret that his connexion with lunacy administration, and with Scottish administration generally, had now drawn to a close.

March 5th.

IRELAND.

(FROM OUR OWN CORRESPONDENTS.)

Royal National Hospital for Consumption.

THE report presented at the annual meeting of the Royal National Hospital for Consumption, which was held last week in the hall of the Royal College of Physicians, stated that 436 cases had been treated during the year. Of these, 339 were discharged and 90 remained in hospital on Dec. 31st last; seven patients died. The board reiterated its intention of keeping the benefits of the hospital as a curative institution for incipient and early cases of the disease. The hospital had received £3000 of Lord Iveagh's gift to the King, and the money would be used for the provision of recreation rooms. The chairman of the meeting, Major Wellesley, said that the board knew nothing of the reported suggestion to erect a hospital for advanced cases in the hospital grounds, which, he said, were quite unsuitable for such a purpose. During the year a system of graduated labour on the prescription of the medical officer had been introduced, with the purpose of preparing the patient on leaving the hospital to resume his ordinary work. Tuberculin was administered more extensively than formerly. A dental surgeon has been appointed to visit the hospital periodically. The medical report classified the results of treatment as follows: Very much improved, 4·3 per cent.; much improved, 23·1 per cent.; improved, 21·1 per cent.; stationary, 17·6 per cent.; worse, 9·4 per cent.; died, 1·6 per cent.; remaining in hospital, 20·6 per cent.

Dinner of the Dublin University Biological Association.

The annual dinner of the Dublin University Biological Association was held on March 2nd at the Gresham Hotel, Mr. Arthur Ball, the President, being in the chair. It was well attended by present and past members. Among the guests were Dr. Traill, Provost of Trinity College, Professor Culverwell, Professor T. H. Wilson, and Mr. W. Kennedy.

Convalescent Home, Stillorgan.

At the annual meeting of the Stillorgan Convalescent Home, held on March 4th, it was stated that the home last year received 1348 patients. An annexe containing 20 additional beds had been added. The home, which is situated a few miles out of Dublin, receives patients from the various Dublin hospitals.

The Belfast Maternity Hospital.

At the annual meeting on Feb. 27th it was reported that during the year 567 patients were treated and 382 children born. There were 8 maternal and 25 children's deaths. There were also 556 extern cases, with 1 death, so that in all 1123 patients (extern and intern) were treated, with 9 deaths, representing a death-rate of 0·8 per cent. There were also 360 extern gynæcological cases. The one unsatisfactory feature in the report was the slight falling-off in subscriptions which, though only £10, was the first decrease for many years.

Health of Belfast: High Death-rate.

In the report presented to the city corporation of Belfast on March 1st for the period between Jan. 14th and Feb. 17th the total death-rate was actually 30·8, being 12·9 higher than in the preceding month, and 14·1 higher than in 1911. This extraordinarily high mortality was due to deaths from chest affections, which gave a rate of 14·9, or about 9·4 in excess of the normal. Further, the zymotic death-rate, 2·5, was abnormally high, the excess being due to whooping-cough, the deaths from which were 70 as compared with 19 in the previous month, and 3 in the corresponding month of 1911. Pneumonia was responsible for 237 deaths, and chest affections for 226. The following table shows the mortality from pneumonia, diarrhœa, whooping-cough, and measles in Belfast during the past five years:—

Year.	Pneumonia.	Diarrhœa.	Whooping Cough.	Measles.
1907	696	212	64	201
1908	753	260	137	186
1909	705	244	213	10
1910	622	241	259	504
1911	468	290	67	2
	3244	1247	740	903

The National Insurance Act.

In various parts of Ireland considerable objection is being made to insurance lectures, in some places in consequence of objection to the Act, in others to the lecturers' previous political records. The Londonderry No. 1 rural council, on March 2nd, ordered simply to be marked as "read" a letter from the National Insurance Commissioners asking for the use of the council's offices for an explanation lecture.

Extraordinary Demand for Income-tax.

At a meeting of the Coleraine board of guardians on March 4th, a communication was received from the surveyor of taxes, Belfast, demanding from them income-tax on their balance in bank. The guardians desired their clerk to inform the surveyor that they declined to pay, inasmuch as they had no money except what was collected from the rates.

Rain-fall in February.

During the month of February rain fell on 18 days to the amount of 3·24 inches, which, added to the January fall, brings this year's total rain-fall up to 6·56 inches in the north of Ireland.

March 5th.

UNIVERSITY OF BRISTOL.—At a meeting of the Council held on March 1st Mr. Ernest W. Hey Groves, F.R.C.S., was appointed Lecturer in Surgery to dental students.—The thanks of the Council were given to the Bristol Royal Hospital for Sick Children and Women and the Victoria University of Manchester for gifts of valuable specimens to the pathological museum.

PARIS.

(FROM OUR OWN CORRESPONDENT.)

The Reform of Medical Studies.

A TENDENCY towards reform in medical studies has prevailed for many months at the Faculty of Medicine of Paris, and, indeed, throughout France. It is directed towards both the medical curriculum and the different kinds of examination for appointments. The last part of this subject has not as yet been definitely settled, for the changes introduced in 1909 have satisfied no one, and the Minister of Public Instruction wishes to take advantage of the coming into force of the new decree concerning medical studies to effect a serious reform in the matter of appointments. To this end he has called on the Association of Members of the Teaching Bodies of the Faculties of Medicine to furnish a plan. Professors Roger, Pierre Delbet, and Weiss have been called on to report on the methods of appointment, while the legal status of the *agrégés* is being studied by Dr. Carnot and Dr. Jeanbrau, who advocate life appointments in preference to a nine years' term. The three professors have each been allotted for consideration one of the three sections—viz., medicine, surgery, and science properly so called—between which the examination for appointments is divided. Professor Roger, for medicine, advocates a common entrance examination lasting three-quarters of an hour, the submission of qualifications, and the examination in six special subjects—viz., medicine, dermatology, neurology, hygiene and legal medicine, pathological anatomy, and experimental and comparative pathology. The specialties in surgery will be gynæcology, surgery of infants, and genito-urinary diseases, but Professor Selbet thinks that these special subjects should be of a practical rather than a scientific nature. He also ascribes great importance to practical tests, which he would have strongly developed. Differing from his colleagues and even the general opinion, he would not hesitate also to exact from the candidates tests of memory. In his opinion a clinical teacher ought to be able to improvise a lesson on any subject that may present itself. Professor Weiss would divide the section of sciences into anatomy and histology, natural history, physiology, physics and chemistry, and pharmacology.

On the other hand, the Superior Commission met on Feb. 23rd, under the presidency of M. Liard, vice rector of the Academy of Paris, to examine the report of Professor Courmont, of Lyons, on the reform of medical examinations, and passed some important resolutions. It decided to include on the board of clinical examiners at the final examination physicians, surgeons, and accoucheurs of the hospitals agreed on by the Faculty as being in charge of the clinical course. The Commission voted, also, that after a certain number of failures at the same examination the student should be precluded from continuing his studies. M. Léon Labbé insisted on the importance of a knowledge of practical anatomy and surgery, now that, thanks to antiseptic and aseptic principles, all practitioners may be called on to perform certain operations. He also supported an amendment, according to which surgical anatomy should become a special subject of examination at the finals. The Superior Commission, after a lengthy discussion, decided on the introduction into one of the yearly examinations of an examination in stomatology. It also sanctioned the introduction of dentistry at the Faculty of Medicine.

National Conference of the "Gouttes de Lait."

The meeting of the medical founders and directors of the "Gouttes de Lait" will take place at Fécamp on May 26th, 27th, and 28th, on the initiative of Dr. Variot, Dr. Brunon, and Dr. Dufour, the organisers of the First International Congress of the Gouttes de Lait. At this conference, to which many promises of attendance have already been secured, the results so far obtained will be reported, and ways and means of rendering still more efficacious the struggle against excessive infant mortality among those brought up by hand will be sought. Infant feeding will be the main subject for consideration at this conference.

Appendicitis and Dysentery.

At the Société de Chirurgie recently M. Ombre made

a communication for M. Le Roy des Barres, on the Relations between Amœbic Dysentery and Appendicitis. The author thinks that when there is an amœbic infection of the appendix there is at the same time amœbic infection of the colon, but the infection of the appendix may be anterior, simultaneous, or posterior to that of the colon. Such cases of appendicitis, according to M. Le Roy des Barres, are purely amœbic, and he relies for proof on amœbic lesions of the appendix, but he by no means proves that secondary nfections play no part; indeed, in a large number of cases they do. The diagnosis between what appertains to the dysenteric typhlitis and what to the appendicitis is very difficult. In the case of light dysentery, with the appendicular signs but little marked, surgical intervention is contra-indicated, and medical treatment should be followed. On the other hand, whenever the crisis is severe or even clearly marked, operation should always be done. Under such circumstances appendicectomy is called for with the formation of a fistula of the cæcum in one or two operations.

The Treatment of Boils.

M. Gallois considers that furunculosis is a purely local disease resulting from repeated inoculations. The treatment, therefore, should be exclusively a matter of dressings. Discarding the use of water and of poultices, the author extols a method which consists of aborting the furuncles, if possible, by the local use of a drop of iodoacetone and applying locally a gauze compress well impregnated with glycerole of starch, to which boric acid or mercury oxycyanide has been added. Over this is put a layer of absorbent cotton without any impermeable covering, the whole being kept in place by a bandage. This dressing should be renewed every day or even twice daily. To cause desiccation it should be dusted with talc powder, to which a little paraffin has been added.

March 4th.

BERLIN.

(FROM OUR OWN CORRESPONDENT.)

The German Committee for the Forthcoming International Medical Congress.

A MEETING of representatives of medical societies, of official medical authorities, and of the medical press was held on Feb. 16th, in Langenbeck House, Berlin, for the purpose of electing a general committee for the International Medical Congress in London. Professor Waldeyer, who was in the chair, stated that 84 universities, medical post-graduate schools, medical societies, and journals were represented, and that many answers had been received from other medical bodies agreeing to send representatives to London. The committee was then elected, the officers being as follows:—President: Professor Waldeyer. Vice-Presidents: Professor Kirchner and Professor Kraus, of Berlin; Professor Döderlein, of Munich; and Professor Marchand, of Leipsic. General secretary: Professor Posner. Assistant secretary: Professor von Hansemann. Treasurer: Dr. Ernst Stangen. The committee will also include Professor Gudden of Munich, Professor Goldscheider and General-Surgeon Dr. Kern, of Berlin, Professor Schwalbe, editor of the *Deutsche Medizinische Wochenschrift*, and Professor Sonnenburg. The meeting agreed that the committee shall be a permanent one, and deal with the organisation of future international congresses in concert with the International Permanent Committee. Professor Sommer, of Giessen, moved that a whole day of the congress should be devoted to the discussion of the question of heredity in connexion with the several branches of medicine. The proposal was favourably received, and was referred to the Executive Committee for further consideration.

Operative Treatment of Tuberculosis of the Bladder.

At a recent meeting of the Medical Society Professor Casper read a paper on a method of relieving urinary troubles in tuberculosis of the bladder. He said that as the majority of cases of tuberculosis of the bladder were caused by tuberculosis of the kidneys; some of them might terminate in recovery after removal of the diseased kidney. In certain cases, however, where the kidney was either inoperable or where the tuberculosis of the bladder was in a too advanced state the tuberculous lesion of the bladder might continue or even increase. Cases attended with intolerable tenesmus and with contraction of the bladder to a capacity of only 20 or 30 cubic centimetres and in which all other therapeutical measures had proved useless were suitable for his operation. He had operated on two cases. One patient was a woman on whom nephrectomy had been performed seven years ago for tuberculosis, the result being that, notwithstanding a slight tuberculosis of the bladder, no pains had been felt for six years, but she subsequently suffered from severe pains and very frequent micturition. The urine was turbid and contained tubercle bacilli. The left kidney proved to be much enlarged and the capacity of the bladder was 30 grammes only. Cystotomy proved useless, the pains not being at all relieved by it. Professor Casper therefore performed nephrostomy by uniting the pelvis of the kidney to the skin, ureterostomy being impossible because of the abnormal situation of the hilus. The pains were relieved, but the secretion of urine through the fistula was very small, and eventually stopped altogether, notwithstanding the employment of irrigation through a drainage-tube. The vesical troubles disappeared, but the patient died on the seventh day after the operation. The second patient was a man 36 years of age on whom nephrectomy had been performed six years ago for tuberculosis of the left kidney. Previously to the operation severe pains had been felt in the bladder, but they were considerably relieved by the operation, so that the patient could work as a locksmith, but six years after the operation his state again became very bad, tenesmus and vesical pains ensuing which resisted all therapeutical measures. The urine was passed every half hour; it was purulent, but did not show tubercle bacilli. The capacity of the bladder had diminished to 80 grammes, and the patient had become greatly emaciated. Catheterism of the right ureter yielded clear urine with a small quantity of leucocytes. The sediment inoculated into animals rendered them tuberculous. Professor Casper performed ureterostomy, uniting the upper end of the divided portion to the skin and thus forming an artificial outlet in order to exclude the bladder. There was an abundant discharge of urine through a catheter kept permanently in the fistula, the result being that the pains completely disappeared the day after the operation. The state of the patient was very good; by irrigation through the catheter the urine soon became clear and had continued to be so. The patient wore a receptacle for holding the urine. His weight increased six kilogrammes. Professor Casper said that this result proved that severe vesical pains might be relieved by excluding the bladder. Ureterostomy was, in his opinion, preferable to nephrostomy, for the latter, although a simpler operation, had eventually an injurious effect on the function of a tuberculous kidney, as shown in the first case above mentioned. Ureterostomy was more difficult from a manipulative point of view, but it did not injure the kidney. It was advisable to implant the ureter into the skin either in the lumbar or the supra-inguinal region. During the first few days a catheter must be left permanently in the ureter. The operation was indicated not only when the remaining kidney was tuberculous but also when it proved healthy, because by cutting off the communication between the bladder and the kidney the danger of an infection from the bladder was diminished. Pyelitis, which might be a sequel to ureterostomy, was less dangerous than tuberculous infection. In the discussion Professor Israel recommended the making of a suprapubic fistula of the bladder instead of a ureteral fistula, because of the danger of pyelitis. Professor Landau said that the method of Professor Casper seemed to be preferable to establishing a fistula of the bladder because of the impossibility of applying an apparatus to receive the urine in fistula of the bladder. Professor Casper replied that, according to his experience, after the formation of a vesical fistula the pain was not only not relieved, but even became more intense.

The Action of Salvarsan in Anthrax.

Professor Bettmann and Dr. Laubenheimer, of Heidelberg, have contributed to the *Deutsche Medizinische Wochenschrift* an article on the Action of Salvarsan in Anthrax. Professor Bettmann stated that in two cases of anthrax attended in his clinic the symptoms disappeared rapidly after the injection of 0·3 gramme of salvarsan into a vein. Dr. Laubenheimer has accordingly made experiments on animals, especially on guinea-pigs and mice, which are very susceptible to the infection of anthrax, and in which the course of the disease

is not identical with that of human anthrax, for in the latter case spontaneous recovery may occur, but in the lower animals a highly virulent infection is always fatal. The result of the experiments was that animals treated by salvarsan not later than 20 minutes after inoculation with anthrax all survived, except one, which died 22 days after the inoculation. All the other animals either remained alive or died from some other cause than anthrax; a few of them died from poisoning by salvarsan. Sometimes the animals were saved by salvarsan when injected with it even six hours after the inoculation with anthrax, and the germs disappeared. When the salvarsan treatment was longer delayed a fatal issue could not be avoided, but the animals died later than those which had not received an injection of salvarsan. Salvarsan acted as a disinfectant by directly destroying the anthrax bacilli and their spores. Sometimes only the development of the germs was hindered, allowing them to increase and cause death after the salvarsan had been eliminated from the organism. In the test-tube salvarsan hindered the development of the germs to a remarkable degree. Animals which had been cured of anthrax by an injection of salvarsan were not rendered immune against a later infection. The experiments showed that salvarsan by destroying the anthrax bacilli might be a valuable remedy against the disease.

March 4th.

NOTES FROM SOUTH AFRICA.

(FROM OUR OWN CORRESPONDENT.)

Medical Legislation.

General Smuts is due to reintroduce the Public Health Bill. Whether it will appear in the form it did last year, when it was laughed out of the House, remains to be seen. As it appeared then its only object was to vest in the Minister of the Interior the powers, duties, and functions of the respective medical officers of health of the four Provinces. General Smuts has announced that he is not prepared to introduce a Bill to consolidate the law relating to the practice of medicine this session, or even to allow a licence granted by the Medical Council of one province to be operative in another. He has, however, at least been induced to promise that the draft Bill will be submitted to the medical profession before it is introduced into the House next year.

Treatment of Lunatics.

The Prisons Bill which was passed last year renders it illegal for any lunatic to be received into a prison hospital if there is any public asylum or hospital in the district. Now this provision is, of course, a most proper one and received the warm support of the medical profession, particularly as an assurance was given by the Government that immediate provision would be made for dealing with lunatics in these districts at the asylums or elsewhere. No such provision has, however, been made, and magistrates appear to be at their wits' ends to know what to do with cases of lunacy pending accommodation being found in the overcrowded asylums. It has become a practice to hire on behalf of the Government empty houses and to place patients therein, as often as not in the charge of policemen. These patients are consequently far worse off than they used to be, for now they are deprived of the conveniences to be had in the gaol hospitals. It is true that the stigma attached to incarceration in the gaol is removed, but as the bulk of the patients are natives the stigma is possibly more imaginary than real. At any rate, the present state of affairs is too horrible to be allowed to remain, and is a disgrace to the administration. Although full publicity has been given to the facts in the lay press it would seem that the increase in the asylum accommodation proposed during the current year will be insufficient to relieve the congestion to any great extent.

Closure of the Sydenham Asylum.

The Sydenham Leper Asylum, situated a few miles outside Bloemfontein, is shortly to be closed, and the inmates and a portion of the staff are to be transferred to the asylum at Pretoria. The unfortunate inmates, the majority of whom are natives, number about 160, and they are drawn almost exclusively from different parts of the Orange Free State. There is likely to be some trouble in carrying out the transfer, as it is almost certain that objections will be raised in Parliament. It will involve a good deal of hardship on the inmates, for hitherto it has been easily possible under the existing arrangements for friends and relatives occasionally to visit them, but in future this will be quite out of the question. Mr. W. C. C. Pakes, the former Government bacteriologist of the Transvaal under the Crown Colony Administration, and for some years past the superintendent of the Sydenham Asylum, is to be retrenched.

Rand Water Shortage.

For some weeks past the position in Johannesburg has been very grave owing to the shortage of water supplied by the Rand Water Board. The fact is that the requirements of the town and mines have increased out of all proportion to the increase in the supply furnished by the Board. On several occasions the municipal reservoirs have been nearly empty, and it would seem to be imperative that steps should be taken to procure water from other sources of supply.

Proposal to Establish a Municipal Dairy at Bloemfontein.

Amongst a number of important questions at present engaging the attention of the Bloemfontein town council is that of the establishment of a municipal dairy. Dr. D. M. Tomory, the municipal medical officer of health, has asked his council to vote £3000 for this purpose, with the object of showing what can be done with a pure milk-supply. The project is meeting with some opposition from dairymen, but it is likely to go through. It is to be hoped that it will, as many of the existing dairies are far from suitable, and the effect will be that these will have to be improved or they will be ousted by the municipal undertaking. This project, if carried out, will be the first of the kind undertaken by a municipality in South Africa. There has been some difficulty in selecting a suitable site, and in order that the milk may be conveniently brought to the cooling chambers of the municipal premises it has been suggested that the dairy should be erected on the commonage to the east of the town.

Plague at Durban.

Three cases of bubonic plague were discovered in Durban during the past month—all terminating fatally. Two of the cases appear to have been employed in the dock area, whilst the third worked in a store outside the town. This is the first outbreak that has occurred in South Africa since 1907. Two of the cases were both working in sheds in which rats had evidently been dying from plague for some months past, whilst the third was connected with an infected store in the town. At first hopes were officially expressed that the infection was confined to the dock area, but an examination of stores in the town quickly revealed the fact that rats were dying of plague in a number of widely separated areas at a considerable distance from the docks. Dr. F. A. Arnold, the acting medical officer of health for the Union, has been in Durban to consult with the Mayor and Dr. P. Murison, the municipal medical officer of health, and as a result of his visit an agreement has been drawn up defining the respective spheres of operations of the Government and municipality. A special plague committee has been appointed, consisting of an equal number of nominees of the Government and the Durban corporation, and this committee has been given full power to deal with all matters relating to the outbreak within the borough and harbour area. Special plague regulations have been promulgated. Fortunately Durban has a well-organised health department which is working under the direction of the plague committee, and energetic measures are being taken to deal with infected premises and to destroy rodents throughout the town. The plague committee has been issuing encouraging bulletins from day to day, but inasmuch as the outbreak has occurred at a time of the year most favourable to the spread of rat plague in this country it would seem hardly probable that the measures which have been instituted will do more than control the outbreak until, at any rate, it has run its course amongst rodents in the area, the same as it apparently has always done in the past whenever it has been permitted to get a hold on any centre in South Africa. The infection is believed to have been introduced from Mauritius, but the vessel which brought the infection is not known with any certainty. Two comments on the situation may fairly be made. Had the Natal health department not been prematurely broken up there appears to be some reason to think that under the *régime* inaugurated by Mr. Ernest Hill, the late health officer of Natal, a stricter

watch would have been kept at the port for disease amongst rats, and that the mortality might have been discovered in time to have confined the outbreak to the dock area; and, secondly, that the special plague committee would not have been necessary, for the organisation to have dealt with the outbreak would have existed in the province, and money would doubtless have been saved the taxpayer. Apart from the operations now being undertaken in Durban, a number of municipalities have awakened to a sense of their responsibilities, and are spending money on destroying rats and rectifying insanitary conditions. Thus, Johannesburg is spending £30,000 on putting the insanitary location hereafter mentioned into a better state.

Small-pox in Johannesburg.

An outbreak of small-pox has broken out in the location of Johannesburg just referred to, which is known as the Malay location. This has caused considerable anxiety to the community, and but for the prompt action of the municipal medical officer of health, Dr. C. Porter, it might easily have assumed serious proportions. The outbreak had been in progress some days before it was discovered, and consequently a considerable number of the inhabitants of the location were contacts, including a number of unvaccinated persons. At the time of writing it would seem to have been successfully confined to the location and to have been practically stamped out therein.

Anthrax on the East Rand.

An extensive outbreak of anthrax amongst cattle has been discovered on the East Rand, which has evidently been in progress for some time. This disease is always specially dangerous in South Africa, as most natives will feed readily on the half-cooked flesh of animals dead from disease. A large number of cattle are officially reported to have died from the disease already, and one adult native. It is probable, however, that there have been other deaths which have not been recorded. The Agricultural Department has taken up the matter and has imposed stringent quarantine over the area. It was, however, uncommonly slow in acting in the first instance.

Feb. 1st.

Obituary.

SIR FRANCIS RICHARD CRUISE, M.D. DUB., F.R.C.P. IREL., M.R.C.S. ENG., D.L.,

PHYSICIAN TO HIS MAJESTY THE KING IN IRELAND; CONSULTING PHYSICIAN TO THE MATER MISERICORDIÆ HOSPITAL; EX-PRESIDENT OF THE ROYAL COLLEGE OF PHYSICIANS OF IRELAND; KNIGHT OF ST. GREGORY.

Sir Francis Cruise died at his residence, 93, Merrion-square, Dublin, on Feb. 26th, in his seventy-eighth year. His death removes one of the most prominent of Dublin physicians, and the Senior Fellow of the Royal College of Physicians, of which he was President from 1884 to 1886. He was born in Dublin on Dec. 3rd, 1834; his father, who was a solicitor in good practice, descended from an ancient Meath family, died when he was only a few weeks old. The son's education did not suffer, however, thanks to the fact that his mother was a wise and cultured woman, who strove successfully to lay the foundations of his character deep in religion and scholarship. He received his early education from the Jesuit Fathers in Belvedere College and Tullabeg, and entered Trinity College, Dublin, in 1852, graduating as B.A. in 1857 and as M.B. in 1858. In the School of Physic in Trinity College he came under the influence of such men as Banks, Apjohn, and Robert William Smith. At the House of Industry Hospitals, where he took his clinical work, he had as teachers Adams, Smith, Banks, Lyons, and Corrigan. He attended lectures also at the Carmichael School, where he did much scientific work in association with Robert McDonnell. His health gave way under the strain of excessive work, but was restored after a trip to America.

In 1861 the Mater Misericordiæ Hospital was opened, with Cruise as junior physician. The rest of his professional life was associated with this institution, in the development of which he took a very important part. At the jubilee celebrations of the hospital last September Cruise was naturally a prominent figure. His early years in medical practice in Dublin were lean enough, his earnings from private patients in his first three years being £7, £11, and £30. At this time he was much occupied with teaching; subsequently, however, he enjoyed for more than a generation one of the best practices in Dublin. Although at first interested in surgery, in his later years Cruise devoted himself entirely to medicine. In 1865 he introduced an "endoscope" for the internal examination of the body cavities, which proved particularly useful for the exploration of the bladder. Considering the only illuminants available at the time, it was a remarkably ingenious application of reflected light. In his own hands and in those of others who accustomed themselves to its use it was of considerable service. It is worth remembering that by the invention of this instrument, the precursor of the modern cystoscope, Cruise was a pioneer in bladder surgery. In the eighties his attention was attracted to hypnotism, and in 1890 he visited Nancy and Paris, observing the work of Liébault, Bernheim, Luys, Voisin, and others. He published his notes of this journey on his return to Dublin in the *Dublin Journal of Medical Science*, May, 1891. So recently as 1907 he wrote an introductory chapter to Dr. Lloyd Tuckey's book on "Treatment by Hypnotism and Suggestion." On other subjects of general medicine he was a prolific writer, and frequently contributed to the medical journals. In his work at the Mater Misericordiæ Hospital he was a careful clinician and a lucid and inspiring teacher. In professional life in Dublin he was held in the highest respect, and he interested himself in all public matters affecting the profession. He had, however, many activities outside his profession. As a citizen he was interested in many charities and philanthropic works. He was also a cultured musician.

In literary pursuits his interest extended widely outside of medicine. His boyhood's devotion to "The Imitation of Christ" matured in adult life, and he visited many foreign libraries and consulted innumerable manuscripts, with the purpose of establishing beyond doubt (which he eventually did) that Thomas à Kempis was veritably the author of this famous book. It is interesting to know that the citizens of Kempen, in Germany, have named one of its streets in his honour, in recognition of his vindication of their famous townsman. Cruise belonged to a type of physician more rare now than formerly. While thoroughly conversant with the best in medicine, he was also a cultured scholar in other fields. In character he was a man of deep religious convictions, of humble mind, and of great personal charm. He married in 1859 Miss Mary Power, and in 1909 they celebrated their golden wedding. By her death a year later an ideally happy union was severed. He leaves a large family, of whom one son is a medical man.

In 1896 Cruise received the honour of knighthood. Ten years later he declined a baronetcy. In 1901 King Edward appointed him his physician-in-ordinary in Ireland. In 1905 Pope Pius X. conferred on him a knighthood of St. Gregory.

RICHARD DILL, M.D. EDIN., L.R.C.S. EDIN.

BY the death of Dr. Richard Dill, which occurred at Birchwood, Burgess Hill, Sussex, on Feb. 24th, a link has been broken in the chain of Brighton's past history. Born in Ireland in 1822, he was the youngest son of the Rev. Richard Dill, of Newtown Limavady, by his marriage with Jane, daughter of Robert Gordon, Carnstrone House, Antrim, who, with her sister and co-heiress, were the sole remaining representatives of the Jacobite house of Gordon of Glenbucket.

Richard Dill took the L.R.C.S. diploma at Edinburgh in 1845, and proceeded to the M.D. degree in the same year. He was a favourite pupil of Sir James Young Simpson, the discoverer of chloroform as an anæsthetic, but declining the great physician's suggestion to start practice in Edinburgh under his auspices he went to China, where he spent several eventful years.

A cousin who held a Government appointment at Hong-Kong decided this visit to China, and Dill travelled in the interior and on the coast, and made a valuable collection of ferns, including some unknown varieties which he handed over to Sir Joseph Hooker at Kew on his return. He also accompanied for about 1000 miles Robert Fortune, the famous explorer and botanist, who was then introducing the tea plant from China into the North-West Provinces of India, and thus laying the foundation of the Indian tea industry.

In these travels Dr. Dill had many adventures, and seized every opportunity of practising his profession under the new and exhilarating conditions. On one occasion when he arrived at a village he found that his medical fame had preceded him, and that a number of people suffering in various ways were waiting for him. Among these was a woman with a central cataract in each eye, whose pupils he dilated with belladonna, so that she was able to see her son for the first time for years, a result which she and her friends proclaimed as a veritable miracle.

He came back to England in 1849 and settled at Brighton, joining his uncle, the late Mr. John Dill, in practice. Mr. John Dill was a very interesting person, who, after beginning life as an officer in the navy of the East India Company, had resigned his commission and studied medicine, re-joining the service as surgeon. Later he began to practise at Brighton in partnership with a Mr. Drummond in Regency-square. With this firm Richard Dill continued in partnership until death left him the only survivor, and for a long generation he enjoyed a very high professional position in Brighton. He did not retire until the end of the nineteenth century, having attained a high reputation as a physician, and having made many fast friends among the leaders of the profession, not only in the British Islands, but upon the continent. He owed his success in practice firstly to a sound judgment, a receptive brain (which up to the last kept him abreast of all the most recent developments of scientific research), and an unusual knowledge of therapeutics; but secondly to the intimate and individual sympathy with his patients as men and women which his temperament enabled him to offer. His personal ideals of the conduct of life were very high, and he carried them uniformly into the practice of his profession; and it is not too much to say that every patient of his was left with an enhanced estimate of our profession, as well as with confidence that his own needs were being anxiously met. He was a man of the deepest religious conviction, who was ready to credit others with the single-mindedness and generosity which marked his own actions. For upwards of 50 years he carried on in Brighton a very active professional life, being also keenly interested in all matters concerning the sanitary advancement of the town. He saw Brighton grow from its Georgian position to what it is to-day.

Retiring from practice some ten years ago, he took up his residence at Burgess Hill, and there celebrated his golden wedding. His wife, a daughter of Sir Charles Wale, K.C.B., survives him, as do two out of his four sons, the elder being Dr. J. F. Gordon Dill, the senior physician to the Royal Sussex County Hospital. Dr. Dill died peacefully in his sleep. His health had been failing for some time, but the actual cause of death was a sharp attack of influenza.

HENRY FITZGIBBON, M.D. DUB., F.R.C.S. IREL.,

CONSULTING SURGEON TO THE ROYAL CITY OF DUBLIN HOSPITAL AND TO MERCER'S HOSPITAL; EX-PRESIDENT OF THE ROYAL COLLEGE OF SURGEONS IN IRELAND.

Mr. Henry Fitzgibbon, one of the best-known Dublin surgeons and a past President of the Royal College of Surgeons in Ireland, died at his residence, 24, Fitzwilliam-place, Dublin, on Feb. 23rd, in his seventy-first year. He was the younger son of the late Gerald Fitzgibbon, Q.C., a Master in Chancery, his elder brother being Lord Justice Fitzgibbon, one of the most distinguished jurists of our time. Mr. Fitzgibbon had been in failing health for some years past and had resigned most of his appointments within the last few months.

Henry Fitzgibbon received his medical education in Trinity College, Dublin, where he graduated as M.B. in 1866. He was for some time in the Poor-law Service, being dispensary doctor, first at Clondalkin, and afterwards at Howth, both in County Dublin. On his election as surgeon to the City of Dublin Hospital he took up surgical practice in that city, and soon came to occupy a high place in the profession. He was elected a Fellow of the Royal College of Surgeons in Ireland in 1881, and was its President in 1888–89. For many years he was chief medical officer to the General Post Office, Dublin, and was also surgeon to the Westmorland Lock Hospital. Perhaps because of his large practice he was not an extensive contributor of papers to the medical journals or societies. It is noteworthy, however, that so long ago as 1887 he wrote on the treatment of ununited fractures by metal screw-taps. Whatever he wrote was clear and cogent, and bore the impress of firm conviction. He was also a careful and successful teacher. He retired from active work at the City of Dublin Hospital some 15 years ago. Dr. Fitzgibbon was, like other members of his family, possessed of a striking individuality, which impressed itself on all who knew him. His independence of mind and courage in expressing his opinions commanded universal respect. By his more intimate friends he was regarded with a very deep affection. He leaves a large family, his eldest son being a member of the medical profession.

THE NATIONAL INSURANCE ACT.

THE BRITISH MEDICAL ASSOCIATION'S LETTER TO THE COMMISSIONERS.

THE newly appointed State Sickness Insurance Committee of the British Medical Association, in accordance with the instructions given by the Representative Body, drew up the following letter last week, and forwarded it to the secretary of the National Health Insurance Joint Committee:—

SIR,—I am instructed to inform you that at the Special Representative Meeting of the British Medical Association, held at the Guildhall, February 20-22, the following resolution was unanimously passed:—

"That this Representative Meeting direct the Council to inform, in plain and unmistakeable language, the Commissioners appointed under the Insurance Act, 1911, that unless the *minimum* demands of the Association be embodied in the regulations to be issued by the Commissioners, in such a manner as shall be effectual and permanent with a view to having the same embodied in an amending Act, it is the intention of the British Medical Association to call upon all its members and upon all other medical practitioners to decline to form panels or undertake any other medical duties which may be assigned to them under the Act, in conformity with the undertaking which has already been signed by over 26,000 medical practitioners."

I am to point out to you that the *minimum* demands of the Association mentioned in the above resolution comprise:—

1. An income limit of £2 a week for those entitled to medical benefit.
2. Free choice of doctor by patient subject to consent of doctor to act.
3. Medical and maternity benefits to be administered by Insurance Committees and not by Friendly Societies. In connexion with the question of the method of administration of medical benefit, the Representative Meeting resolved that all questions of professional discipline should be decided exclusively by a body or bodies of medical practitioners, and that the power of considering all complaints against medical practitioners should be vested in the local Medical Committee with a right of appeal to a Central Medical Board to be appointed for that purpose.
4. The method of remuneration of medical practitioners adopted by each Insurance Committee to be according to the preference of the majority of the medical profession of the district of that Committee.
5. Medical remuneration to be what the profession considers adequate, having due regard to the duties to be performed and other conditions of service.

After careful consideration the Representative Meeting resolved that the policy of the Association be to claim 8*s*. 6*d*. as a *minimum* capitation fee, not including extras and medicine, for members of approved societies, and to claim the recognition of payment per attendance, in which case the fees must be on such a basis as shall be deemed an equivalent by the State Sickness Insurance Committee with recognition of a £2 *maximum* income limit.

6. Adequate medical representation among the Insurance Commissioners, in the Central Advisory Committee, and in the Insurance Committees, and statutory recognition of a local Medical Committee representative of the profession in the district of each Insurance Committee.

On behalf of the British Medical Association I am instructed to lay these important points before you and to inform you that they constitute the irreducible *minimum* demanded by the Association.

Another subject which received the special attention of the Representative Meeting was the question of dispensing. The Association is of opinion that dispensing, as hitherto, should be done or arranged for by the medical practitioner for his own patients should he so desire, payment to be made according to the scale of prices fixed by the Insurance Committee in accordance with the terms of the Act.

I am, &c.

ALFRED COX, Acting Medical Secretary.

British Medical Association, February 29, 1912.

CITY OF LONDON AND EAST LONDON DISPENSARY.—The report and statement of accounts of this institution for the year 1911 has just been issued. The number of attendances again shows an increase over previous years, being 2950 in excess of those for the year 1910. The total was 114 212, of which number 6903 were free. The receipts from subscribing members were £2682 14*s*. 6*d*., being £28 in excess of those for the previous year. The donations and subscriptions amounted to £93 14*s* 6*d*. Subscriptions and donations may be sent to the bankers, Messrs. Barclay and Co., Limited, of 54, Lombard-street, E.C., to any member of the committee, or to the secretary at his offices, 58, Lombard-street, E.C.

Medical News.

Her Majesty the Queen will pay an informal visit of inspection to the Barnato Joel Charity and Cancer Research Institution on Wednesday, March 27th.

LISTER INSTITUTE OF PREVENTIVE MEDICINE.—In the lecture theatre of this institute Dr. William Nicoll will give a series of seven lectures on Helminthology on Tuesdays and Fridays at 5 P.M., commencing on March 19th.

THE Hunterian Society's silver medal awarded annually for the best original essay submitted by a general practitioner has been won by Dr. Arthur Goulston, of Heavitree, Exeter, for his essay on "The Use of Sugar in Heart Disorders."

POOR-LAW MEDICAL OFFICERS' ASSOCIATION OF ENGLAND AND WALES.—At the last council meeting of this association, held at 34, Copthall-avenue, London, E.C., Dr. D. R. Balding presiding, the honorary secretary, Dr. Major Greenwood, reported that an answer had been received from the Local Government Board to the two questions submitted by the council respecting the statistics required in the early part of last November from Poor-law medical officers. The two questions were: 1. Did the Local Government Board consider that under Article 205 of the General Order of 1847, duties such as these were included? 2. In the event of boards of guardians being willing to pay an extra fee for the work would the upper Board sanction it? The answer to (1) was in the affirmative, and with regard to (2), the Board would be ready to sanction extra payment for the work if requested by boards of guardians. It was thought by the council that Poor-law medical officers would gain little benefit from this concession, as few boards of guardians could be got to make the request. The answer of the Chancellor of the Exchequer to their application for a clause in the National Insurance Act to protect Poor-law medical officers of more than 20 years' service from loss that might accrue to them through that measure in respect to their superannuation was considered. The Chancellor suggested that the better course was to communicate in the first instance with the Local Government Board. It was generally considered that this suggestion, as it necessitated an amendment of the Superannuation Act, was an evasion. The honorary secretary submitted the details of a serious breach of the Poor-law Orders which the Winchester guardians had been guilty of, and which had been condoned by the Local Government Board. These guardians had advertised for a medical officer for the Micheldever district, stating that he would only be appointed for three years. Dr. P. E. Todd had been elected on the terms of this advertisement, but he was unaware that it was contrary to the Medical Appointments Order of May, 1857. Article 2 of that Order laid down that where a medical officer resided in his district he should be entitled to be appointed permanently. As Dr. Todd resided in his district he was entitled to a permanent appointment. The Winchester guardians were carrying on a crusade against all permanent appointments, wishing to have their officers entirely in their own hands, and although the Local Government Board had at first refused its sanction to the appointment of Dr. Todd for only three years, it has been induced to withdraw its objection. In reply to a letter the Local Government Board stated that in view of the reasons brought forward by the guardians it had agreed not to offer objection to the appointment. Dr. Major Greenwood, in criticising the reply, said that in a newspaper report of the meeting of the guardians nearly every speaker definitely stated that the reason was that the Board objected to *permanent appointments*. The fact of the advertisement made the matter worse; for it flagrantly contravened the Medical Appointments Order. The council thought that this was a case of considerable gravity. It threatened that security of tenure so long enjoyed by Poor-law medical officers. Again, was the consent of the Local Government Board accidental, or did it indicate a change of policy with regard to permanent appointments? The honorary secretary was instructed to write again to the Local Government Board, asking if the action of the Winchester guardians in this matter was going to be approved generally. It was also resolved to approach the National Poor-law Officers' Association on the subject, and to request the British Medical Association to take action in the matter. A letter was read from a district medical officer of the Gainsborough Union, relating how he had been deprived of his office in order to add his district on to another neighbouring district to induce a medical practitioner to take the two. The Local Govsrnment Board had been appealed to, but, after expostulating, had consented to the guardians' action.

MIDLAND AND WESTERN COUNTIES OBSTETRICAL AND GYNÆCOLOGICAL SOCIETY.—A meeting was held on Feb. 20th at the Grand Hotel, Birmingham, to found the Midland and Western Counties Obstetrical and Gynæcological Society. The chair was occupied by Mr. Christopher Martin. Mr. H. Beckwith Whitehouse read the notice convening the meeting, and Dr. E. Malins then proposed the motion that an Obstetrical and Gynæcological Society, including the Midland, Eastern, and Western Counties of Great Britain, be now formed. Dr. Malins said that a feeling had long existed that the provinces were not adequately represented in these important matters. In the large area over which it was proposed to form a new society there were large towns and a wide district where much activity was displayed in the pursuit of obstetrical and gynæcological knowledge. There were here comprised teaching centres and a number of hospitals where much valuable work was done, and a large amount of treatment carried on without due recognition or opportunity of record. It had been found that much time had been taken up with often inconvenience in journeying to and from London, and outside that great centre there was a mass of material which could not be utilised to the extent deserving of its interest and value. The provinces were overshadowed by the metropolitan societies, in which progress and interchange of opinions were naturally gathered and centralised; hence those outside had not the same proportionate advantages. This want would be supplied by the new society in which it was confidently expected there would be a willing response to the facilities afforded by the mutual coöperation of its members. The motion was seconded by Dr. John T. Hewetson and carried unanimously. Mr. J. Furneaux Jordan proposed that the society be called the "Midland and Western Counties Obstetrical and Gynæcological Society." He thought that the addition of the word "Eastern" would unnecessarily lengthen an already long title, but he hoped the society would not exclude the admission of members practising in the eastern counties. Dr. Beatrice Webb seconded the motion, which was carried unanimously. Mr. E. Tenison Collins (Cardiff), in proposing that the object of the society should be the promotion of the science and art of obstetrics and gynæcology, said that he welcomed the formation of the society, emanating as it did from Birmingham, the original home of English gynæcology. Mr. Furneaux Jordan seconded the motion. Mr. Martin then proposed that the government of the society should be vested in the office bearers, who should be elected from among the members, and should consist of a president, three vice-presidents, a treasurer, general secretary, local secretaries, and a council of not less than six. It was further proposed that the officers and council should be elected annually by ballot. Mr. Beckwith Whitehouse seconded the motion. The election of officers and council for 1912–13 then took place, when the following were unanimously elected:—President: Dr. Malins (Birmingham). Vice-Presidents: Mr. Martin (Birmingham), Dr. Walter C. Swayne (Bristol), and Mr. H. T. Hicks (Derby). Honorary treasurer: Dr. C. E. Purslow (Birmingham). Honorary general secretary: Mr. Beckwith Whitehouse (Birmingham). Honorary local secretaries: Mr. D. C. Rayner (Bristol) and Dr. T. C. Clare (Leicester). Other members of council: Dr. F. L. Harman Brown (Coventry), Mr. Tenison Collins (Cardiff), Dr. Wheelton Hind (Stoke-on-Trent), Dr. William Smith (Nottingham), Dr. Thomas Wilson (Birmingham), and Dr. C. J. Williams (Woodhall Spa). The President then took the chair and proposed that the society should be itinerant, and that arrangements for the meetings should be placed in the hands of the council. This was seconded and carried unanimously. It was further resolved that the

proceedings at each meeting should consist in the exhibition of living cases, specimens, and instruments, and the reading and discussion of "short communications" and papers. The secretary was asked to approach the editorial committee of the *Journal of Obstetrics and Gynæcology of the British Empire* with a view to the publication of the proceedings and papers read before the society. A pathological subcommittee was also formed, to which specimens of unusual interest or complexity may be submitted for report. The following were unanimously elected to serve on this committee for the year 1912-13: Professor R. F. C. Leith, Dr. John T. Hewetson, and Dr. L. G. J. Mackey. The committee has power to coöpt other members. Mr. Martin then moved that the council be empowered to draw up a set of rules and be instructed to submit the same to the next general meeting of the society. The motion was seconded by Dr. Wilson and carried unanimously.

TENURE OF OFFICE OF SANITARY OFFICIALS.—At the last meeting of the executive committee of the Mansion House Council on Health and Housing a report on the tenure of office of sanitary officials in and around London was received, and after consideration the following resolutions were passed:—

This Council are of opinion that it would be in the interests of the public and lead to the better administration of the laws relating to sanitation if the medical officers of health in Greater London who devote the whole of their time to public work, and all sanitary inspectors and inspectors of nuisances in London and Greater London respectively, were, after any necessary period of probation, appointed to their offices without limit of time, and if they were not liable to be removed from their office except by the Local Government Board or by their respective councils with the consent of the Local Government Board.

That this resolution be communicated to the Local Government Board, with the request that they will give the matter their consideration and take such steps as may seem to them suitable to give effect to this recommendation.

THE After-Care Association for Poor Persons Discharged Recovered from Asylums for the Insane held its annual meeting on Feb. 28th, at Queen's Gate Hall, South Kensington, when Lord Claud Hamilton presided. The report and balance-sheet for the year 1911 showed a very satisfactory increase, not only in contributions received, but also in cases successfully helped, these having far exceeded the number dealt with in any previous year. An urgent appeal was made for increased funds to carry on and extend the work of this, the only association of its kind in the United Kingdom.

CHELSEA CLINICAL SOCIETY.—The annual dinner of this society will take place at the Richelieu Hotel, Oxford-street, on Wednesday, March 20th, at 7.45 for 8 o'clock punctually. Professor Einthoven will be present by request. Tickets, price 7*s.* 6*d.*, may be obtained from the senior secretary, Dr. J. F. Halls Dally, 16, Lower Seymour-street, Portman-square, London, W.

GALTON EUGENICS LABORATORY (UNIVERSITY OF LONDON).—A lecture on Tuberculosis: Heredity and Environment, will be delivered by Professor Karl Pearson, F.R.S., in the Galton Eugenics Laboratory, University College, London, on Tuesday, March 12th, at 8.30 P.M.

SAMARITAN FREE HOSPITAL FOR WOMEN.—The annual general meeting of governors of this charity will be held in the board room of the hospital on Tuesday next, March 12th, at 5 P.M.

Parliamentary Intelligence.

NOTES ON CURRENT TOPICS.

National Insurance Lecturers.

IN the House of Commons on Thursday, Feb. 29th, certain aspects of the action of the Insurance Commissioners in appointing lecturers to explain the working of the National Insurance Act were criticised. Mr. H. LAWSON raised one point in the course of the debate which has interest to the medical profession. How, he asked, were those lecturers to deal with the medical benefit. They could not, he pointed out, explain what was contemplated, because the Insurance Commissioners had not come to terms with the medical profession. In his opinion it was doubtful whether they could come to terms. It was a very serious thing that the lecturers should be asked to deal with the claims of the medical men without knowing in what way the question would be met. Mr. MASTERMAN, who replied on behalf of the Government, did not deal at length with the point Mr. LAWSON raised. He merely referred the House to an answer which he gave to Sir PHILIP MAGNUS on Feb. 26th. That answer stated that the lecturers had been given careful instructions to explain the Act as it stood on the statute book, and the alternative attitudes which the Insurance Commissioners were empowered to adopt towards medical benefit.

Asylum Officers' Superannuation Bill.

Sir CHARLES NICHOLSON has introduced a Bill in the House of Commons "to amend the Asylum Officers' Superannuation Act, 1909." It was read a first time. This Bill is "backed" by Colonel LOCKWOOD, Mr. CROOKS, Mr. MILLAR, Mr. HARRIS, and Mr. NANNETTI.

Royal Commission on Sewage Disposal.

A sum of £3807 is proposed in the estimates for 1912-13 for the expenses of the Royal Commission on Sewage Disposal. Seven reports have been made by this commission since it was appointed in 1898. Its members are now investigating the question of the disposal of trade effluents (other than distillery effluents) when not mixed with sewage. Their observations on the effects of discharging effluents of known composition into streams are now nearly complete, and they are considering the data thus obtained in connexion with the question of standards and tests.

Miners' Phthisis.

It is stated in the estimates for temporary Commissions for the year 1912-13 that the special research which will be necessary in connexion with the important branch of the inquiry of the Royal Commission on Mines, dealing with miners' phthisis, may be prolonged. It has therefore been thought desirable to estimate for the whole year.

Royal Commission on University Education in London.

According to a statement made in the estimates for 1912-13 by the secretary of the Royal Commission on University Education in London the Commission has still a considerable amount of evidence to hear upon several different parts of its inquiry. It is not at present possible to say anything definite with regard to its probable duration.

The Health of the Army.

Colonel SEELY, the Under-Secretary of State for War, in his general statement of army policy to the House of Commons on Monday, March 4th, made an encouraging statement on the improved health of the British soldier. "The sobriety of the army," he said, "has increased out of all knowledge. In 1889, 688 men were admitted to hospital suffering from alcoholism. In 1903 the number had sunk to 169. In 1910, the last year for which we have figures, the number was 37. That is a drop from 688 to 37. The admissions to hospital for certain preventable diseases, which have done so much harm to the army in many ways, have been reduced, I am glad to tell the House, in quite an extraordinary degree. During the last seven years they have been reduced by more than half, and the deaths have been reduced to a quarter of what they were seven years ago."

HOUSE OF COMMONS.

WEDNESDAY, FEB. 28TH.

Voluntary Insurers and Medical Benefit.

Sir PHILIP MAGNUS asked the Secretary to the Treasury whether, having regard to the fact that under the National Insurance Act as it stood any person who, having been compulsorily insured for a period of five years, might become and remain a voluntary insurer entitled to medical benefit at such annual rate as might be arranged, be his income what it might, it was proposed, by regulation of the Commissioners or otherwise, to fix any limit of income beyond which such insured person should cease to be entitled to medical benefit at the common rate.—Mr. MASTERMAN replied: I beg to refer the honourable Member to Section 15, Subsection 3, of the Act. An income-limit which may be fixed under that subsection would, of course, apply to the particular class of voluntary contributors to whom he refers.

Vaccination Officers and Exemption Certificates.

Mr. TOUCHE asked the President of the Local Government Board whether he could give any indication, by way of percentage or otherwise, of the approximate reduction in each year since Jan. 1st, 1908, in the remuneration of vaccination officers arising from exemption certificates; and whether he proposed to take any steps to deal broadly and comprehensively with the cases of officers who had suffered serious pecuniary loss, and place their future remuneration on a satisfactory basis.—Mr. BURNS answered: Owing to the variety in the fees paid to vaccination officers in different districts I am not able to indicate the percentage reduction of the remuneration of these officers since 1907, but the number of vaccinations in England and Wales has declined from 696,147 in 1907 to 531,567 in 1910. I am endeavouring to deal with the cases of officers who have suffered serious primary loss.

Vaccination Exemptions.

Mr. STEWART asked the President of the Local Government Board whether he could state the number of exemptions granted against vaccination in 1908, 1909, 1910, and 1911, respectively; and the number of unvaccinated persons in the United Kingdom, as far as could be estimated, at the present moment.—Mr. BURNS answered: The number of exemptions received by vaccination officers in England and Wales was as follows: 1908, 162,799; 1909, 190,689; 1910, 230,947; 1911 (first half), 119,335. There are no data upon which an estimate of the number of unvaccinated persons in the country can be made.

THURSDAY, FEB. 29TH.

Medical Department of Ceylon.

Mr. MACCALLUM SCOTT asked the Secretary of State for the Colonies whether there were any, and, if so, what, appointments in the

Medical Department of the Government of Ceylon which were reserved for Europeans only.—Mr. L. HARCOURT replied: I am not aware that any posts are exclusively reserved for Europeans, though it is considered desirable to have a certain comparatively small number of European officers in the Medical Department.

Mr. MACCALLUM SCOTT: May I take it, then, that there are no individual posts which are exclusively reserved for Europeans?—Mr. HARCOURT: That is my impression.

A Case of Anthrax.

Mr. JOWETT asked the Secretary of State for the Home Department whether he was aware that another death had occurred from anthrax, contracted at the firm of Messrs. Campbell and Harrison, woolcombers, of Shipley, a branch of Woolcombers, Limited, and, if so, what he intended to do in the matter, having regard to the frequent loss of life from this cause at the firm in question.—Mr. MCKENNA replied: I have received full reports of this case. The man was employed in card grinding—a process which is not dealt with in the regulations, and which until recently has not been regarded as presenting specific danger of anthrax. It is evident, however, from the circumstances of this case that measures will be necessary for protecting the workers against any dangerous dust which may be given off during the process, and I am advised that the use of appliances similar to those being now generally installed in the carding-rooms of Lancashire cotton mills should form an effective safeguard. Instructions will be given to the inspector to take up the matter at once with the firm in question.

Mr. C. BATHURST: In view of the steady increase in this fatal disease amongst birds and farm animals and human beings, will the right honourable gentleman direct an inquiry to see what is the best and most effective disinfectant against its spread?—Mr. MCKENNA: I am not sure whether that question ought not really to be addressed to my right honourable friend the President of the Board of Agriculture.

Vaccination Topics.

Mr. LANSBURY asked the President of the Local Government Board whether the action of the Metropolitan Asylums Board, in declining to receive boys recommended by the Southwark board of guardians on board the training ship *Exmouth* unless they had been vaccinated, had his sanction, seeing that this ignored conscientious objection, as recognised by law, and reinstated compulsion; and, if not, whether he would take steps to restore freedom of conscience to persons under the control of the Metropolitan Asylums Board.—Mr. BURNS wrote in reply: I am advised that the Metropolitan Asylums Board have a discretion whether they will admit an unvaccinated boy to the ship.

Mr. COTTON asked the right honourable gentleman whether the lymph used in cases of vaccination in Ireland was taken from calves which had not been slaughtered, while in England the same Board insisted upon lymph being taken from calves which were afterwards slaughtered and a post mortem made with a view to seeing whether such calf or calves were affected with tuberculosis or otherwise.—Mr. BURNS (in a written answer) replied: The Local Government Board in Ireland, on the recommendation of their bacteriologist, have sanctioned the adoption of a system under which all calves used for lymph production at the National Vaccine Institute, Dublin, shall be subjected to the tuberculin test instead of being slaughtered as formerly, and a post-mortem examination held. It is considered that the new system would be less costly and more efficient, and that the tubercular foci that might escape detection at autopsy would be at once revealed on application of the tuberculin test. The Board have arranged that the bacteriologist shall personally supervise the processes and methods of tuberculin testing, and see that they are carefully carried out in the case of every calf the lymph of which is to be used for vaccination purposes. The facts as regards England are correctly stated.

MONDAY, MARCH 4TH.

Anthrax.

Captain MURRAY asked the President of the Board of Agriculture whether, in view of the uncertainty that prevailed on the subject of anthrax, he would consider the advisability of appointing a committee to inquire into anthrax and its causes.—Mr. RUNCIMAN answered: I do not think that the occasion has arisen for the appointment of a Departmental Committee. Careful and continuous investigations are being carried on by the veterinary staff of the Board, and I think that for the present we may be content to await the issue of their investigations and the results of the operation of the anthrax order of 1910, which has been in force for little more than 12 months.

Mr. CHARLES BATHURST asked the right honourable gentleman whether, in view of the recent serious outbreak of anthrax among both human beings and farm animals in this country, and of the opinion generally held by the veterinary profession that the disease was mainly traceable to imported hides and fleeces, he would take steps to secure the thorough disinfection by means of formalin, mercuric chloride, or other searching disinfectant, of such goods either prior to their embarkation abroad or to their debarkation at a British port.—Mr. RUNCIMAN answered: I anticipate that the report of the Departmental Committee on foot and mouth disease will be of considerable assistance to the Board in determining whether the disinfection of imported hides and fleeces is necessary and practicable, and I think it desirable, therefore, to await the issue of that report before taking any action in the matter.

Industrial Poisoning.

Mr. RAMSAY MACDONALD asked the Secretary of State for the Home Department whether he could give the number of cases of industrial poisoning reported in the period 1910 to 1912.—Mr. MCKENNA answered: The cases of industrial poisoning by lead, mercury, arsenic, and anthrax in factories and workshops notified under Section 73 of the Factory Act numbered in 1910, 573, of which 48 were fatal; in 1911, 755, of which 44 were fatal; in January of this year 42, of which 7 were fatal. There have been no cases of phosphorus poisoning since 1909. Cases of industrial poisoning from other causes and in other industries are not required to be notified to the Home Office.

The Inquiry into Patent Medicines.

Mr. LYNCH asked the Secretary of State for the Home Department whether he had decided on the constitution of the Joint Committee to be appointed to inquire into the traffic in patent medicines and allied matters; and whether, in view of the difficulty of disassociating the question of the sale of such drugs from that of the illicit practice of medicine, he would consent to enlarge the scope of inquiry so as to include these matters in the terms of reference.—Mr. MCKENNA said in reply: The answer to the first part of the question is in the negative. As regards the second part, I would refer the honourable member to the answer given to a similar inquiry on Dec. 13th last.

TUESDAY, MARCH 5TH.

Illness at Osborne College.

Mr. HUNT asked the First Lord of the Admiralty whether there were at present at Osborne College two cases of typhoid fever, two of bronchitis, one of pneumonia, and one of diphtheria; whether there were in the College altogether 70 people on the sick-list; and, if so, what steps were being taken to prevent the various diseases from spreading.—Mr. CHURCHILL replied: There were 32 cases of boys under medical treatment at Osborne College on March 3rd, 1912. Of these, one was a case of enteric fever, now convalescing; three cases of pneumonia; one of chicken-pox. The remaining 27 are minor diseases and injuries. There were no cases of diphtheria or bronchitis.

WEDNESDAY, MARCH 6TH.

Housing of London University.

Sir PHILIP MAGNUS asked the Prime Minister whether the Government had made itself responsible for the housing of the University of London throughout its history; whether he was aware that in the Treasury Minute, dated Feb. 16th, 1899, the liability to provide a dignified and suitable home for the University, and also to make such provision as might thereafter be needed for the full extension and development of the University under the statutes and regulations made by the Commissioners appointed by the Act of 1898 was acknowledged; and what steps His Majesty's Government proposed to take in the matter, in view of the present unsatisfactory accommodation for the University as disclosed in the Report of the Royal Commission on University Education in London, issued on Dec. 15th, 1911.—Mr. ASQUITH said, in reply: The Government have as a matter of fact provided accommodation for the London University throughout its history. The Treasury Minute cited by the honourable Member was written before the removal of the old University to South Kensington and refers to the possibility of an arrangement which was actually carried out between the authorities of the Imperial Institute and the Treasury. It must not be construed as admitting liability on the part of His Majesty's Government to provide for all possible requirements of the University in the future. The recent report of the Royal Commission points out that the University must depend to a large extent upon private endowments for its full development. The Government do not think that it would be opportune to take any step in connexion with the present accommodation for the University before the Final Report of the Royal Commission has been issued.

BOOKS, ETC., RECEIVED.

BERGMANN, J. F., Wiesbaden.

Zur J.-K.-Behandlung. Eine kritische Uebersicht der vorliegenden J.-K.-Literatur nebst vergleichend tabellarischer Zusammenstellung der therapeutischen J.-K., Tuberkulin-Heilstätten und klimatischer Heilstätten-Erfolge. Von Sophie Fuchs-Wolfring, Paris, frühere Mitarbeiterin von Dr. Carl Spengler in Davos. Price M 2.40.

BRAUMÜLLER, WILHELM, Wien und Leipzig.

Aerztliche Standespflichten und Standesfragen. Eine historische Studie. Von Dr. I. Fischer, Direktor des Frauenkrankeninstitutes Charité, Wien. Price K.4.80, or M.4.

Vorlesungen über klinische Hæmatologie. Von Dr. Wilhelm Türk, Privatdozent für innere Medizin an der Universität, k.k. Primararzt und Vorstand der II. medizinischen Abteilung am Kaiser-Franz-Josef-Spitale in Wien. Zweite Teil, erste Hälfte. Price K.14.40, or M.12.

ENKE, FERDINAND, Stuttgart.

Statische Gelenkerkrankungen. Von Dr. Georg Preiser, Hamburg. Price M.10.

"JUGEND," VERLAG DER, Lessingstrasse, 1, München.

Der elektrochemische Betrieb der Organismen, die Salzlösung als Elektrogenet und der elektrolytische Kreislauf mit dem Gehirn als Zentrale. Eine Programmschrift für Naturforscher und Aerzte. Von Dr. Georg Hirth. Vierte vermehrte und verbesserte Auflage. Mit einem Anhang: Die Dynamik des organischen Betriebes. Von Med.-Rat. Dr. Franz C. R. Eschle. Price not stated.

KLINKHARDT, DR. WERNER, VERLAG VON, Leipzig.

Die rationelle Ernährungsweise. Praktische Winke über das Essen und den Nutzen oder Schaden der verschiedenden Nahrungsmittel. Von Dr. med. A. Lorand, Karlsbad. Price, paper, M.4; bound, M.5.

Leitfäden der praktischen Medizin. Herausgegeben von Professor Dr. Ph. Bockenheimer, Berlin. Band I. Zahnärztliche Chirurgie. Von Prof. Dr. med. Fritz Williger, Direktor der chirurgischen Abteilung des Königlichen zahnärztlichen Universitäts-Instituts zu Berlin. Zweite vermehrte und verbesserte Auflage. Price, paper, M.4.50; bound, M.5.20.

LEHMANN (J. F.), München.

Grundzüge der Hygiene, unter Berücksichtigung der Gesetzgebung des Deutschen Reichs und Österreichs. Von Dr. W. Prausnitz, O.Ö. Professor der Hygiene, Vorstand des Hygienischen Instituts der Universität und der Staatl. Untersuchungsanstalt für Lebensmittel in Graz. Für Studierende an Universitäten und technischen Hochschulen, Aerzte, Architekten, Ingenieure und Verwaltungsbeamte. Neunte erweiterte und vermehrte Auflage. Bearbeitet von Prof. P. Th. Müller und Prof. W. Prausnitz. Price, paper, M.9; bound, M.10.

MALOINE, A., Paris.

Contributions à l'Étude du Traitement des Tuberculoses Externes par les Injections Modificatrices. Les Injections d'Huile Gomenolée. Par le Dr. Jacques Tribes, Ancien Externe des Hôpitaux de Paris, Interne de l'Asile National des Convalescents des Hôpitaux de Paris à St. Maurice. Price Fr.2.

MARHOLD, CARL, Halle a.S.

Sammlung zwangloser Abhandlungen aus dem Gebiete der Verdauungs- und Stoffwechsel Krankheiten. Herausgegeben von

Professor Dr. A. Albu in Berlin. II. Band, Heft 7. Die Gicht und ihre Therapie mit besonderer Berücksichtigung der Diätetik. von Prof. Dr. A. Schittenhelm, Erlangen und Privatdozent Dr. J. Schmid, Breslau. Zweite, erweiterte Auflage. Abonnementspreis für 1 Band (8 Hefte), M.8. Einzelpreis dieses Heftes beträgt, M.1.80.

Sammlung zwangloser Abhandlungen aus dem Gebiete der Dermatologie, der Syphilidologie und der Krankheiten des Urogenital-apparates. Herausgegeben von Professor Dr. J. Jadassohn in Bern. I. Band, Heft. 1. Ueber moderne Syphilistherapie mit besonderer Berücksichtigung des Salvarsans. Von Geh. Med.-Rat Prof. A Neisser, Dir. der Dermatolog. Univ.-Klinik und Poliklinik in Breslau. Abonnementspreis für 1 Band (8 Hefte), M.8; Einzelpreis dieses Heftes beträgt, M.1.50.

POINAT, A., 121, Boulevard Saint-Michel, Paris.

Le Livre du Médecin. Maladies du Cœur. Par J. Castaigne, Professeur agrégé, Médecin des Hôpitaux, et Ch. Esmein, Chef de Clinique Adjoint à la Faculté de Médecine. Price Fr.5 net.

Le Livre du Médecin. Maladies des Reins. Par J. Castaigne, Professeur agrégé à la Faculté de Médecine de Paris, Médecin des Hôpitaux. Price Fr.5 net.

Le Livre du Médecin. La Tuberculose. Par J. Castaigne, Professeur agrégé, Médecin des Hôpitaux, et F.-X. Gouraud, Ancien Chef de Laboratoire à la Faculté de Médecine. Price Fr.5 net.

Le Livre du Médecin. Le Diabète, la Goutte, l'Obésité. Par les Docteurs J. Castaigne, Professeur agrégé, Médecin des Hôpitaux, et F. Rathery, Professeur agrégé, Médecin des Hôpitaux. Price Fr.5 net.

STEINKOPFF, THEODOR, VERLAG VON, Dresden.

Preis-Schrift des Cartwright-Preises 1911 des College of Physicians and Surgeons der Columbia University, New York. Die Nephritis. Eine experimentelle und kritische Studie ihrer Natur und Ursachen sowie der Prinzipien ihrer Behandlung. Von Dr. Martin H. Fischer, Eichberg-Professor für Physiologie an der Universität Cincinnati, Ohio, U.S.A. Mit Autorisation des Verfassers in deutscher Sprache herausgegeben. Von Hans Handovsky Wien und Wolfg. Ostwald, Privatdozent an der Universität Leipzig. Price, paper, M.5; bound, M.6.

Die Kolloide in Biologie und Medizin. Von Prof. Dr. H. Bechhold, Mitglied des Königl. Instituts für Experimentelle Therapie zu Frankfurt a.M. Price, paper, M.14; bound, M.15.50.

TÖPELMANN, ALFRED (Vormals J. RICKER), Giessen.

Zur historischen Biologie der Krankheitserreger. Materialien, Studien und Abhandlungen. Gemeinsam mit V. Fossel, Graz; T. v. Györy, Budapest; W. His, Berlin. Herausgegeben von Karl Sudhoff, Leipzig, und Georg Sticker, Bonn. Heft 4: Georg Sticker. Zur historischen Biologie des Erregers der pandemischen Influenza. Price M.1. Heft 5: Karl Sudhoff. Mal Franzoso in Italien in der ersten Hälfte des 15. Jahrhunderts. Ein Blatt aus der Geschichte der Syphilis. Price, M.2.50.

URBAN UND SCHWARZENBERG, Berlin und Wien.

Diagnose und Therapie der Magen- und Darmkrankheiten. Anhang; Die chemische und mikroscopische Untersuchung des Mageninhaltes und der Faeces. Von Priv.-Doz. Dr. Walter Zweig, Abteilungs-vorstand am Kaiser-Franz-Josef Ambulatorium in Wien. Zweite, vermehrte Auflage. Price, paper, M.14; bound, M.16.

Fortschritte der Naturwissenschaftlichen Forschung. Herausgegeben von Prof. Dr. Emil Abderhalden, Halle a.S. Vierter Band. Price, paper, M.15; bound, M. 17.

VOSS, LEOPOLD, Leipzig und Hamburg.

Leitfaden der Krüppelfürsorge. Im Auftrage der Deutschen Vereinigung für Krüppelfürsorge gemeinverständlich dargestellt von Dr. Konrad Biesalski, Direktor und leitender Arzt der Berlin-Brandenburgischen Krüppelheil- und Erziehungsanstalt. Schriftführer der Vereinigung. Price M.1.

Dermatologische Studien. Band 22. Die Bedeutung des Sauerstoffs in der Färberei. Von P. G. Unna und L. Golodetz. Price M.4.

Ueber Säureretention als Krankheitsursache. Zugleich ein Beitrag zum Chemismus des Schlafes. Von Dr. Ludwig Hirschstein, Arzt für Stoffwechselerkrankungen in Hamburg. Price M.3.

Appointments.

Successful applicants for Vacancies, Secretaries of Public Institutions, and others possessing information suitable for this column, are invited to forward to THE LANCET *Office, directed to the Sub-Editor, not later than 9 o'clock on the Thursday morning of each week, such information for gratuitous publication.*

CATER, J., M.D. Brux., L.S.A., has been appointed Assistant Medical Officer of Health for Coventry.

COOK, Miss G. H., has been appointed Assistant Medical Officer at Headquarters of the General Post Office.

FERRAN, F. P., M.B., B.S. Belf., has been appointed Certifying Surgeon under the Factory and Workshop Acts for the Foxford District of the county of Mayo.

GREAVES, H. G., M.B., B.C. Cantab., has been appointed Certifying Surgeon under the Factory and Workshop Acts for the Oxted District of the county of Surrey.

GRIFFIN, W. R., L.R.C.P. & S. Edin., L.F.P.S. Glasg., has been appointed Certifying Surgeon under the Factory and Workshop Acts for the Tavistock District of the county of Devon.

KENDALL, FRANK EDWARD, M.B., Ch.B. Lond., has been appointed Junior Assistant Medical Officer at the Oxford County Asylum.

KING, BARTY, M.D. Edin., M.R.C.P. Edin., has been appointed Honorary Physician for Diseases of the Chest to St. Pancras Dispensary.

LAKIN, C. ERNEST, M.D. Lond., M.R.C.P. Lond., F.R.C.S. Eng., has been appointed Assistant Physician to the Middlesex Hospital.

LITTLEWOOD, MARTIN W., M.R.C.S., L.R.C.P. Lond., B.S. Lond., has been appointed House Surgeon at the Hampstead General Hospital.

OGILVY, DAVID, M.D., B.Ch., B.A.O Dub., has been appointed Medical Superintendent of the Long Grove Asylum.

ROBINSON, A. L., M.B., B.S. Lond., has been appointed House Physician at University College Hospital.

SIBLEY, W. KNOWSLEY, M.D. Cantab., M.R.C.P. Lond., has been appointed Physician to St. John's Hospital for Diseases of the Skin.

SPROULL, J., M.B., M.S. Glasg., has been appointed Certifying Surgeon under the Factory and Workshop Acts for the Luddenden District of the county of Yorks, West Riding.

STAUNTON, M. D., L.A.H. Dub., has been appointed Certifying Surgeon under the Factory and Workshop Acts for the Swineford District of the county of Mayo.

TANNER, HAROLD H., M.B., B.S. Lond., has been appointed House Physician at the Hampstead General Hospital.

WALTON, ALBERT J., M.S. Lond., F.R.C.S. Eng., has been appointed Assistant Surgeon to the Evelina Hospital for Children, Southwark.

Vacancies.

For further information regarding each vacancy reference should be made to the advertisement (see Index).

BARNSLEY, BECKETT HOSPITAL.—Second House Surgeon, unmarried. Salary £100 per annum and all found.

BEDFORD COUNTY HOSPITAL.—Assistant House Surgeon. Salary £80 per annum, with board, lodging, and laundry.

BIRMINGHAM AND MIDLAND EYE HOSPITAL.—Second and Third House Surgeons. Salaries £80 and £75 per annum respectively, with board, rooms, and laundry.

BRADFORD CITY BABIES' WELCOMES.—Medical Officer (female). Salary £250 per annum.

BRADFORD ROYAL INFIRMARY.—Two House Surgeons, unmarried. Salary £100 per annum, with board, residence, and washing.

BRENTFORD UNION INFIRMARY.—First Assistant Medical Superintendent, unmarried. Salary £185 per annum, with apartments, rations, washing, &c.

BRIGHTON AND HOVE HOSPITAL FOR WOMEN.—House Surgeon, unmarried, for six months. Salary £80 per annum, with apartments, board, light, attendance, &c.

BRISTOL CITY AND COUNTY.—Female Medical Inspector of Midwives and Health Visitors. Salary £100 per annum.

BRISTOL EYE HOSPITAL.—House Surgeon. Salary £80 per annum, with board and residence.

BRISTOL ROYAL HOSPITAL FOR SICK CHILDREN AND WOMEN.—Junior Resident Officer. Salary £90 per annum, with rooms and attendance.

BURY ST. EDMUNDS, WEST SUFFOLK GENERAL HOSPITAL.—House Surgeon, unmarried. Salary £100 per annum, with board, lodging, and laundry.

CAMBRIDGE, ADDENBROOKE'S HOSPITAL.—House Physician. Salary £80 per annum, with board, residence, and laundry.

CANCER HOSPITAL (FREE), Fulham-road, S.W.—Assistant Pathologist. Salary £350 per annum. Also House Surgeon for six months. Salary £70 per annum.

CARLISLE NON-PROVIDENT DISPENSARY.—Resident Medical Officer. Salary £150 per annum, with apartments.

CHELSEA HOSPITAL FOR WOMEN, Fulham-road, S.W.—Clinical Assistant for three months.

CHELTENHAM GENERAL HOSPITAL.—House Physician, unmarried. Salary £80 per annum, with board, lodging, and washing.

CLIFTON, YORK, NORTH RIDING LUNATIC ASYLUM.—Assistant Medical Officer. Salary £150 per annum, with board, apartments, washing, and attendance.

DORCHESTER COUNTY ASYLUM.—Second Assistant Medical Officer. Salary £200 per annum, with board, &c.

DORCHESTER, DORSET COUNTY HOSPITAL.—House Surgeon, unmarried. Salary £100 per annum, with board, &c.

DUDLEY, GUEST HOSPITAL.—Senior Resident Medical Officer. Salary £100 per annum, with board, residence, attendance, and washing.

DUNBARTON, COUNTY OF.—Medical Officer. Salary £450 per annum.

DUNDEE ROYAL INFIRMARY.—Medical Assistants.

EDMONTON UNION INFIRMARY, Bridport-road, Upper Edmonton.—Second Assistant Medical Officer, unmarried. Salary £120 per annum, with residential allowances.

FRIMLEY, BROMPTON HOSPITAL SANATORIUM.—Medical Superintendent. Salary £500 per annum, with board and residence.

GLOUCESTER, GLOUCESTERSHIRE ROYAL INFIRMARY AND EYE INSTITUTION.—Senior House Surgeon. Salary £100 per annum, with board, residence, and washing.

GREAT NORTHERN CENTRAL HOSPITAL, Holloway, London, N.—House Surgeon and House Physician for six months. Salary at rate of £40 per annum in each case, with board, lodging, and laundry.

HEMEL HEMPSTEAD, WEST HERTS HOSPITAL.—Resident Medical Officer. Salary £100 per annum, with rooms, board, and washing.

HEREFORDSHIRE GENERAL HOSPITAL.—House Surgeon, unmarried. Salary £120 per annum, with board, apartments, and washing.

HOSPITAL FOR CONSUMPTION AND DISEASES OF THE CHEST, Brompton, S.W.—Assistant Physician.

HOSPITAL FOR SICK CHILDREN, Great Ormond-street, W.C.—House Surgeon, unmarried, for six months. Salary £30, with board, residence, &c. Also Assistant Casualty Medical Officer, unmarried, for six months. Salary £30, with board and residence, &c.

JERSEY POOR-HOUSE AND INFIRMARY (HÔPITAL-GÉNÉRAL).—Medical Officer. Salary £250 per annum.

KENSINGTON DISPENSARY AND CHILDREN'S HOSPITAL.—Resident Medical Officer, unmarried. Salary £100 per annum, with board, apartments, and laundry.

KENSINGTON AND FULHAM GENERAL HOSPITAL, Earl's Court, S.W.—Assistant Physician.

KING'S COLLEGE HOSPITAL, London.—Clinical Assistant.

LARBERT, STIRLING DISTRICT ASYLUM.—Second Assistant Medical Officer. Salary £140 per annum, with board, lodging, and laundry.

LEEDS PUBLIC DISPENSARY.—Junior Resident Medical Officer. Salary £100 per annum, with board and lodging.

LIVERPOOL DISPENSARIES.—Assistant Surgeon, unmarried. Salary £100 per annum, with board and apartments.

LIVERPOOL HOSPITAL FOR CANCER AND SKIN DISEASES, Myrtle-street.—Honorary Surgeon.
LIVERPOOL ROYAL INFIRMARY.—Dental Surgeon.
MACCLESFIELD GENERAL INFIRMARY.—Junior House Surgeon. Salary £80 per annum, with board and residence.
METROPOLITAN HOSPITAL, Kingsland-road, N.E.—Physician.
MILLER GENERAL HOSPITAL FOR SOUTH-EAST LONDON, Greenwich-road, S.E.—Senior and Junior House Surgeon for six months. Salaries at rate of £100 and £85 per annum respectively, with board, attendance, and laundry.
NAVAL FORCES IN THE UNITED KINGDOM.—Dental Surgeon. Salary £1 per day.
NEW HOSPITAL FOR WOMEN.—Female Senior Assistant. Also Clinical Assistant.
OXFORD, RADCLIFFE INFIRMARY AND COUNTY HOSPITAL.—Casualty Officer, unmarried, for six months. Salary at rate of £80 per annum, with board, &c.
OXFORD UNITED DISTRICTS.—Medical Officer of Health. Salary £400 per annum.
QUEEN'S HOSPITAL FOR CHILDREN, Hackney-road, Bethnal Green, E.—Surgeon-in-Charge of Ear, Nose, and Throat Department.
ROTHERHAM HOSPITAL AND DISPENSARY.—Assistant House Surgeon. Salary £80 per annum, with board, lodging, and washing.
ROYAL EAR HOSPITAL, Soho.—House Surgeon, non-resident. Salary £40 per annum. Also Honorary Assistant Anæsthetist.
ROYAL FREE HOSPITAL, Gray's Inn-road, W.C.—Senior Resident Medical Officer. Salary £100 per annum, with board, residence, and washing.
ROYAL HALIFAX INFIRMARY.—Senior House Surgeon, unmarried Salary £120 per annum, with residence, board, and washing. Also Third House Surgeon, unmarried. Salary £80 per annum, with residence, board, and washing.
ROYAL NAVAL MEDICAL SERVICE.—Fifteen Appointments.
ST. THOMAS'S HOSPITAL MEDICAL SCHOOL.—Demonstrator of Physiology.
SALFORD ROYAL HOSPITAL.—House Surgeon. Salary at rate of £75 per annum. Also Junior House Surgeon and Casualty House Surgeon. Salaries at rate of £65 per annum. All for six months, with board and residence.
SHEFFIELD UNION HOSPITAL, Firvale.—Senior Resident Assistant Medical Officer, unmarried. Salary £130 per annum, with apartments, rations, &c.
SHEFFIELD UNIVERSITY.—Demonstrator in Experimental Physiology. Salary £200 per annum.
SHREWSBURY, SALOP INFIRMARY (COUNTY HOSPITAL).—House Physician Salary at rate of £70 per annum, with board and apartments.
SOUTHAMPTON WORKHOUSE INFIRMARY, Shirley Warren.—Resident Assistant Medical Officer. Salary £130 per annum, with apartments, rations, washing, and attendance.
STAFFORD, STAFFORDSHIRE GENERAL INFIRMARY.—House Physician. Salary £82 per annum, with board, residence, and laundry.
SUNDERLAND ROYAL INFIRMARY.—Junior House Surgeon for six months. Salary £80 per annum, with board, residence, and laundry.
UNIVERSITY COLLEGE HOSPITAL, Gower-street, W.C.—Assistant Surgeon.
VICTORIA HOSPITAL FOR CHILDREN, Tite-street, Chelsea, S.W.—Radiographer. Salary £75 per annum.
WEST-END HOSPITAL FOR DISEASES OF THE NERVOUS SYSTEM, &c., 73, Welbeck-street, W.—Resident House Physician for six months. Salary at rate of £50 per annum. Also Clinical Assistants.
WOLVERHAMPTON AND STAFFORDSHIRE GENERAL HOSPITAL.—Resident Medical Officer. Salary at rate of £100 per annum, with board, rooms, and laundry. Also Resident Surgical Officer. Salary £125 per annum, with board, apartments, and laundry.

THE Chief Inspector of Factories, Home Office, London, S.W., gives notice of vacancies as Certifying Surgeons under the Factory and Workshop Act at Blisworth, in the county of Northampton; at Gatehouse, in the county of Kirkcudbright; at Medbourne, in the county of Leicester; at Rye, in the county of Sussex; and at Salisbury, in the county of Wilts.

Births, Marriages, and Deaths.

BIRTHS.

DEWEY.—On March 1st, the wife of E. W. Dewey, M.R.C.S., L.R.C.P., of Kingswear, London-road, Portsmouth, of a son.
HUGHES.—On March 3rd, at St. Thomas-street, S.E., the wife of E. C. Hughes, F.R.C.S. Eng., of a son (still-born).
LLOYD-WILLIAMS.—On Feb. 24th, at Sandon, the wife of R. V. Lloyd-Williams, M.B., of a son.
OWEN.—On Feb. 27th, at Grove Lodge, Kingston-on-Thames, the wife of John Griffith Owen, M.R.C.S., of a son.
YULE.—On March 2nd, at St. Albans-villas, Highgate-road, N.W., Marie, the wife of Bransby Yule, M.R.C.S., L.R.C.P., of a daughter.

DEATHS.

DODD.—On March 1st, at Walthamstow, Henry Noel Nelthorpe, L.R.C.P. & S. Edin., only son of Henry Alnutt Dodd, aged 43 years. R.I.P.
ELLIOT.—On March 2nd, at Belvedere-road, Upper Norwood, George Stanley Elliot, M.R.C.P., F.R.C.S. Edin., aged 68 years.
MCNALTY.—On March 1st, at Lansdowne-road, Blackheath, George William McNalty, C.B., M.D., F.R.C.S. Irel., Lieutenant-Colonel late Army Medical Staff, in the 75th year of his age.
SIMPSON.—On Feb. 28th, at Cumberland-terrace, Regent's Park, Frank Simpson, Surgeon-Major, retired, R.A.M.C.

N.B.—A fee of 5s. is charged for the insertion of Notices of Births, Marriages, and Deaths.

Notes, Short Comments, and Answers to Correspondents.

THE GALTON LECTURES.

QUITE recently the Eugenics Education Society has endeavoured to awaken public interest in this country in eugenics as a school subject. That it can be made interesting, as well as instructive, is shown by the two lectures with which Professor Karl Pearson opened the course of Galton lectures at University College recently, while if we eliminate the allusions to specific individuals the main contention of the lecturer could be understood by many children. His purpose was to show that Galton owed his mental characteristics more to ancestry than to environment, thus using the founder of the science of eugenics as an example of its teachings. Beginning with a brief reference to the writings of Galton, in which, while fully appreciating the modifications due to environment, he holds that mental and physical characteristics are alike inherited, and that "when nature and nurture compete for supremacy on equal terms, the former proves the stronger," Professor Pearson showed on the screen many portraits of the Galton, Darwin, and other families from which Sir Francis Galton was descended. Professor Pearson then dealt with the genealogical charts with which his audience had been supplied, the drawing up of which must have entailed much labour. The lecturer referred to the difficulty of obtaining trustworthy information in the tracing back of a pedigree through the squirearchy to the yeoman class, which can always be followed until about A.D. 1600 by the church registers and until A.D. 1500 through wills; beyond that time the difficulties are very great. The charts referred to were three in number. They showed: (1) the direct ancestors of Sir Francis Galton as far as yet traced; (2) a pedigree showing the connexion of the Barclays (Lucy Barclay was the paternal grandmother of Sir Francis Galton) with noteworthy ancestors, including the Frankish kings, the Carlovingians, French kings, and the royal houses of our own country; and (3) the immediate ancestry and collaterals. Emphasising the point that nurture had not very much to do with Galton's development, Professor Pearson alluded to the fact that school life was uncongenial to both Galton and Darwin. The lecturer then commented on the various forebears of Galton—the Saviles, the Sedleys, the Colliers and Colyears, the Barclays and Darwins—and showed how one marriage brought in one dominant factor and another marriage another. Professor Pearson closed his first lecture with an interesting comparison between Darwin and Galton based on the love of travel in the Barclay strain. Darwin accepted a position in the *Beagle* not from an inherent love of travel, but because he wished to add to the stock of scientific knowledge; while Galton, in his works, rushed from point to point, showing here a new field for biologists, here a field for the psychologist, and so on, thus showing the *Wanderlust* even in his writings.

COW-DUNG AS A PREVENTIVE OF PLAGUE.

WE have received a long letter from a Sub-Assistant Surgeon at Baroda on the subject of the washing of the floors of Hindu huts with cow-dung, a proceeding advocated by Dr. C. N. Saldanha for the prevention of plague, and to which reference was made in our columns on Sept. 30th and Oct. 21st last year. In this letter, after discussing certain objections and particularly that arising from the possibility of tubercle bacilli being present in the cow-dung, our correspondent describes the two usual methods in practice of applying the dung to the floors in India, viz., (1) in the form of a thick paste, and (2) by means of a watery solution. In either case it is mixed with some other substance, usually the yellow or black earth (pili or kali mati), and the mucilaginous character of the cow-dung referred to by Dr. Saldanha is chiefly due to this admixture. The first of these methods is carried out at long intervals, extending usually over some months or even years. The thick paste after drying cracks in many places, and these fissures harbour fleas, and possibly other organisms. The second process, that is the washing of the floor with the watery solution of dung, is carried out daily, the woman of the house commonly retaining for use the same filthy rag and earthenware pot for long periods. Our correspondent sees no benefit whatever in either of these methods as regards the prevention of plague, but apprehends, on the other hand, grave danger to the inmates of the house from the tubercle bacilli that may be present in the cow-dung. He does not see much prospect of disinfection of floors in India by pesterine, carbolic acid, or other cheap antiseptic coming into general use. While admitting that, except on the score of expense, cement floors would be the best he recommends a mixture of tar and concrete as being satisfactory for the purpose; but he asks if the readers of THE LANCET can suggest a cheaper substitute, as also a cheap and effective floor-washing disinfectant, so that all grades of the population of India may be able to use it freely.

THE WOMEN'S IMPERIAL HEALTH ASSOCIATION.

WE have received the belated first annual report (1910) of this association, the aim of which is to instruct the women of the Empire in the elementary principles of hygiene, and to disseminate knowledge regarding the care and nurture of children. These ends they propose to accomplish by the organisation of instructive and educational meetings throughout London and the provinces, and the establishment of local branches throughout the Empire; by conducting health caravan tours through the villages and towns of England; the distribution of leaflets; watching legislation on various questions concerning women and children, and similar methods. Over 100,000 children, it is said, die yearly in England and Wales through parental ignorance and neglect. The ignorance of mothers as to their own health and the proper feeding of children is appalling, and many serious disorders are largely due to preventable ignorance. The report recounts the history of the association, which was founded in 1898 as the National Women's Health Association, and has already done good work in the institution of courses of lectures in and around London. Two caravan tours have also been made and have aroused considerable interest among those for whose benefit they were planned. Kinematograph displays illustrative of health matters have also been given in various London parks. Another useful work was the agitation for adequate lavatory accommodation for women. The success of the association is shown by the fact that it has been able to place no less than £1000 towards a reserve fund. The list of officials includes many well-known medical men, Lord Ilkeston, Sir T. Lauder Brunton, Sir Anderson Critchett, Lieutenant-Colonel Sir Joseph Fayrer, R.A.M.C., Sir William Bennett, Dr. Mitchell Bruce, Mr. McAdam Eccles, Dr. Clement Godson, Dr. T. N. Kelynack, Mrs. Scharlieb, M.D., and Dr. G. E. Shuttleworth being vice-presidents, while Mr. E. M. Corner is honorary treasurer. The president is Muriel Viscountess Helmsley, and the secretary Miss R. V. Gill. The offices are at 3, Princes-street, Hanover-square, W.

THE DESTRUCTION OF THE BED-BUG.

IN an annotation in THE LANCET of Feb. 24th, 1912, p. 520, reference was made to the association of the bed-bug with the propagation of kala-azar in India and to the practical application of this fact to preventive measures. Messrs. Edward Cook and Co., Limited, of Bow, London, E., point out, in reference to the methods of extermination of this loathsome insect, that their disinfectant "Cofectant" has been used with great success, quoting an instance of some old houses, the woodwork, lath, and plaster of which were infested with bugs. The Cofectant was applied in the form of spray at a dilution of 1 part in 80 parts of water (1 tablespoonful to 1 quart).

NITROUS OXIDE AND OXYGEN ANÆSTHESIA.

H. P. F.—We believe Dr. Crile's contributions on nitrous oxide and oxygen anæsthesia in major surgery have not been collected into a single volume. The most important papers have been noticed in the Annus Medicus of THE LANCET during the last five or six years under the heading "Anæsthetics." The following papers may be referred to as among the most important: "Note on Nitrous Oxide and Oxygen Anæsthesia in comparison with Ether Anæsthesia" (*Cleveland Medical Journal*, 1909, vol. viii., p. 352), and *Surgery, Gynæcology, and Obstetrics*, August, 1911—London publishers, Baillière, Tindall, and Cox. The transactions of various American societies contain papers or remarks by Dr. Crile upon this subject. These appear in abstract in the *Boston Medical and Surgical Journal*, the *Medical Record*, or the *Journal of the American Medical Association*. Files of these during the last few years should be consulted.

M.R.C.S.—Professor Dieulafoy, of Paris, died on August 16th, 1911.

COMMUNICATIONS not noticed in our present issue will receive attention in our next.

A DIARY OF CONGRESSES.

WE shall publish this diary from time to time that our readers may have under their hands the dates of the approaching scientific Congresses. It is unnecessary to issue the lists of all these functions week by week, and we propose to make only such gatherings as will occur in the immediate future the subject of regular announcement. The following Congresses, Conferences, and Exhibitions are announced for March, April, and May:—

March 7th–11th (Berlin).—Thirty-third Balneological Congress.
March 23rd–April 4th (London, Royal Agricultural Hall).—International Smoke Abatement Exhibition.
April 1st and 2nd (Milan).—Italian National Convention upon the Sexual Question.
,, (London).—First Congress of Pure Food and Health Society of Great Britain.
,, 1st–7th (Tunis).—Twenty-second Congress of French-speaking Alienists and Neurologists.
April 8th–13th (Rome).—Seventh International Congress of Dermatology and Syphilology.
,, 8th–15th (Johannesburg).—Thirteenth South African Medical Congress.
,, 8th–11th (Paris).—Congress of Physiotherapy for French-speaking Physicians.
,, 9th (Berlin).—Eleventh Congress of the German Society for Orthopædic Surgery.
,, 9th–13th (Giessen).—Congress on Study of Families, Inheritance, and Race Hygiene.
,, 10th–13th (Berlin).—Forty-first Congress of the German Surgical Society.
,, 14th (Berlin).—Eighth Congress of the German Röntgen Society.
,, 14th–20th (Rome).—Seventh International Congress on Tuberculosis.
,, 15th–18th (Wiesbaden).—Twenty-ninth German Congress for Internal Medicine.
,, 21st–24th (Munich).—Twenty-sixth Meeting of the Anatomical Society.
,, (London, Olympia).—Ideal Homes Exhibition.
Spring (London).—Second Optical Convention.
May 7th–17th (Washington).—Ninth International Red Cross Conference.
,, 23rd–25th (Hanover).—Nineteenth Meeting of the Union of German Laryngologists.
,, 25th–27th (Paris).—International Musical Festival.
Whitsuntide (Portrush).—British Esperanto Congress
May 27th–June 1st (London).—Eighteenth International Congress of Americanists.
,, 29th–31st (Berlin).—Fifteenth Session of the German Society for Gynæcology.
,, (London).—International Horticultural Exhibition.

Medical Diary for the ensuing Week.

SOCIETIES.

ROYAL SOCIETY OF MEDICINE, 15, Cavendish-square, W (temporary address during building of new house).

TUESDAY.

SURGICAL SECTION (Hon. Secretaries—L. A. Dunn, James Berry): at 5.30 P.M.

Papers:
Mr. John Murray: Case of Pancreatic Calculus-stone Removed by Operation.
Mr. G. H. Makins, C.B., Mr. Cuthbert Wallace, and Mr. Percy Sargent: Multiple Growths of the Great Gut.
Mr. W. G. Spencer: Hydrocephalus Internus-rupture into the Subdural Space: Intracranial Tension and its Temporary Relief.
Mr. G. H. Makins, C.B.: Multiple Fibromata of the Tunica Vaginalis.

FRIDAY.

OTOLOGICAL SECTION (Hon. Secretaries—Sydney Scott, A. Logan Turner), at 11, Chandos-street, W.: at 5 P.M.

Discussion
On the Value and Significance of Hearing Tests (to be introduced by Dr. Thomas Barr (Glasgow) and Mr. Sydney Scott (London)).

ELECTRO-THERAPEUTICAL SECTION (Hon. Secretaries—G. Harrison Orton, Cecil R. C. Lyster): at 8.30 P.M.

Paper:
Dr. Bordier (of Lyons): The Radio-therapeutic Treatment of Uterine Fibroma.

(Members of the OBSTETRICAL AND GYNÆCOLOGICAL SECTION are specially invited to attend.)

MEDICAL SOCIETY OF LONDON, 11, Chandos-street, Cavendish-square, W.

MONDAY.—8.30 P.M., Mr. T. Walker: The Value of the X Rays in the Diagnosis of Hydronephrosis.—Dr. W. I. Bruce: The X Ray Examination of the Urinary Tract.

CHELSEA CLINICAL SOCIETY, Medical School, St. George's Hospital, S.W.

TUESDAY.—8.30 P.M., Annual Clinical Debate. Paper:—Prof. Sir Clifford Allbutt: The Physician and the Pathologist on Heart Failure. A Discussion will follow in which Sir Lauder Brunton, Dr. S. West, Dr. H. Mackenzie, Dr. C. C. Gibbes, Dr. F. F. Calger and others will take part.

PHARMACEUTICAL SOCIETY OF GREAT BRITAIN, Lecture Theatre of the Society, 17, Bloomsbury-square, W.C.

TUESDAY.—8 P.M., Mr. R. R. Bennett and Mr. F. W. Gamble: Osmotic Pressure and its Physiological Bearing.—Mr. W. R. Pratt: Analysis of Ferri Citras cum Quinina et Strychnina (communication from the Society's Chemical Research Laboratory).

HUNTERIAN SOCIETY, London Institution, Finsbury-circus, E.C.

WEDNESDAY.—9 P.M., Mr. F. S. Kidd: A Fresh Aid to Prostatectomy.—Prof. W. G. Ball: Non-operative Treatment of Irreducible Herniæ.

ROYAL SOCIETY, Burlington House, London, W.

THURSDAY.—Dr. E. K. Martin: The Effects of the Ultra Violet Rays upon the Eye (communicated by Sir J. R. Bradford, K.C.M.G.).—Dr. W. S. Lazarus-Barlow: On the Presence of Radium in Some Carcinomatous Tumours (communicated by Sir J. R. Bradford, K.C.M.G.).—Dr. C. Russ: An Improved Method for Opsonic Index Examinations Involving the Separation of Red and White Human Blood Corpuscles (communicated by Dr. A. D. Waller).—Prof. W. M. Thornton: The Electrical Conductivity of Bacteria and the Rate of Inhibition of Bacteria by Electric Currents (communicated by Prof. C. S. Sherrington).—Mr. E. C. Hort and Dr. W. J. Penfold: A Critical Study of Experimental Fever (communicated by Dr. C. J. Martin).—Mr. S. G. Shattock and Mr. L. S. Dudgeon: Certain Results of Drying Non-sporing Bacteria in a Charcoal Liquid Air Vacuum (communicated by Sir J. Dewar).

UNITED SERVICES MEDICAL SOCIETY, Royal Army Medical College, Grosvenor-road, S.W.

WEDNESDAY.—5 P.M., Fleet-Surgeon A. Gaskell: Dust Traps nd their Dangers on Board Ships.

OPHTHALMOLOGICAL SOCIETY, 11, Chandos-street, Cavendish-square, W.

THURSDAY.—8 P.M., Cases and Card Specimens. 8.30 P.M., Papers:—Mr. Herbert: A Distinctive Conjunctival Papule.—Mr. Worth: The Operative Treatment of Conical Cornea.—Mr. H. W. Brailey: A New Cell Proliferant.—Mr. Zohrab: The Relief of Tension in Chronic Glaucoma.

HARVEIAN SOCIETY OF LONDON, Stafford Rooms, Titchborne-street, Edgware-road, W.

THURSDAY.—8.30 P.M., Dr. R. H. Cole: Hypochondriasis, its Significance and Treatment.—Mr. V. Z. Cope: Latent Surgical Disease.

SOCIETY OF TROPICAL MEDICINE AND HYGIENE, Royal Army Medical College, Grosvenor-road, S.W.

FRIDAY.—8 P.M., Demonstration of Various Microscopic and Other Specimens of Interest.

LECTURES, ADDRESSES, DEMONSTRATIONS, &c.

ROYAL COLLEGE OF SURGEONS OF ENGLAND, Lincoln's Inn Fields, W.C.

FRIDAY.—5 P.M., Prof. W. G. Ball: Acute Infective Processes Due to the Streptococcus, with Special Reference to the Value of Vaccines and Serums in Treatment.

MEDICAL GRADUATES' COLLEGE AND POLYCLINIC, 22, Chenies-street, W.C.

MONDAY.—4 P.M., Dr. G. Little: Clinique (Skin). 5.15 P.M., Lecture:—Dr. T. W. Eden: Clinical Diagnosis of Cancer of the Body of the Uterus.

TUESDAY.—4 P.M., Dr. P. Parkinson: Clinique (Medical). 5.15 P.M., Lecture:—Dr. N. Raw: The Treatment of Local Tuberculous Infections.

WEDNESDAY.—4 P.M., Mr. R. P. Rowlands: Clinique (Surgical). 5.15 P.M., Lecture:—Mr. W. H. Battle: Ventral Hernia.

THURSDAY.—4 P.M., Dr. W. P. S. Branson: Clinique (Medical). 5.15 P.M., Lecture:—Dr. R. Hutchison: Chronic Diarrhœa, its Varieties and Treatment.

FRIDAY.—4 P.M., Mr. H. L. Eason: Clinique (Eye).

POST-GRADUATE COLLEGE, West London Hospital, Hammersmith-road, W.

MONDAY.—10 A.M., Dr. Simson: Diseases of Women. 10.30 A.M., Surgical Registrar: Demonstration of Cases in Wards. 12 noon, Dr. Bernstein: Pathological Demonstration. 2 P.M., Medical and Surgical Clinics. X Rays. Operations. 2.30 P.M., Mr. Dunn: Diseases of the Eye. 5 P.M., Lecture:—Mr. Edwards: Clinical Cases.

TUESDAY.—10 A.M., Dr. Robinson: Gynæcological Operations. 11 A.M., Mr. Etherington-Smith: Demonstration of Minor Operations. 2 P.M., Medical and Surgical Clinics. X Rays. Operations. Dr. Davis: Diseases of the Throat, Nose, and Ear. 2.30 P.M., Dr. Abraham: Diseases of the Skin. 5 P.M., Lecture:—Dr. Bernstein: Blood Examination, Serology.

WEDNESDAY.—10 A.M., Dr. Saunders: Diseases of Children. Dr. Davis: Operations of the Throat, Nose, and Ear. 10.30 A.M., Surgical Registrar: Demonstration of Cases in Wards. 2 P.M., Medical and Surgical Clinics. X Rays. Operations. Mr. B. Harman: Diseases of the Eye. Dr. Simson: Diseases of Women. 5 P.M., Lecture:—Dr. Beddard: Practical Medicine. (Lecture V.)

THURSDAY.—10 A.M., Dr. Simson: Gynæcological Demonstration. 12.15 P.M., Lecture:—Dr. G. Stewart: Practical Medicine. 2 P.M., Medical and Surgical Clinics. X Rays. Operations. 2.30 P.M., Mr. Dunn: Diseases of the Eye. 5 P.M., Lecture:—Mr. P. Dunn: Infective Cyclitis.

FRIDAY.—10 A.M., Dr. Robinson: Gynæcological Operations. 12.15 P.M., Lecture:—Dr. Pritchard: Practical Medicine. 2 P.M., Medical and Surgical Clinics. X Rays. Operations. Dr. Davis: Diseases of the Throat, Nose, and Ear. 2.30 P.M., Dr. Abraham: Diseases of the Skin. 5 P.M., Lecture:—Dr. S. Taylor: Cerebral Hæmorrhage.

SATURDAY.—10 A.M., Dr. Saunders: Diseases of Children. Dr. Davis: Operations of the Throat, Nose, and Ear. Mr. Bishop Harman: Diseases of the Eye. 10.30 A.M., Medical Registrar: Demonstration of Cases in Wards. 2 P.M., Medical and Surgical Clinics. X Rays. Operations.

NORTH-EAST LONDON POST-GRADUATE COLLEGE, Prince of Wales's General Hospital, Tottenham, N.

MONDAY.—Clinics:—10.30 A.M., Surgical Out-patient (Mr. E. Gillespie). 2.30 P.M., Medical Out-patient (Dr. T. R. Whipham); Nose, Throat, and Ear (Mr. H. D. Gillies). 3 P.M., Clinical Pathology and Pathological Demonstration (Dr. W. H. Duncan).

TUESDAY.—Clinic: 2.30 P.M., Operations. Clinics:—Medical Out-patient (Dr. A. G. Auld).; Surgical (Mr. Howell Evans); Gynæcological (Dr. A. E. Giles). 3.30 P.M., Medical In-patient (Dr. A. J. Whiting). 4.30 P.M., Lecture:—Mr. H. W. Carson: Modern Methods of Investigation of the Surgical Disorders of Digestion, their Diagnosis and Treatment.

WEDNESDAY.—Clinics:—2 P.M., Throat Operations (Mr. Gillies). 2.30 P.M., Children's Out-patient (Dr. T. R. Whipham); Skin (Dr. G. N. Meachen); Eye (Mr. R. P. Brooks). 3 P.M., X Rays (Mr. W. Steuart); Clinical Pathology and Pathological Demonstration (Dr. W. H. Duncan). 5.30 P.M., Eye Operations (Mr. Brooks).

THURSDAY.—2.30 P.M., Gynæcological Operations (Dr. A. E. Giles). Clinics:—Medical Out-patient (Dr. A. J. Whiting); Surgical (Mr. Carson). 3 P.M., Medical In-patient (Dr. G. P. Chappel). 4.30 P.M., Lecture:—Mr. H. W. Carson: Modern Methods of Investigation of the Surgical Disorders of Digestion, their Diagnosis and Treatment.

FRIDAY.—2.30 P.M., Operations. Clinics:—Medical Out-patient (Dr. A. G. Auld); Surgical (Mr. E. Gillespie); Eye (Mr. R. P. Brooks). 3 P.M., Medical In-patient (Dr. R. M. Leslie); Clinical Pathology and Pathological Demonstration (Dr. W. H. Duncan).

LONDON SCHOOL OF CLINICAL MEDICINE, Dreadnought Hospital, Greenwich.

MONDAY.—2 P.M., Operations. 2.15 P.M., Mr. Turner: Surgery. 3.15 P.M., Sir Dyce Duckworth: Medicine. 4.30 P.M., Mr. R. Lake: Ear and Throat. Out-patient Demonstrations:—10 A.M., Surgical and Medical. 12 noon, Ear and Throat.

TUESDAY.—2 P.M., Operations. 3.15 P.M., Dr. R. Wells: Medicine. 2.15 P.M., Mr. R. Carling: Surgery. 4.15 P.M., Sir M. Morris: Diseases of the Skin. Out-patient Demonstrations:—10 A.M., Surgical and Medical. 12 noon, Skin.

WEDNESDAY.—2 P.M., Operations. 2.15 P.M., Dr. F. Taylor: Medicine. 3.30 P.M., Mr. Cargill: Ophthalmology. Out-patient Demonstrations:—10 A.M., Surgical and Medical. 11 A.M., Eye. 2.15 P.M., Special Lecture:—Dr. S. Taylor: Rheumatoid Arthritis.

THURSDAY.—2 P.M., Operations. 2.15 P.M., Dr. G. Rankin: Medicine. 3.15 P.M., Sir W. Bennett: Surgery. Out-patient Demonstrations:—10 A.M., Surgical and Medical. 12 noon, Ear and Throat. 4.30 P.M., Special Lecture:—Dr. Pritchard: The Application of Pathology to Clinical Medicine.

FRIDAY.—2 P.M., Operations. 2.15 P.M., Sir J. Rose Bradford: Medicine. 3.15 P.M., Mr. McGavin: Surgery. Out-patient Demonstrations:—10 A.M., Surgical and Medical. 12 noon, Skin.

SATURDAY.—10 A.M., Radiography. 11 A.M., Dr. A. Davies: Pathological Demonstration. 2 P.M., Operations. Out-patient Demonstration:—10 A.M., Surgical and Medical. 11 A.M., Eye.

HOSPITAL FOR SICK CHILDREN, Great Ormond-street, W.C.

THURSDAY.—4 P.M., Lecture:—Mr. Kellock: The Radical Cure of Inguinal Hernia.

NATIONAL HOSPITAL FOR THE PARALYSED AND EPILEPTIC, Queen-square, Bloomsbury, W.C.

TUESDAY.—3.30 P.M., Clinical Lecture:—Dr. J. Collier: Headache.

FRIDAY.—3.30 P.M., Clinical Lecture:—Dr. J. Collier: Ophthalmoplegia.

ST. JOHN'S HOSPITAL FOR DISEASES OF THE SKIN, 49, Leicester-square, W.C.

TUESDAY.—6 P.M., Mr. W. Hampson: X Rays, Deeper Tissues.

UNIVERSITY OF LONDON (UNIVERSITY COLLEGE), The Francis Galton Laboratory for National Eugenics.

TUESDAY.—8.30 P.M., Prof. K. Pearson: Tuberculosis—Heredity and Environment. (Lecture VII.)

ROYAL INSTITUTION OF GREAT BRITAIN, Albemarle-street Piccadilly, W.

FRIDAY.—9 P.M., Mr. F. Soddy: The Origin of Radium.

SATURDAY.—3 P.M., Prof. Sir J. J. Thomson: Molecular Physics. (Lecture IV.)

ANCOATS HOSPITAL, Manchester.

THURSDAY.—4.15 P.M., Dr. W. J. S. Bythell: X Ray Examination of the Stomach with Bismuth. (Post-Graduate Clinic.)

MANCHESTER ROYAL INFIRMARY.

TUESDAY.—4.30 P.M., Dr. H. Griffith: Demonstration of Cases of External Diseases of the Eye.

SALFORD ROYAL HOSPITAL.

THURSDAY.—4.30 P.M., Mr. G. Wright: Cholelithiasis. (Post-Graduate Course).

OPERATIONS.

METROPOLITAN HOSPITALS.

MONDAY (11th).—London (2 P.M.), St. Bartholomew's (1.30 P.M.), St. Thomas's (3.30 P.M.), St. George's (2 P.M.), St. Mary's (2.30 P.M.), Middlesex (1.30 P.M.), Westminster (2 P.M.), Chelsea (2 P.M.), Samaritan (Gynæcological, by Physicians, 2 P.M.), Soho-square (2 P.M.), Gt. Northern Central (2.30 P.M.), West London (2.30 P.M.), London Throat (9.30 A.M.), Royal Free (2 P.M.), Guy's (1.30 P.M.), Children, Gt. Ormond-street (9 A.M.), St. Mark's (2.30 P.M.), Central London Throat and Ear (Minor 9 A.M., Major 2 P.M.).

TUESDAY (12th).—London (2 P.M.), St. Bartholomew's (1.30 P.M.), St. Thomas's (3.30 P.M.), Guy's (1.30 P.M.), Middlesex (1.30 P.M.), Westminster (2 P.M.), West London, (2.30 P.M.), University College (2 P.M.), St. George's (1 P.M.), St. Mary's (1 P.M.), St. Mark's (2.30 P.M.), Cancer (2 P.M.), Metropolitan (2.30 P.M.), London Throat (9.30 A.M.), Samaritan (9.30 A.M. and 2.30 P.M.), Throat, Golden-

square (9.30 A.M.), Soho-square (2 P.M.), Chelsea (2 P.M.), Children, Gt. Ormond-street (9 A.M. and 2 P.M., Ophthalmic, 2 P.M.), Tottenham (2.30 P.M.), Central London Throat and Ear (Minor, 9 A.M., Major, 2 P.M.), Royal National Orthopædic (9.30 A.M. and 4 P.M.).

WEDNESDAY (13th).—St. Bartholomew's (1.30 P.M.), University College (2 P.M.), Royal Free (2 P.M.), Middlesex (1.30 P.M.), Charing Cross (3 P.M.), St. Thomas's 2 P.M.), London (2 P.M.), King's College (2 P.M.), St. George's (Ophthalmic, 1 P.M.), St. Mary's (2 P.M.), St. Peter's (2 P.M.), Samaritan (9.30 A.M. and 2.30 P.M.), Gt. Northern Central (2.30 P.M.), Westminster (2 P.M.), Metropolitan (2.30 P.M.), London Throat (9.30 A.M.), Cancer (2 P.M.), Throat, Golden-square (9.30 A.M.), Guy's (1.30 P.M.), Royal Ear (2 P.M.), Children, Gt. Ormond-street (9 A.M. and 9.30 A.M., Dental, 2 P.M.), Tottenham (Ophthalmic, 2.30 P.M.), West London (2.30 P.M.), Central London Throat and Ear (Minor, 9 A.M., Major, 2 P.M.).

THURSDAY (14th).—St. Bartholomew's (1.30 P.M.), St. Thomas's (3.30 P.M.), University College (2 P.M.), Charing Cross (3 P.M.), St. George's (1 P.M.), London (2 P.M.), King's College (2 P.M.), Middlesex (1.30 P.M.), St. Mary's (2.30 P.M.), Soho-square (2 P.M.), North-West London (2 P.M.), Gt. Northern Central (Gynæcological, 2.30 P.M.), Metropolitan (2.30 P.M.), London Throat (9.30 A.M.), Samaritan (9.30 A.M and 2.30 P.M.), Throat, Golden-square (9.30 A.M.), Guy's (1.30 P.M.), Royal National Orthopædic (9 A.M. and 3.30 P.M.), Royal Ear (2 P.M.), Children Gt. Ormond-street (9 A.M. and 2 P.M.), Tottenham (Gynæcological, 2.30 P.M.), West London (2.30 P.M), Central London Throat and Ear (Minor, 9 A.M., Major, 2 P.M.).

FRIDAY (15th).—London (2 P.M.), St. Bartholomew's (1.30 P.M.), St. Thomas's (3.30 P.M.), Guy's (1.30 P.M.), Middlesex (1.30 P.M.), Charing Cross (3 P.M.), St. George's (1 P.M.), King's College (2 P.M.), St. Mary's (2 P.M.), Ophthalmic (10 A.M.), Cancer (2 P.M.), Chelsea (2 P.M.), Gt. Northern Central (2.30 P.M.), West London (2.30 P.M.), London Throat (9.30 A.M.), Samaritan (9.30 A.M. and 2.30 P.M.), Throat, Golden-square (9.30 A.M.), Royal National Orthopædic (3.30 P.M.), Soho-square (2 P.M.), Children, Gt. Ormond-street (9 A.M., Aural, 2 P.M.), Tottenham (2.30 P.M.), St. Peter's (2 P.M.)., Central London Throat and Ear (Minor, 9 A.M., Major, 2 P.M.).

SATURDAY (16th).—Royal Free (9A.M.), London (2 P.M.), Middlesex (1.30 P.M.), St. Thomas's (2 P.M.), University College (9.15 A.M.), Charing Cross (2 P.M.), St. George's (1 P.M.), St. Mary's (10 A.M.), Throat, Golden-square (9.30 A.M.), Guy's (1.30 P.M.), Children, Gt. Ormond-street (9 A.M. and 9.30 A.M.), West London (2.30 P.M.).

At the Royal Eye Hospital (2 P.M.), the Royal London Ophthalmic (10 A.M.), the Royal Westminster Ophthalmic (1.30 P.M.), and the Central London Ophthalmic (2 P.M.), Hospital operations are performed daily.

WE much regret that in our Diary of Feb. 24th the dates of two of Professor Flexner's Harben Lectures before the Royal Institute of Public Health were incorrectly stated.

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MANAGER'S NOTICES.

THE INDEX TO THE LANCET.

The Index and Title-page to Vol. II. of 1911 were given in THE LANCET of Dec. 30th, 1911.

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METEOROLOGICAL READINGS.

(Taken daily at 8.30 a.m. by Steward's Instruments.)

THE LANCET Office, March 6th, 1912.

Date.	Barometer reduced to Sea Level and 32° F.	Direction of Wind.	Rain fall.	Solar Radio in Vacuo.	Maximum Temp. Shade.	Min. Temp.	Wet Bulb.	Dry Bulb.	Remarks.
Feb. 29	29·83	S.W.	0·04	80	56	51	49	51	Overcast
Mar. 1	29·83	S.W.	...	64	53	49	48	50	Raining
,, 2	29·75	S.W.	0·06	80	56	48	48	51	Cloudy
,, 3	29·44	S.W.	0·30	83	54	45	46	47	Cloudy
,, 4	29·65	S.W.	0·08	60	52	42	44	45	Overcast
,, 5	29·23	W.	0·50	92	54	45	45	47	Cloudy
,, 6	29·43	S.W.	0·02	86	51	40	40	42	Cloudy

The following journals, magazines, &c., have been received:—

Indian Ambulance Gazette, St. Bartholomew's Hospital Journal, Asylum News, Revue de Gynécologie, Mining Journal, Deutsche Zeitschrift für Nervenheilkunde, Brain, Report of the London School of Tropical Medicine on Filariasis and Elephantiasis in Fiji, Journal of Physiology, Le Monde Médical, Review of Neurology and Psychiatry, La Tubercolosi, Journal of the Royal Sanitary Institute, Journal of Obstetrics and Gynæcology, Indian Medical Gazette, Polyclinic, British Journal of Dental Science, South African Medical Review, Transvaal Medical Journal, Annals of Tropical Medicine and Parasitology, Public Health, Medical Review, Dominion Medical Monthly, Edinburgh Medical Journal, Journal of Laryngology.

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The Milroy Lectures

ON

PARATYPHOID FEVER AND MEAT POISONING.

Delivered before the Royal College of Physicians of London

BY F. A. BAINBRIDGE, M.A., M.D. CANTAB., F.R.C.P. LOND., D.P.H.,

PROFESSOR OF PHYSIOLOGY, UNIVERSITY OF DURHAM.

LECTURE I.

Delivered on Feb. 29th.

MR PRESIDENT AND GENTLEMEN,—I wish to offer my thanks to the College for the honour conferred in appointing me to deliver these lectures.

The clinical features of meat poisoning and paratyphoid fever are very different and at the first glance the two diseases may appear to have little or nothing in common. They are, however, linked together by the fact that they are caused by closely allied organisms.

Some writers have emphasised the clinical difference between them, whereas others have called attention to the similarity (some say the identity) of the bacilli by which they are caused. At the present time the term paratyphoid fever has, therefore, a very different meaning for various writers; and as a result the literature abounds in widely conflicting statements, and the whole subject has been rendered obscure to those who have not made a special study of it.

No serious attempt has yet been made to correlate the clinical and epidemiological characters of meat poisoning and paratyphoid fever with the nature and distribution of the bacilli with which they are associated, and the absence of an authoritative and generally accepted definition of these diseases has inevitably led to confused notions as to their relation to one another. My object in these lectures is to make it clear that they are essentially different diseases, more especially as regards their epidemiology. The recognition of this fact is a necessary preliminary to any advance in their treatment by preventive measures.

I propose first to discuss the classification of the organisms, which are associated with paratyphoid fever and meat poisoning; secondly, to state the definitions of these diseases which appear to accord best with the facts at present available; and thirdly, to describe them separately in order to bring out as sharply as possible the contrast between them. Finally, other definitions of paratyphoid fever will be considered.

HISTORICAL RÉSUMÉ.

It will be convenient, before discussing the different organisms, to give a brief historical *résumé* of the circumstances under which the various bacteria associated with these diseases were isolated, and then to classify them as far as possible.

In 1888, while investigating a large outbreak of meat poisoning Gaertner isolated from the suspected meat and from the spleen of a patient who died a bacillus which he called *B. enteritidis*. Ten years later Durham in England and De Nobele in Belgium independently and almost simultaneously isolated from cases of meat poisoning and from the meat a bacillus closely allied to Gaertner's bacillus. The new organism was called *B. aertrycke*, this being the name of the village in which occurred the outbreak recorded by De Nobele.

In 1896, Acharde and Bensaude isolated from the urine of a case of apparent enteric fever and also from a purulent arthritis following a similar illness a bacillus which they called the *paratyphoid bacillus*. And in 1900–01, Schottmüller obtained from the blood of patients whose symptoms were those of enteric fever two bacilli closely resembling the paratyphoid bacillus of Achard and Bensaude. These two organisms were named by Brion and Kayser B. paratyphosus (A) and B. paratyphosus (B).

The relationship between these four organisms was not at once recognised, but it has been shown during the last few years that they are very closely allied to each other, and also to *B. suipestifer*. This latter organism was isolated by Salmon and Theobald Smith (1885) from an outbreak of swine fever (also known as hog cholera and Schweinpest). They regarded it as the cause of swine fever and for some time its relation to disease in man was entirely unsuspected. It is now well known, through the work of De Schweinitz, Dorset, and McBryde, confirmed by others, that it is not the cause of swine fever, but is merely a secondary invader in that disease.

CLASSIFICATION.

The close relationship between these organisms necessitates the employment of rather laborious methods for their identification. Cultural tests are inadequate and must invariably be supplemented by agglutination and absorption tests.

Cultural Characters.

B. paratyphosus (A) differs culturally from the other members of the group in one important respect—namely, in its action upon litmus milk and in some minor details. The other four organisms are indistinguishable from one another by their cultural characters and their action upon carbohydrates.[1]

Agglutination Tests.

A further means of differentiation is furnished by the use of sera obtained from animals immunised with killed or living cultures of these bacilli. By the aid of such sera B. paratyphosus (A) and B. enteritidis (Gaertner) can readily be distinguished both from each other and from the remaining members of the group. B. aertrycke, B. suipestifer, and B. paratyphosus (B) cannot usually be separated by agglutination tests, although with some sera B. paratyphosus (B) can be distinguished from the other two bacilli.

TABLE I.—*Agglutination Reactions with Sera obtained from Inoculated Animals.*

—	B. paratyphosus (A).	B. paratyphosus (B).	B. suipestifer.	B. aertrycke.	B. enteritidis (Gaertner).
Serum of rabbit inoculated with—					
(1) B. paratyphosus (A).	50,000	< 100	< 100	< 100	< 100
(2) B. paratyphosus (B).	2,000	20,000	10,000	—	< 100
(3) B. suipestifer.	< 100	4,000	5,000	5,000	< 100
(4) B. aertrycke.	< 100	5,000	5,000	5,000	< 100
(5) B. enteritidis (Gaertner).	< 100	< 20	< 20	< 100	50,000

All the observations were made by the macroscopic methods.

Absorption Tests.

The serum of an animal which had been inoculated with a given bacillus often agglutinates, not only that (homologous) bacillus, but also other allied (heterologous) organisms. Sometimes the agglutination titre of the serum for both the homologous and the heterologous organisms is practically the same, and their differentiation by agglutination tests alone is impossible. The same phenomenon is observed in the serum of patients suffering from a particular infection—e.g., enteric fever.

It has been found (Castellani, Boycott, Bainbridge) that under these circumstances a heterologous organism, when added to the serum, absorbs only its own agglutinins, leaving intact the agglutinin for the homologous organism; the addition of the homologous bacillus to the serum removes all the agglutinins formed in the serum in response to its injection into the animal. The absorption method is of very great value for the differentiation of closely allied organisms

[1] The chief characters of these organisms are as follows:—They give rise to the production of acid and gas in broth containing glucose, mannite, dulcite, lævulose, galactose, arabinose, maltose, and sorbite. No apparent change occurs in broth containing lactose, saccharose, salicin, raffinose, and inulin. No indol is formed. Litmus milk inoculated with B. paratyphosus (A) shows slight acidity persisting for three weeks or more; no clot is formed. Litmus milk inoculated with any of the other organisms shows an initial transient acidity not often lasting more than 24 hours. In three to five days the milk is definitely alkaline and at the end of a week intensely alkaline; no clot is formed.

and seems to be particularly useful as regards this group. By its use, B. paratyphosus (B) can be readily distinguished from B. suipestifer and B. aertrycke, whereas the two latter organisms are indistinguishable from one another, as may be seen in Table II.

TABLE II.—*Absorption Reactions.*

—	—	Agglutination limit after absorption.		
		B. paratyphosus (B).	B. suipestifer.	B. aertrycke.
Serum of rabbit inoculated with— (1) B. paratyphosus (B).	Original titre	5000	1000	1000
	Absorbed with—			
	B. paratyphosus (B) ...	200	200	200
	B. suipestifer	4000	< 200	< 200
(2) B. suipestifer.	Original titre	4000	5000	5000
	Absorbed with—			
	B. paratyphosus (B) ...	< 200	4000	4000
	B. aertrycke	< 200	< 200	< 200

Complement Deviation.

Dean has shown that the complement deviation method yields results which correspond exactly to those obtained by the absorption method. He finds that unless a suitable dilution of anti-serum be employed the group antibodies will mask the specific nature of the reaction. They can, however, be removed by absorption previously to carrying out the complement fixation test. Thus, when B. paratyphosus (B) anti-serum is absorbed with an emulsion of paratyphoid (A) bacilli, the latter removes the group antibodies for B. paratyphosus (A), and B. typhosus, but not for B. paratyphosus (B), as is shown by subsequently applying the complement deviation test. Dean found that B. paratyphosus (B) could be differentiated from B. suipestifer and B. aertrycke, but that no difference between the two latter organisms could be demonstrated.

The methods employed for the identification of these bacilli are summarised in Table III. So far as can be judged

TABLE III.—*Method of Identifying the Members of the Salmonella Group.*

Description of organism.	Cultural characters.	Agglutination test.	Absorption test.	Complement deviation test.
(1) B. suipestifer or aertrycke.	Identical.	Usually indistinguishable.	Differentiated by this test.	Can all be differentiated.
(2) B. paratyphosus (B).				
(3) B. enteritidis (Gaertner).		Stands alone.	—	
(4) B. paratyphosus (A).	Differs from the others.	Stands alone.	—	

at present, B. suipestifer and B. aertrycke are indistinguishable from one another, and must be regarded as a single organism which has acquired two names. For several reasons it is preferable to use the name B. suipestifer rather than B. aertrycke. The other three organisms can be readily differentiated both from one another and from B. suipestifer.

The Salmonella Group.

I propose to describe these bacilli, including B. paratyphosus (A), under the term Salmonella group. Most writers exclude B. paratyphosus (A), but the advantages of including these four organisms in a single group are considerable. This name is also more distinctive than the expressions "intermediate" or "paracolon" group which are sometimes used.

In addition to these bacilli a number of organisms obtained by various workers from many sources is often included in the Salmonella group. They have usually received a name indicative of the source from which they were derived, or of the morbid condition with which they were associated. Such are (1) B. psittacosis, isolated by Nocard during an outbreak of illness occurring among parrots in Paris; (2) B. typhi murium, which has been found in mice; (3) B. morbificans bovis, which was isolated by Basenow from a diseased cow; (4) B. icteroides of Sanarelli; (5) B. Danysz and many others.

From the observations of others and of myself, it appears that all these bacilli are identical with one or other of the four organisms described above. Thus B. psittacosis is apparently identical with B. suipestifer, and B. Danysz and B. morbificans bovis are indistinguishable from B. enteritidis (Gaertner). Some of the strains described as B. typhi murium are identical with B. suipestifer, others with B. enteritidis (Gaertner), others, again, are mixtures of these two bacilli.

Nothing is gained by retaining this somewhat confusing array of different names for the same organisms; and it is both simpler and more accurate to regard the Salmonella group as consisting of only four organisms, namely: (1) B. paratyphosus (A); (2) B. paratyphosus (B); (3) B. suipestifer (or as an alternative name B. aertrycke); and (4) B. enteritidis (Gaertner).

This scheme of classification has recently been tested by Bainbridge and O'Brien. A large number of strains of bacilli belonging to the Salmonella group was obtained from food, or from cases of paratyphoid fever or meat poisoning. All the strains were readily recognised as identical with one or other of the above members of the Salmonella group. No anomalous strains were met with, and the investigation entirely confirmed the foregoing classification. They also found that all the strains of B. suipestifer were derived either from meat or from cases of meat poisoning, whereas all the strains of B. paratyphosus (B) were obtained from cases clinically resembling enteric fever or from persistent carriers after such an illness.

This classification is not accepted by most German writers, who do not make use of either the absorption or the complement deviation method for this group, and therefore draw no distinction between B. suipestifer and B. paratyphosus (B), or between paratyphoid fever and meat poisoning.

These four bacilli are evidently extremely closely related to one another, and their differentiation depends upon the use of rather delicate methods and requires careful technique. The differences, however, are constant and persistent, and I have found that the strains of these bacilli kept in the laboratory and tested from time to time during the last four years have remained absolutely stable in their characters. We shall see also that these distinctions, slight though they are, correspond with wide differences in the distribution of these bacilli and in the nature of the illness to which they give rise. I believe, therefore, that they may be regarded as entirely distinct species.

Experiments on Transmutation.

Attempts have been made, however, to show that transmutation may occur in the animal body, and even *in vitro*. Thus, Schmitt injected B. suipestifer into calves, and after a few days recovered from their blood in some cases a bacillus which corresponded in its agglutination reactions to B. enteritidis (Gaertner). Two experiments yielded a positive and three a negative result. He concludes that these two organisms are not different species, but merely varieties which can be readily transformed from one to the other in the animal body. These experiments are open to the criticism that the Gaertner's bacillus obtained from the calves may have been present in them before the injection of B. suipestifer. This possibility was not excluded by Schmitt, althought Gaertner's bacillus undoubtedly occurs at times in calves.

I have repeated this experiment by feeding healthy guinea-pigs with B. enteritidis (Gaertner) and subsequently examining their fæces from time to time. It was found that the same guinea-pig might yield in the culture at one time B. suipestifer, and at another time Gaertner's bacillus, and another time both organisms. The explanation has been shown to be that B. suipestifer is a frequent inhabitant of the alimentary canal of healthy guinea-pigs, and that in these experiments it was a matter of chance which organism was isolated.

The evidence that transmutation of these organisms takes place in the animal body is, therefore, far from convincing, and the difficulties in showing that these organisms undergo modification there are great. The fallacies which beset the question of transmutation in the animal body are largely eliminated in experiments made in vitro, and Sobernheim

and Seligmann claim to have observed the gradual transformation of culture of Gaertner's bacillus into B. suipestifer in the laboratory. This observation, however, has not been confirmed by others, and the transformation of these organisms cannot be regarded as proved.

Nevertheless, it may be conjectured that the members of the Salmonella group have arisen by a slow process of evolution from a common ancestor; and the fact that these bacilli, as we know them now, are usually found in different species of animals suggests that possibly they have become modified by prolonged existence in animals of a given species.

DEFINITION OF PARATYPHOID FEVER AND MEAT POISONING.

We may now proceed to define paratyphoid fever and meat poisoning before considering in detail the clinical and epidemiological characters of these two diseases, and the evidence on which the definition is based.

Paratyphoid fever may be defined as a disease which clinically resembles, and is often indistinguishable from, enteric fever, and which is caused either by B. paratyphosus (A) or by B. paratyphosus (B); the latent period varies generally from 8 to 18 days, and the usual mode of infection is by human carrier cases.

Meat poisoning is a disease of which the characteristic symptom is acute gastro-enteritis of comparatively brief duration, and which is caused in a very considerable proportion of cases by either B. enteritidis (Gaertner) or B. suipestifer; the latent period is short, rarely exceeding 48 hours, and the usual source of infection is contaminated meat.

Other definitions of paratyphoid fever—namely, that held by German writers and that recently suggested by Firth—will be subsequently considered.

PARATYPHOID FEVER.

The cultivation of a paratyphoid bacillus from the blood of a patient "with all the clinical features of typhoid fever" by Gwyn in 1898 represents the first definite diagnosis of a case of paratyphoid fever, although he described it as a "paracolon bacillus." Schottmüller found in similar cases two species of paratyphoid bacilli which Brion and Kayser labelled (A) and (B). The symptoms of enteric fever may be caused, therefore, either by B. typhosus or by B. paratyphosus (A) or by B. paratyphosus (B).

During the last few years a considerable number of cases of paratyphoid fever caused by B. paratyphosus (B) have been recorded; and the important investigations of the Royal Army Medical Corps workers in India have made extensive additions to our knowledge of the paratyphoid (A) bacillus fever. For the sake of convenience these two infections will be dealt with separately, although, as we shall see, their clinical features and epidemiology are practically identical.

PARATYPHOID (A) FEVER.

Paratyphoid fever caused by B. paratyphosus (A) occurs in most parts of the world, although curiously enough no case has yet been recorded in this country. In Germany 8 cases in all have been described. In France two epidemics have been recorded, one of 19 cases by Netter, and one of 16 cases by Nicolle and Cathoire. In America Proescher and Roddy examined 262 patients whose symptoms were those of enteric fever, and found B. paratyphosus (A) in 8 per cent.; the diagnosis was made by blood cultures and was confirmed by agglutination tests.

Paratyphoid fever in Europe is much more often caused by B. paratyphosus (B) than by B. paratyphosus (A). But the cases mentioned above suffice to show that paratyphosus (A) infection is not so rare in Europe as is sometimes supposed. There is no doubt, however, that it occurs much more frequently in Asia, and particularly in India, than in Europe. In India, indeed, paratyphoid (B) infection is almost unknown, and according to Castellani this holds good also for Ceylon. Paratyphoid (A) fever was first recognised in India by the members of the Enteric Fever Commission in 1906–08; B. paratyphosus (A) was isolated from four patients. Since that time cases have been described by Morrison, Harvey, Wood, Grattan, and others.

As soon as attention was drawn to the matter it became clear that paratyphoid fever was far from uncommon in India. In 1910 39 cases were isolated, and it has been calculated by Grattan and Wood that probably a third of the cases returned in India as pyrexia of uncertain origin are in reality cases of paratyphoid fever due to infection by B. paratyphosus (A). Since 4386 cases of pyrexia of uncertain origin occurred among the British troops in India in 1909, paratyphoid fever is evidently widely prevalent. A chart drawn up by Grattan and Wood shows that most of the cases have occurred in the northern half of India, although the disease has been recognised as far south as Poona. It has also been met with in Ceylon, Sumatra, and South Africa.

Prevalence as Compared with Enteric Fever.

The actual prevalence of paratyphoid fever caused by B. paratyphosus (A) is probably most readily realised by comparing it with that of enteric fever. Not only is the incidence of the latter in most countries carefully recorded, but also the large majority of paratyphoid fever cases have been met with in the course of investigations of outbreaks of enteric fever. For instance, during the years 1901–07 505 cases clinically resembling enteric fever were bacteriologically examined by Kayser in Strasburg; 473 of these yielded B. typhosus, whereas B. paratyphosus (A) was isolated in 5 cases only (just over 1 per cent.). In the series of 262 cases examined by Proescher and Roddy, B. typhosus was isolated from 11 per cent. and B. paratyphosus (A) from 8 per cent.

During the year 1910 there were in the British army in India 306 cases of enteric fever and 44 cases of paratyphoid (A) fever, the latter forming nearly 15 per cent. of the total cases. According to writers in India, the real percentage of paratyphoid cases, as compared with enteric fever, would be even higher if all the paratyphoid (A) cases were distinguished. Incidentally it may be noted that prophylactic inoculation against enteric fever does not seem to confer any protection against an attack of paratyphoid fever. Forty of the 44 cases of paratyphoid fever just mentioned had been inoculated previously against enteric fever.

Seasonal Prevalence.

In America most of the cases seem to occur in September and October, and the curve of incidence as regards the time of year closely follows that of enteric fever. So far as can be gathered, paratyphoid and enteric fever also occur for the most part at the same time of year in India—namely, the hot dry months of April and May.

Bacteriology.

In almost all the cases here referred to the bacilli were identified by both cultural and agglutination tests. They appear to correspond in all respects with strains of the bacillus isolated in Europe. One strain, however, isolated in India, although identical in its cultural characters with B. paratyphosus (A), was not agglutinated at all by a paratyphoid (A) serum. Nor did the serum of a rabbit inoculated with this organism agglutinate B. paratyphosus (A). A similar organism has been found from time to time by Morgan in the excreta of healthy men and of pigs. It is not agglutinated by the serum of animals inoculated with Schottmüller's strain of B. paratyphosus (A) and may be described as B. pseudo-paratyphosus (A), since it is analogous to the pseudo-Gaertner organisms described by Savage. It is apparently a harmless saprophyte, and it is desirable not to confuse it with the true B. paratyphosus (A). The omission of this precaution has led to erroneous statements as to the distribution of the genuine organism in man and animals.

Apart from cases of clinical paratyphoid (A) fever, the bacillus has been met with once in acute gastro-enteritis, on two occasions from the gall-bladder during operation for gall-stones, and in one instance from an abdominal abscess which followed paratyphoid (A) fever. It does not occur in healthy men except after an attack of paratyphoid fever. Nor has it been found (with one exception) either in the lower animals or in food or water. The distribution of the bacillus is practically limited, therefore, to cases of paratyphoid (A) fever, or to those who have become carriers as a sequel of this disease; and there can be little or no doubt that it is the cause of the illness with which it is associated. It thus resembles B. typhosus or B. paratyphosus (B), not only in being essentially an inhabitant of the human rather than the animal intestine, but also in its predilection for the gall-bladder.

Clinical Features.

The course of a typical case of paratyphoid (A) fever closely resembles that of mild enteric fever. The incubation

period varies from 10 to 18 days, and is usually about 15 days. The onset of the illness is gradual, the patient complaining of severe frontal headache and pains in the back and limbs. Bronchitis and sore throat are not infrequent. The temperature rises in a step-like fashion, reaching its maximum by the fifth or seventh day; it falls gradually and becomes normal at the end of the second week. In severe cases the temperature may remain raised for three or four weeks. In contrast with mild enteric fever the pulse is rapid and is quite often as much as 110; the frequency of the pulse in paratyphoid fever does not necessarily indicate that the attack is a severe one. The abdomen is slightly distended, the spleen is enlarged, and constipation is the rule. The typical rash (rose spots) is often present and other forms of rash—e.g., purpuric or morbilliform—are occasionally seen.

Relapses are not infrequent and phlebitis, cholecystitis, and anæmia are not uncommon complications. Intestinal hæmorrhage and perforation have been observed, but are rare. Although practically every symptom and complication of enteric fever also occur in paratyphoid (A) fever the majority of the cases are of a mild character; sometimes the illness is so slight that it may be readily overlooked, and ambulant cases have been met with.

Post-mortem Appearances.

I have met with only one record of a post-mortem examination (Grattan and Wood). In this case the man died from perforation of the only ulcer which could be found at the necropsy; the Peyer's patches were not obviously enlarged, but the lower part of the ileum showed signs of inflammation. The spleen weighed 6 oz. and the wall of the gall-bladder was thickened and inflamed.

Mortality.

The death-rate is very low; Proescher and Roddy place it at less than 2 per cent. During the year 1910, 44 cases occurred in the British army in India, all of which recovered. This striking difference between the mortality of enteric and paratyphoid (A) fever is of considerable importance. In the first place, the recognition of a given case as paratyphoid fever at once enables a favourable prognosis to be made. Secondly, the fact that a large number of cases which have been formerly described as enteric fever are paratyphoid (A) fever must considerably modify our views as to the mortality of enteric fever. In the British Army during the year 1910 there occurred 306 cases of enteric fever, with 47 deaths, a mortality of 15·3 per cent. If we add to these the 44 cases of paratyphoid fever which *formerly* would have been recorded as enteric fever we arrive at a mortality of 13·4 per cent.

Diagnosis.

1. *Isolation of the bacillus.*—The only certain means of diagnosing paratyphoid (A) fever is the isolation of the bacillus from the blood or stools of the patient during life, or from the spleen or other organs after death. Paratyphoid (A) fever is a septicæmia, and blood cultures made during the first week of the illness give a positive result in the vast majority of instances.

2. *Serum reactions.*—The diagnosis of this disease in India by the serum reaction of the patient is complicated by the fact that most of them have been previously vaccinated against enteric fever. In such instances it has been found that, even when the cause of the illness is B. paratyphosus (A), the agglutination titre of the serum for B. typhosus rises considerably, and may be higher than that for B. paratyphosus (A). Even under the most favourable circumstances the patient's serum rarely gives a positive reaction for the latter organism in a higher dilution than 1–100. Sometimes the agglutination of B. typhosus is marked, whereas B. paratyphosus (A) is not agglutinated by a 1–10 dilution of the serum. In other cases of undoubted paratyphoid (A) fever the patient's serum agglutinates at one time only B. typhosus, at another only B. paratyphosus (A).

Harvey and Wood have shown that the use of the absorption method often gives valuable information as to the true cause of the illness. In cases of paratyphoid (A) fever in which the patient's serum agglutinated both the typhoid and the paratyphoid (A) bacillus they found that absorption with B. paratyphosus (A) removed all the agglutinins present, whereas absorption with B. typhosus removed only the co-agglutinins for that organism, leaving intact the specific agglutinin for B. paratyphosus (A). The absorption method is also of value in those instances in which the patient's serum agglutinates B. typhosus but not B. paratyphosus (A); absorption with B. paratyphosus (A) removes all the agglutinins from the serum.

The variable and comparatively feeble production of agglutinins in paratyphoid (A) fever has been noticed not only in India but also in Europe, and it seems to be characteristic of infections with B. paratyphosus (A).

The fact that the serum of a patient suffering from enteric fever may agglutinate not only B. typhosus but also B. paratyphosus (A) must be taken into consideration. Boycott examined 86 cases of enteric fever, and found that in 48 of these the patients' serum contained secondary agglutinins for B. paratyphosus (A). The secondary agglutinin was usually small in amount, and only in one patient was the agglutination titre identical for both B. typhosus and B. paratyphosus (A). Occasionally, however, the amount of secondary agglutinin may be considerable. Mixed infection with the typhoid and paratyphoid (A) bacilli is also possible, although it has not yet been observed.

It is clear that as a means of diagnosing paratyphoid (A) fever serological observations are beset by many sources of error and need very careful technique. They cannot be relied upon as a trustworthy routine method of diagnosis.

Epidemiology.

Our knowledge of the epidemiological characters of this disease is entirely due to the work of the Royal Army Medical Corps in India. The accumulation of evidence as to its spread in India has been materially assisted by two factors. In the first place, a large proportion of the patients admitted to hospital as suffering from enteric fever have been vaccinated against this disease, and the occurrence of symptoms of enteric fever in vaccinated individuals has naturally caused their blood and excreta to be examined with unusual care. Secondly, in some stations the medical officers have been able to make almost daily examinations of the excreta of these patients over a period of many weeks or even months.

For these reasons attention has been more readily called to cases of paratyphoid fever which might have escaped diagnosis if occurring in an unvaccinated population. It is probable, indeed, that the prevalence of paratyphoid fever in India has become so evident partly owing to the comparative infrequency of enteric fever in the British army. However this may be, the routine examination of convalescent cases of paratyphoid (A) fever has yielded extremely valuable information with regard to the existence of human carriers of B. paratyphosus (A).

Carrier Cases.

During 1910–11 at Naini Tal enteric depot 10 carriers were discovered out of 157 convalescent paratyphoid cases. Nine of these carriers were acute and ceased to excrete bacilli within three months of the termination of their illness. In the tenth case the excretion of the bacilli ceased at the end of five months. All these cases were fæcal carriers; no urinary carriers were discovered. In this respect paratyphoid fever seems at first sight to differ from enteric fever, in which about 2 per cent. of the total cases become *chronic* fæcal carriers.

It may be noted, however, that almost all the paratyphoid (A) cases described in India occurred in men and that cholecystitis or other evidence of infection of the gall-bladder was comparatively rare. It will be remembered that the large proportion of chronic carriers of B. typhosus are women, and that many of them are suffering from disease of the gall-bladder. It seems not improbable, therefore, that the infrequency of chronic paratyphoid (A) carriers in India results from the special circumstances under which it has been studied in that country, and is not necessarily a constant characteristic. There is, in fact, definite evidence of the existence of chronic carriers of B. paratyphosus (A).

Blumenthal has recorded the case of a woman who was operated on for gall-stones. B. paratyphosus (A) was obtained both from the gall-stones and from her stools, although the patient had not recently suffered from paratyphoid fever. The organism was agglutinated by the patient's serum in a dilution of 1–300. Another chronic carrier, also a woman, was met with by Aoki; in this case the patient became a carrier after an illness resembling mild enteric fever, and her serum also agglutinated the bacillus.

Dr. Ledingham also informs me that he has met with a chronic carrier (a man) who had had paratyphoid (A) fever 8–10 years previously.

There appears, indeed, to be no essential difference between enteric and paratyphoid (A) fever as regards the occurrence and character of carrier cases.

Infection Caused by Carriers.

The comparative mildness of most cases of paratyphoid (A) fever in India apparently causes the true nature of the illness to be overlooked from time to time. Moreover, ambulant cases are not unknown, two having been described by Grattan and Wood. Cases of this kind are obviously liable, whether they become carriers or not, to serve as centres for the spread of the disease.

There is also strong presumptive evidence that patients who have recovered from paratyphoid fever, but are acute carriers, can give rise to outbreaks of this disease. For example, Harvey and Grattan have described a small outbreak (8 cases) of paratyphoid (A) fever in which the evidence suggested that the illness was caused by a cook who had recently suffered from this disease complicated by cholecystitis. The serum of the cook was tested and gave a positive reaction to B. paratyphosus (A), and shortly after he was found to be passing this bacillus in large numbers in his stools. The cases of paratyphoid fever began to occur a fortnight after the cook had been discharged from the hospital, and the last case was admitted 12 days after he was isolated for the second time. All the cases took place, therefore, during a period in which infection by this cook was possible, and only during that period. These facts point to this man being the actual source of the infection, the more so as other sources had been excluded as far as possible.

It is not known whether the more frequent source of the spread of the disease is infection by acute carriers or by unrecognised cases. Grattan and Wood, however, consider the acute convalescent carrier to be the chief cause of the spread of the disease in India. So far as can be gathered, there is nothing to show that water-supplies or flies play any part in the spread of infection.

A Clinical Lecture
ON
DERANGEMENTS OF THE KNEE FOLLOWING STRAINS AND BLOWS.

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GENTLEMEN,—It is impossible to say whether strains and consequent derangements of function of the knee-joint are more frequent now than some years ago, but I can vouch for the fact that one is consulted about these injuries more often nowadays than formerly, both in and out of hospital. Also that the varieties of lesions which one sees appear to be greater for some reason. This may be an actual fact, but is more probably due to the acquisition of a greater power of discrimination between the various mechanical lesions met with.

I want to-day to discuss with you some of these strains and blows and their consequences, in the light of many cases about which I have been consulted here in the hospital and elsewhere.

PARTIAL SEPARATION OF SEMILUNAR CARTILAGE.

To begin with, I may mention a case which I saw a few days ago with a fairly common history.

CASE 1.—The patient was an ardent football player, and last autumn, during a game, an opponent flung himself violently against the outer side of his left knee while the leg was extended and the foot was resting firmly on the ground. This, of course, forced the knee inwards and put a very severe strain on the internal lateral ligament. The pain was severe, but was described as seated over the outer side of the joint, and not the inner, where the chief strain would mechanically fall. It may have been due to the actual blow upon the outer side. However, this pain passed off, and—as I understood the patient—without any effusion into the knee. Then a month or so later in kicking off with the same leg he felt violent pain in the knee, this time on the inner side, at about the lower insertion of the internal lateral ligament. The accident was followed by great effusion, distending the synovial pouches on either side. This subsided in about four days, and when I was consulted three weeks later there was no trace of it. The joint appeared normal in every way except for a little tenderness over the internal lateral ligament. The only complaint made now by the patient was that if he kicked out with the limb he felt violent pain on the inner side of the knee. When walking he felt no trouble of any kind, and could flex and extend his knee without difficulty. There was never, he said, any catch or "locking" of the bones.

The interpretation of this condition is, to my mind, not quite easy. One's first thought is that it might be explained by the strain alone of the two lateral ligaments, and a certain amount of tenderness when any unusual tension was exerted on them, as in energetic kicking. But that view is not quite satisfactory, for it does not fit in with the absence of effusion on the first lateral injury, and the rapid filling of the joint and pain on the inner side with the second, the strain this time being applied in the movement of forced extension.

What appears more probable is that the first accident stretched the internal lateral ligament and capsule on the inner side of the knee. The internal semilunar cartilage being held in its place by its attachment to the capsule would be rendered more mobile by this loosening of the capsule. Remember that during flexion of the knee the internal semilunar cartilage moves normally backwards and towards the centre of this joint, following the convexity of the femur, the expansion of the quadriceps at the same time being lax. When extension begins the tendinous expansions of the extensor muscles are rendered tense over the front and sides of the joint, and with them the capsule underlying them. This should draw out the semilunar cartilage into its normal position as the femur slides upon the tibia. But if, as after stretching or partial tearing of the internal lateral ligament and the adjacent capsule, the semilunar cartilage has receded further inwards than normal, it can on extension be jammed between the condyle and the tibia, and held thus while the capsule and muscular expansion are drawn tightly outwards. The result of this is that the two bones are kept apart by the meniscus wedged between them, instead of following their movements, and as the leverage is great the internal lateral ligament is stretched and great pain is felt.

Besides this, the capsule, being drawn away from the fixed semilunar cartilage, is often more or less torn off its outer periphery, adding to the pain, as it is highly furnished with nerves. Neither the encrusting cartilage of the bones nor the meniscus is sensitive. The pain is always due to the strain or tearing of the ligaments and capsule. The rent between the outer border of the meniscus and the capsule may be very slight when the catch occurs for the first time, and I have seen it not more than half an inch long. But this is quite enough to increase the mobility of the cartilage and to admit of its receding further than before into the joint during each subsequent flexion, especially if combined with eversion of the tibia.

Such a strain as I suppose to have occurred in this case increases the liability to subsequent jamming of the meniscus between the bones, and, consequently, to extension of the rent begun by the preceding catch. In this way, by successive jamming of the free margin of the semilunar cartilage between the two bones, the capsule may ultimately be completely torn away from the thick border of the meniscus, which at last may be only attached to the tibia by its cornua, and otherwise float free in the joint as one has often seen. Such a separation rarely takes place as the result of one accident. It is the sequel to many separate catches and drags. Each of these strains produces more or less traumatic synovitis, which, as a rule, however, soon subsides. But in many cases each attack leaves behind it some hyperæmia and weakness of the joint, and as the problem of relief is purely a mechanical one the loose cartilage should be removed before the joint becomes permanently overstrained and damaged.

In the case above related I say that I believe the lesion to be a partial separation of the semilunar cartilage due to stretching of the internal lateral ligament and capsule. But one cannot be certain as yet and I have advised support of

the knee by an elastic bandage and easy exercise. If the pain persists on sudden flexion of the knee I shall advise an exploration of the joint. For it cannot be denied that as a rule a displaced meniscus is accompanied by some arrest of movement, either in extension or more rarely in flexion, and there is none in this case. And it may be that the pain on sudden extension in this case felt on kicking out may be due to the first stretching of the lateral ligaments, combined with some consequent synovitis and hypersensitiveness of the swollen membrane.

ENLARGED SYNOVIAL MEMBRANE.

That a swollen synovial membrane, after strains and blows on the knee, may give rise to symptoms closely simulating a displacement of the semilunar cartilage, is clear from many cases which we have seen and operated on. In these cases we have a history of injury such as a violent wrench of the knee, almost invariably with the foot and tibia everted. After this there is effusion, and when this has passed off a sense of weakness, which in the position of partial flexion often "lets the patient down." There may even be a slight catch or locking of the joint for a moment, but never in my experience a complete arrest of movement, such as we often get in typical dislocation of the meniscus.

Still there is evidence that the obstacle to the easy movements of the articulation is a mechanical one, and when on this ground we have felt justified in exploring the joint in some cases redundant fringes of hypertrophied synovial membrane have been found, and on their removal all symptoms have been relieved. They are usually most redundant behind the patella, and can be drawn into our usual incision and cut off with scissors. They consist of fringes of synovial tissue, thickened and swollen by inflammatory exudation.

All these cases of chronically enlarged synovial fringes do not require operation, however. Under treatment of rest, with blistering or the use of Bier's bandage, they may be reduced in size and give no more trouble. It is only when this treatment fails that they require excision. Another point about them is that they are often met with in rheumatic people, and the doubt may arise as to whether the pain is not all rheumatic.

RHEUMATOID ARTHRITIS IN THE KNEE.

This point opens up an interesting question. Many patients with more or less obvious rheumatoid arthritis of the knee-joint often develop after a strain or a blow, symptoms which suggest a displacement of a semilunar cartilage. There are pain and stiffness sometimes amounting almost to "locking" in one position. Here it is necessary to consider whether the movements are affected by irregularity of the joint surfaces due to the osteo-arthritis, or actually to a loosening or displacement of the meniscus. Both may be present. For it is well known that in rheumatoid arthritis the semilunar cartilages become less elastic and their surfaces less polished, as does also the cartilage covering the condyles, so that two factors are present likely to lead to their being caught between the bones when having receded between them during flexion they ought to return during extension.

This is a very difficult matter to decide on, and sometimes quite impossible without operation. For my own part I have long hesitated to operate in these doubtful cases. But in several, with some hesitation, I have opened the joint and found *both* conditions present. In these I have removed the meniscus, and afterwards cut away the osteo-arthritic excrescences at the borders of the bones, with complete relief. Of one of these I have heard since that he was climbing the mountains in Switzerland, and the other patient has recently consulted me about another ailment, the knee I had operated on giving him no further trouble. In other cases the treatment has been that for the rheumatoid condition alone, and has been as successful as could be expected.

TYPICAL DISPLACEMENT OF MENISCUS.

The history and symptoms of a typical displacement of the internal meniscus are so clear that they can hardly be mistaken. It is very rare for the external to be dislocated.

Please remember that the attitude of the knee, in which jamming of the thin edge of the cartilage between the bones is most likely to take place, is one of flexion, in-bending of the joint, and *eversion* of the tibia. This normally brings the cartilage well in between the condyles and the tibia as far as its peripheral attachments will allow it to go. The force applied will nearly always be such as to have produced this attitude if we inquire into it closely. It is sometimes a fall, sometimes a wrench at football, or a long jump, and often appears to develop slowly after a series of trifling jars, such as knocking the foot against the treads of a staircase in ascending or flinging the leg over a bicycle.

Symptoms.

But, however caused, the symptoms are the same. There is severe pain usually over the inner side of the knee, and a "locking" when the patient tries to extend the limb. This locking may be very transient or last for hours or days, and may disappear during sleep or after the limb has been well flexed and then inverted before being again extended. When it has disappeared the movements of the joint are perfect and painless unless there is much effusion, which is common, but does not last long. It may be weeks or months before another catch occurs, and in the meantime the patient may be unconscious of anything being amiss with the joint until after extension with the foot everted it may suddenly and unexpectedly get caught again with the same pain. The intervals between these attacks usually become shorter and shorter as the semilunar cartilage becomes looser. In a few cases the meniscus when quite detached, except at its cornua, seems to shrivel up into the intercondyloid notch and gives no further trouble at all, but such cases are rare.

Position and Amount of Detachment.

The detachment commences most frequently, in my experience, as seen in operations, on the anterior and outer aspect of the periphery of the meniscus, and the rent extends from this point forwards and backwards. But occasionally it begins behind the internal lateral ligament and extends only backwards, rarely until the posterior cornu is separated from the bone.

These are the cases in which it is sometimes difficult to detect the lesion when the joint has been opened, for the rent is hidden. But the separation is rendered clear by putting a small steel hook into the meniscus far back during extreme flexion and eversion of the leg and pulling it forward. If it is detached it will slip over the convexity of the condyle more or less, or actually into the anterior part of the joint, and be seen to be loose. In this condition it may often be possible to demonstrate the particular movements of the joint which dislocate it. For instance, it may be pushed back into its normal position and the knee extended once more. Then if the joint be slowly flexed with the leg everted, while the wound is held open, it may be seen at one particular moment that the cartilage slips over the convexity of the condyle with a sudden jerk and even a sound which are very characteristic.

It is remarkable what a small amount of separation of the external attachment of the meniscus is enough to produce definite symptoms of catching and pain in the joint. Several times I have seen on operating, where the evidence of displacement was clear, a rent of not more than half an inch long between the anterior border of the semilunar cartilage and the capsule stained by the remains of blood-clot and still showing the ragged, torn surface.

As a rule, however, where several "attacks" have taken place this ragged, torn surface is seen to have healed and become rounded and polished. But it is clear that it requires very little separation of the meniscus from its peripheral anchorage to enable its free margin to get caught between the bones, whether the rent be in the posterior or the anterior part of the periphery of the meniscus. This is hardly to be wondered at when the extremely delicate mechanism of the joint is considered.

Mechanism of Knee-joint.

The crude conception of the knee as a simple hinge is far from covering the whole mechanism. The play of each condyle on the tibia and semilunar cartilages has in some respects more of the elements of a ball-and-socket movement than is commonly supposed. And if there is any loosening of the various guiding ligaments in its movements, and particularly if there is any striation or loss of polish on the surfaces as the gliding takes place, derangements are not to be wondered at.

The mere play of the capsule over the "lipped" borders of rheumatic bones may also give rise to unusual dragging sensations in the movements of the joints, just as one has often seen one of the inner hamstring tendons caught either in

front of or behind a small exostosis which has appeared and grown larger and larger on the inner side of the head of the tibia. Moreover, an osteo-arthritic nodule on the border of the encrusting cartilage of either femur or tibia may interfere with the free play of the internal lateral ligament during flexion and extension and give rise to much pain and even a suspicion of derangement of the semilunar cartilage when a more or less sudden catch occurs.

It will remain for the future to determine whether in cases where we have reason to suppose that the osteo-arthritic nodules are in the way of either the capsule or lateral ligament it would not be proper to remove them by operation. In two or three cases in which after removing a displaced meniscus I have chiseled or pared them off, I thought the conditions were improved very much.

CHIPS OF ARTICULAR CARTILAGE FREE IN THE JOINT.

In addition to the effects of blows and strains just mentioned, it must not be forgotten that pieces of articular cartilage may be chipped off by direct impact upon the lateral aspect of the knee. I believe that it is usually the femur which is affected. So far I have only seen one quite unmistakeable instance of this in my own work.

CASE 2.—The patient was a girl who was struck sharply on the inner side of the knee, and who developed signs of "locking" after effusion had gone down. Nothing could be felt at first, but later a small solid mass which could be moved by the fingers could be felt at the inner border of the joint under the capsule. When manipulated it disappeared. I opened the joint and found a flattened scale of bone covered with encrusting cartilage, and also the depression on the border of the cartilage of the femur, from which it obviously had been broken.

The specimen is on the table before you. It is, as you see, about the size of a sixpenny-bit and four times as thick. I cannot imagine such a chip being broken off the tibia and getting free into the joint, for it would lie under the semilunar cartilage. Moreover, the configuration of the upper surface of the tibia is such that mechanically it would be difficult. Again, the femur, being much broader than the tibia, would receive most of the blows in that region before the tibia could be touched.

RUPTURE OF LATERAL LIGAMENTS.

Very violent wrenches to the knee-joint may produce some most interesting lesions short of the classical fractures of femur, tibia, and patella. Thus extreme extension may stretch or actually rupture the lateral ligaments.

The symptoms are undue lateral mobility when the limb is fully extended, with great unsteadiness on walking, if not complete inability to use the limb when the pain and effusion into the joint have subsided. It is well known that in full extension there ought to be no trace of lateral movement in the knee. But with rupture of the lateral ligaments this lateral rigidity is gone, for the external crucial ligament cannot restrain the bones when the supports at the side are removed. But besides this, a certain amount of rotation is present of tibia and femur, which becomes more free than normal in slight flexion.

This is a very serious injury, and it is questionable whether any operative treatment is likely to be of use. Immobilisation of the limb in slight flexion is probably the best we can do, care being taken that the fixation is not too prolonged.

RUPTURE OF CRUCIAL AND PROBABLY OF LATERAL LIGAMENTS.

Another result of violent strain on the knee was once described to me so clearly by a patient who came home for advice from Africa as to remove any doubt as to its nature which I might otherwise have had.

CASE 3.—The patient was a mining engineer on the Rand, and was overwhelmed, when down a shaft, by falling earth and rock. According to his description, this fell upon his bent shoulders and thrust him forwards while his legs were pinned firmly. When he was rescued one of his legs was much distorted. The tibia was, according to him, dislocated backwards into the ham, and the femur projected far beyond it forwards. The whole lower leg became black and threatened gangrene. Amputation was urged upon the patient as the only means of saving life, but was absolutely declined at no matter what cost. The surgeons on the spot recognised a total dislocation of the tibia backwards, and were hopeless of saving the limb or life except by amputation. On the patient's refusal, a last attempt at reduction was made and was successful.

To me the most remarkable fact about this case was this, that when the patient consulted me some months later he could walk well, and the movements of the joint were free and fairly firm. His object in seeking advice was really to know whether he would be wise to undertake the same work again. I advised him to go to his home, in the South-West of England, for a few months, and to have sea-bathing, when I should be better able to judge. At the end of that time he was quite well, and quite fit to return to his position in the mines. This case impressed me much. From his description, and from what the surgeons who saw him after the accident told him, I think there can be no doubt that there was a complete dislocation of the tibia backwards, and pressure on the popliteal vessels. It is hard to suppose such a displacement without rupture of the crucial ligaments, and probably of the lateral as well. And yet the result of reduction was complete restoration of the movements of the articulation, and ultimately of a firm limb.

The possibility of union of these ligaments when the limb is brought into good position seemed to me to be proved by this result. Another case, however, suggested a doubt on this point. Curiously enough this patient, too, came for advice from the Rand mines in Africa and had received his injury much in the same way. I recorded the case at the time in full[1] and now give you a digest of the report.

FRACTURE OF TIBIAL SPINE OR DEGENERATIVE CHANGES?

CASE 4.—The patient was aged 30 and perfectly healthy. When in the mine a large, flat stone fell from a height of about 20 feet upon his back as he stooped, and rendered him unconscious. When he recovered his left knee was much swollen and very painful. Ice was applied, but the swelling did not subside for 12 days. At the end of that time the knee was flexed by a doctor forcibly, producing a snap in the joint and a feeling of faintness for some hours. He was then treated by rest for five weeks in a plaster-of-Paris splint. On its removal he tried to walk for a fortnight and had again a plaster case applied for five weeks. After that only a leather splint was worn.

Condition on examination.—On entering my room the patient walked with a stiff leg, wearing the splint. On its removal the first thing noticed was a lateral yielding of the knee and a tendency when weight was thrown upon it to assume a position of genu valgum. It was evident that the patient walked with great insecurity and a distinct snap could be heard as the knee bent inwards and forwards. There was some pain, but the chief complaint was of the total absence of any sense of security in walking on the leg and its tendency to give way suddenly inwards with the snap described, which was quite audible at the end of a long room.

On examining the limb by passive motion there was a large amount of lateral movement of the tibia on the femur in the sense of lateral flexion. Rotation, also, of the tibia on the femur was much freer than normal. Slight over-extension of the knee was also possible. Lateral displacement of the tibia on the femur was doubtful, and if present at all was only so to a very small extent. On the other hand, the tibia could be suddenly slipped back either by passive movement or the patient could throw it back by muscular action himself. When thus displaced he could not bring it forward again by the action of the muscles, but with his hand in the ham he could easily bring it into position in a moment, but not beyond the natural limits.

Traction produced no trace of separation between the surfaces of femur and tibia. There was some thickening of the synovial membrane and slight crackling on movement. It was thought, also, that there was some lipping of the cartilage at the borders of the tibia on the affected (left) side, not on the right. There were no symptoms of locomotor ataxy and no "locking" of the knee in any position.

On first seeing the patient I was inclined to think that the internal lateral ligament was stretched or torn, and that this would account for the inbending of the knee. But when the tibia was seen to slip back on the femur, the possibility of rupture of one or both of the crucial ligaments, or tearing off of the spine of the tibia at once suggested itself.

The fact that traction on the tibia produced no separation of the bones appeared to negative rupture of the lateral

[1] Clinical Society's Transactions, vol. xxix., p. 11.

ligaments, and it was difficult to account for the very remarkable slipping back of the tibia on the femur except by supposing that the control of the crucials had been lost either by rupture or by the spine of the tibia having been torn away with them. The increased power of rotation of the tibia on its long axis appeared also to favour the view that the lesion was in or about the crucial ligaments. The description of the accident, in which the knee was probably forcibly over-flexed, lent support to this view.

As to treatment of this case it was quite clear that immobilisation of the joint for just one year had been productive of no benefit, and further rest offered but little prospect of improvement. On the other hand, if the joint were opened and a lesion either of the crucial ligaments or of the spine of the tibia were found, it was problematical that any fixation of the ruptured tissues could be brought about. It seemed, however, possible that perhaps though I might not be able to suture the ligaments or pin down the spine of the tibia, after so long a period, still the opening of the joint and the mechanical irritation might provoke enough plastic exudation in the ligaments and capsule as to thicken them and perhaps lead to their shrinking somewhat and so giving more support to the joint. Should any greater stiffness result from faulty asepsis the limb would be more useful than in its present flail-like condition. After this was explained to the patient he was eager for operation.

Operation.—I performed it as follows. A transverse cut was made across the middle of the patella and it was sawn across. The capsule was divided in the same line as far as the lateral ligaments, which were left intact.

The knee was then flexed, and it was seen that there was very little osteo-arthritic "lipping" of the femur. The synovial membrane was everywhere hyperæmic and swollen, and its fringes were hypertrophied. The cartilage of the femur was striated, and over the outer condyle on its lower surface there was an area of erosion of the cartilage which was ragged, though the bone was not exposed. The anterior or external crucial ligament was intact. To obtain a more complete view of the joint a vertical cut was made downwards on each side from the ends of the transverse incision for an inch or two, and the resulting flap was turned down with the lower half of the patella.

The semilunar cartilages were now seen to be in their normal position. Round the outer side of the spine of the tibia there was an irregularity of the articular cartilage between the ends of the outer semilunar cartilage. From this a groove passed round the base of the spine of the tibia. This groove was large enough to take the end of a dissecting forceps or blunt periosteal elevator. When these were pressed into the groove they did not touch bone but rather soft tissue. The groove had all the appearance of having resulted from a horizontal fracture of the spine of the tibia with imperfect co-aptation of the broken surfaces.

With a blunt elevator I made a cautious attempt to move the fragment, and thought at one moment that it was not fixed. But this was uncertain. At all events, it seemed improbable that any good would result from pegging it, even if it were loose. One had to recognise that the derangements present could be produced by changes of measurement of only a millimetre or two. Nothing further was done except to wire the patella and stitch up the capsule first and then the skin. There was no drainage.

The wound healed perfectly under one dressing, and the limb was kept upon a splint for some weeks. The patient went on a visit to his friends five weeks after operation. I next saw him at my house three months later. He walked into the room with a good deal of stiffness, but stated that the limb was far more useful to him than before the operation, and that he was soon going back to his work in Africa. On manual examination I found the patella moveable and a certain amount of flexion possible. There were still some fulness about the knee and a little tenderness. The patient was well content with the result, which gave him a much firmer joint. He had not yet attempted to flex the knee actively, and I cautioned him against doing so for a long time to come, although I was able to bend it by passive movement. He promised to abstain from over-exertion.

In this case the alternative diagnoses considered before operation were either rupture of the external crucial ligament or tearing off of that part of the tibia into which the latter is inserted. The operation showed a groove round the base of the tibial spine, which may have represented the result of this fracture, but may have been due to degenerative changes in the cartilage, the result of rheumatoid disease. It also showed, I thought, that no efficient pegging-down of the fragment could be done after so long a lapse of time, though I believe this operation has since been performed in some fresh cases of the lesion.

A case was also shown at the Clinical Society by Mr. Stanley Boyd about the same time as this one in which the diagnosis was rupture of the external crucial ligament. The tibia in his case could be thrown both in front of and behind its normal axis. In my case it could only be jerked behind it, and when brought forward only came into its normal position.

I saw my case for the last time more than a year after operation. He walked well, and none of the abnormal movements observed were now present. Flexion was still somewhat limited, and I urged the patient still to abstain from forcing it. He was about to return to Africa, and was well contented with the result of the operation.

Besides the results of blows and strains of the knee-joint given above, you must remember that a blow may knock off a *rheumatic nodule*, which will then give all the symptoms of a loose body in the joint requiring removal by operation.

EFFUSION OF BLOOD.

Another cause of troublesome effects due to knocks and strains is the blood effusion which often follows them. This may be either into the cavity of the joint or into the tissues outside the synovial membrane.

From the first several different troubles may arise; the blood may clot and shrink into fibrinous masses and become rolled into pellets, playing henceforth the rôle of loose bodies and giving rise to the same symptoms until they are removed by operation. Doubtless, when the amount of blood is small the clots are broken up and absorbed in many cases. But these fibrinous masses are found when the blood is not absorbed.

Again, a large effusion may take place, remain unabsorbed, and cause irritation of the surfaces to an extent sufficient to produce plastic exudation. If this become organised the result is more or less fibrous ankylosis of the joint. This is clearly seen in a well-known preparation made by Volckmann. It was a case of simple transverse fracture of the patella treated on splints without any operation. Complete stiffness of the joint resulted, and the specimen was subsequently obtained. A frontal section through the joint shows an intimate union of the femur and tibia by firm fibrous tissue.

The reason why blood effused into one joint will produce distinct irritation of its surfaces and into another very little or none is not clear, and the various theories held in regard to the point would carry us too far to-day. But the fact remains. The removal of this blood is always indicated if it is seen to distend the joint, and this may be done with an aspirator, or in rare cases by an incision where the clots cannot be drawn off through the aspirator.

When blood is effused as the consequence of blow or strain into the tissue of and around the synovial sac, but not actually into the joint, it may also give rise to thickenings and rigidity of the membrane which cause a good deal of stiffness in movement.

Such patients are inclined to avoid all flexion and extension, or to keep the part fixed more or less in flexion. This is a serious matter if it be allowed to persist too long, especially in neurotic patients. There is considerable danger that the free play of the joint may be damaged unless passive movement and massage be begun fairly early and continued regularly.

These are the cases in which such remarkable results are obtained by forcible flexion and extension under an anæsthetic after all acute signs have passed off. They often bring much credit to the so-called "bone-setters," who announce that the joint "is out" and promise to put it in. What they really achieve is a breaking down of adhesions and restoration of movement. But you can do the same and ought to do so when you have sufficiently studied these conditions and are sure that you are not dealing with a latent tuberculous process which would be injured by forcible movements as I have seen after manipulation by a bone-setter.

HYSTERICAL AFFECTIONS OF THE KNEE.

It would lead me too far to-day to speak to you at any length of so-called hysterical affections of the knee which so often follow injury by strain or blow and which make up a very considerable proportion of the cases about which you are consulted. But you must always bear in mind that such cases are common and be on your guard.

I will mention one very remarkable case sent to me from a distance in July, 1910, to illustrate the need of great care in dealing with them and to what extent we may be deceived by them.

CASE 5.—The patient was an unmarried, healthy-looking woman, aged 27. When ten years old she had had her right foot accidentally trodden on and crushed, and it was some years before the hurt was healed. Since then she said she was unable to walk for 17 years—i.e., up to the date of admission. She underwent several operations, and was at last given up as hopeless. Some scars about the popliteal space suggest tenotomies.

Condition on examination.—The foot was pointed, the knee flexed to a right angle, and the thigh and hip were fixed in strong flexion and adduction. Nothing in the way of traction could alter the position of the limb either at the hip or knee, and the doctor who sent the patient to me referred to the condition as one of ankylosis of many years' standing—a view which, I believe, was endorsed by those who saw her first at hospital.

The history of not having walked for 17 years seemed to support the view, as did the facts that traction on the hip only produced lordosis, and traction on the knee caused no change in the attitude of the joint of right-angled flexion. It struck me, however, after one or two examinations that when one tried to extend the knee the hamstring muscles undoubtedly acted strongly, while an attempt at flexion was followed by a hardening of the extensors of the knee. As the joint was not tender there was no reason for this, and the patient's expression and whole demeanour suggested a highly neurotic person.

Examining further, I was convinced that there was no organic disease in hip or knee, and never had been; that the patient had been simply contracting both joints to avoid walking for reasons which appeared sufficient to a so-called hysterical woman. How she could have kept up this deception or self-deception for 17 years and undergone several operations on the limb is one of those mysteries about such cases which have yet to be explained.

Straightening of the limb under spinal anæsthesia.—The remedy appeared obvious: to give an anæsthetic and straighten the limb. But as I wanted the patient to see for herself that all the motions of hip and knee were perfect, and not only that, but to realise that all present in the operating theatre could vouch for her deception, I gave her spinal analgesia instead of a general anæsthetic. When sensation and motion were gone I took away the screen, and while she looked on carried both joints easily through all their normal movements, to her utter confusion. And not only this, but took hold of the foot which she had always complained of being exquisitely painful and stiff and forced it about in various directions, while she looked on in amazement and apparent chagrin. The limb was then kept extended on a splint, and the foot, which was, of course, atrophied by long years of disuse following the suppurative condition, had to be rubbed and gradually strengthened before it could be well used.

At the end of a fortnight she was walking about the ward with some stiffness, and the sole of the foot was not yet flat on the ground. But this was not to be wondered at considering the atrophic changes that could take place in all the structures of the part during 17 years. She got stronger and stronger every day and left the hospital just five weeks after the two "ankylosed" joints (!) had been proved to be quite sound, but still limping a little on the atrophied foot, as was to be expected.

The moral effect of seeing the three joints—hip, knee, and ankle—which she had been holding rigid for 17 years flexed and extended, and as regards the ankle, rather forcibly dealt with, was very great, and as she was witness to it herself there was no escape. A general anæsthetic would almost certainly have left her unconvinced. The publicity of our demonstration while she herself looked on brought conviction without a possibility of doubt.

HYPERSENSITIVENESS:

THE PARALLELISM IN THE PHENOMENA OF HYPERSENSITIVENESS AND CERTAIN CLINICAL MANIFESTATIONS OF OBSCURE NATURE.[1]

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TWO or three years ago I overheard your secretary put a question to a colleague of mine which interested me very much, and for the reason that the inquiry was one which for years had required a solution, and just at that date there was little known which could in any way provide a solution. Dr. C. H. Hall raised the question, "Why it was that a healthy woman recently confined suddenly became comatose, and as quickly recovered completely?" I need not give you reasons why this unanswered question should have remained in my mind to the present moment, but the incident recurred to me when the same interrogator asked me if I would address you on the present occasion. It seems to me that a good reason why a teacher of medicine should undertake to address a number of practitioners like yourselves may well be that there is the necessity to place before you new facts and theories which since your own student days have come to the front to explain those hiatuses in medical knowledge which every medical man has to face when he settles down to the calls of general practice. The episode already referred to is a case in point.

Before attempting to give an answer to the problem raised, and other problems of kindred obscurity and importance, certain spade-work must be carried out by an attempt on my part to put before you certain new conceptions. Those conceptions have been attained to by the carrying out of animal experiments.

What is Hypersensitiveness?

The term "hypersensitiveness" is chosen with the distinct intention of endeavouring to avoid too technical language. It expresses in English a condition in which an animal is made more sensitive, rather than less sensitive, to the effects of certain poisons. Though the effects of a first injection may be *nil* or very small, those of a second may be severe, and always are characteristic.

It is interesting to note how the phenomena of hypersensitiveness came under observation. When this address is finished if any of you would recall the earlier experiments from which so much that is of importance to you, as I hope to show, has had its birth, I think you will admit, if ever you hesitated, that it is essential for advance in medicine that as a nation we must make provision for more research even though many of the objects of research appear to have little practical bearing.

It will provoke a smile when I tell you that the whole of this address has as its inspiration some of the countless investigations which have followed a simple observation made by Richet and Portier nine years ago, that if a preparation made by powdering up the tentacles of a sea anenome is injected on two occasions into a dog the second injection is followed by a group of symptoms which are familiar to every medical man—dyspnœa, vomiting, blood-stained evacuations, collapse, and death. The condition of the animal which rendered possible the occurrence of such symptoms was spoken of by Richet and Portier as anaphylaxis; to-night we use the term hypersensitiveness instead, which is more homely and a good deal in use amongst English and American writers. In fairness to other workers, it must be at once stated that some of the observations made by these two workers had been anticipated by v. Majendie, Flexner, v. Behring, Knorr, Kitashima, and others, but to Richet and Portier is due the crystallisation of the theory of hypersensitiveness.

The Expansion of Richet and Portier's Observations.

At first sight nothing could appear more alien to a consideration and explanation of the symptomatology of disease in man than this brief description of Richet and Portier's

[1] A paper read before the Watford Medical Society on Nov. 17th, 1911.

experiments. In the first place, the hypersensitiveness developed in the dog was produced by the introduction of derivatives of quite a different form of life; secondly, the route of introduction was one which can hardly occur in human pathology except as a result of trauma—a factor which has a somewhat limited application in medical disorders. Richet introduced the foreign substance by a route other than the alimentary canal.

These two points have, however, attracted the attention of Richet and Portier and numerous other workers, and the net result to-day is that it may be said that symptoms of hypersensitiveness may be produced whenever certain proteins derived from the vegetable kingdom are introduced into the body of an animal; or when proteins derived from one animal are introduced into another animal of different species. It will be subsequently seen that the field has been enlarged, and in a most important way so far as human pathology is concerned, for the organs of an animal have been shown to provoke the phenomena of hypersensitiveness when injected into the same animal. The results are more likely to follow if the protein is introduced by a route other than the intestinal one—e.g., through the veins, into the cellular tissues, or into serous cavities such as the peritoneum or upon mucous surfaces such as those of the nose and eye, or even into the heart.

To attempt to put before you the stages of those experimental inquiries would be impossible in this address; already one writer is able to give the number of papers bearing on the subject as 422. No doubt, however, there are many amongst you who will have noted that already there is some reason to feel that Richet and Portier's experiment, after all, has something to do with the explanation of some of the phenomena met with in practice in view of the expansion of their ideas and observations. Are you not already familiar with the various manifestations which occur after the use of anti-diphtheritic serum?—the joint pains, the fever, the rashes, and general disturbances which occur some 11 or 12 days after the injection. It is true that these phenomena occur after but *one* injection of serum in only a small proportion of the cases; but when it is remembered that similar and more intense symptoms may occur, and more frequently, after a second injection of the serum, then you will realise still more readily that the subject of the hypersensitiveness is of importance to you.

The Symptomatology of Hypersensitiveness.

The first purpose of this address is to put before you the various symptoms produced experimentally in animals when hypersensitiveness is induced; also to detail those symptoms which investigations have shown to occur when hypersensitiveness is induced in man as a result of the neo-therapy by means of vaccines, sera, &c., and then to ask you to recall certain symptoms present in familiar maladies, the nature of which is a perfect enigma even in these days of investigation, and to see whether it is not possible for us by a comparison of the known with the unknown to reasonably speculate as to the true nature of the latter.

"*Hypersensitive*" *Symptoms: (a) In Dogs.*

The animal will show a curious exaltation: it will become restless and tug at its chain within 30 seconds of the second injection of horse or ox serum; there will be prompt efforts at vomiting, the urine and stools will be voided, and in a short time the animal will become quiet; it will become so weak as to be unable to stand; it falls about, eventually appears to be paralysed, and lies with outstretched legs breathing quietly. Dyspnœa, however, is never noticed. The corneal reflexes persist. By touching the animal or stimulating the skin reaction will occur. The paralytic stage—although often disturbed by powerful efforts at expiration, by vomiting and evacuation of stools—is marked by general depression, muscular weakness, and strange to say, by complete anuria. The animal may succumb after several hours or quickly recover and the next day be no worse for the stormy experiences above related. Sudden death is never noticed following immediately on the re-injection.

Even more remarkable results are found if observations are made on the blood pressure during the condition of hypersensitiveness. A decided fall occurs, and with this fall there is a remarkable increase of the pulse-rate and the development of a small pulse. You will recall that a blood pressure trace shows in a normal animal considerable fluctuations in the pressure curve determined by the respiration, but in the condition of hypersensitiveness such influence is gradually lost. With the recovery of the animal in some hours the respiratory influence on the pressure trace is restored to normal. Of all the above symptoms, one of the most reliable manifestations of hypersensitiveness, even when its degree is slight, is this fall of pressure.

It has been shown that this remarkable phenomenon is dependent upon vaso-dilatation, particularly of the splanchnic area, and possibly this is the explanation of the hyperæmia and congestion of the abdominal viscera which is associated with increase of the intestinal peristalsis and the evacuation of liquid stools. Lest the fashion of former physiological teaching should indicate that this is due to central disturbance of the nervous system, it is necessary to point out that really it is due to peripheral vasomotor paralysis, for adrenalin—which operates on the neuro-muscular junction—when subsequently injected is incapable of producing the familiar rise of pressure which it ordinarily brings about.

Other remarkable changes are those found in the blood—a great reduction of the coagulability of the blood and an extraordinary reduction of the leucocytes, the polymorphonuclear cells almost disappearing.

(*b*) *Guinea-pigs and Rabbits.*

Guinea-pigs show most remarkably all the above symptoms, but owing to special anatomical features of the animal it is much less easy than in the above experiments to inject by the venous route. Injections in these animals are made, as a rule, into the peritoneal cavity, and the effects are more slowly and gradually developed.

It has been possible at the hands of only some workers by intravenous injection to produce in the guinea-pig hypersensitiveness ending after a long interval in death, as in the dog. After intravenous injections the guinea-pig as a rule manifests immediate symptoms much more quickly, and we meet with sudden dyspnœa as a sign of excitation. Cramp of various groups of muscles suddenly develops—e.g., in the muscles of the chest, in the diaphragm, and in the respiratory abdominal muscles. In a short time all respiratory movements are cramp-like, and the animal dies cyanosed. A still more peculiar occurrence in the guinea-pig is the immediate rise of blood pressure, not a fall as in the dog, which soon, however, with impending death falls to nothing. The temperature in fatal cases falls, but not very much below the normal level.

The post-mortem examination of these guinea-pigs shows extreme emphysema dependent upon expansion of the alveoli, and the large and small bronchi are strongly contracted, the mucosa being plicated; this latter phenomenon has been shown to be due to cramp of the bronchial muscles. No doubt death is largely due, therefore, to asphyxiation.

If the second injection of serum is made by the intraperitoneal or subcutaneous route, the guinea-pig will still show great restlessness and terror; the urine and fæces will be evacuated, and there is developed a sort of pruritus, occasioning scratching of the skin. Dyspnœa eventually develops, and great depression, and even Cheyne-Stokes breathing, has been noted. Owing to the slower course of the hypersensitiveness in intraperitoneal injections it is possible to make more protracted observation on the temperature, and this is found to fall very considerably. Emphysema is not so exquisitely developed in these conditions. The blood pressure also constantly falls instead of rising at first. Death in such cases is not so much due to asphyxia as to the fall of blood pressure. Paralysis and coma are met with in the cases which end fatally. If the second injection is made under the skin, there may be local necrosis and hæmorrhage at the site of the first injection. A still more remarkable effect is the reduction of complement, a biological agent which abounds in this animal normally. Leucopenia and diminution of the coagulability of the blood are met with in these animals just as in dogs.

The rabbit shows similar reaction, but to a much less degree. Injections of emulsions of the organs such as the liver, kidney, spleen, &c., produce identical results if they are used instead of serum.

(*c*) *In Man.*

So far our knowledge of the symptomatology of hypersensitiveness in man is confined to the results of injections of normal or antitoxic serum when introduced subcutaneously or intravenously. Symptoms develop after a single injection

in about 6·45 per cent. of all the cases, and this group of symptoms is the expression of what is known as the "serum disease." It is not at present quite clear why there should be this natural hypersensitiveness; but it has been noted that certain asthmatic patients are rather more inclined to suffer after the injection of serum than are those free from this symptom-complex. If a second dose of serum be given a few days later (say about 10 days) then symptoms occur which are readily perceived to be due to hypersensitiveness brought about by the earlier injection.

CHART 1.

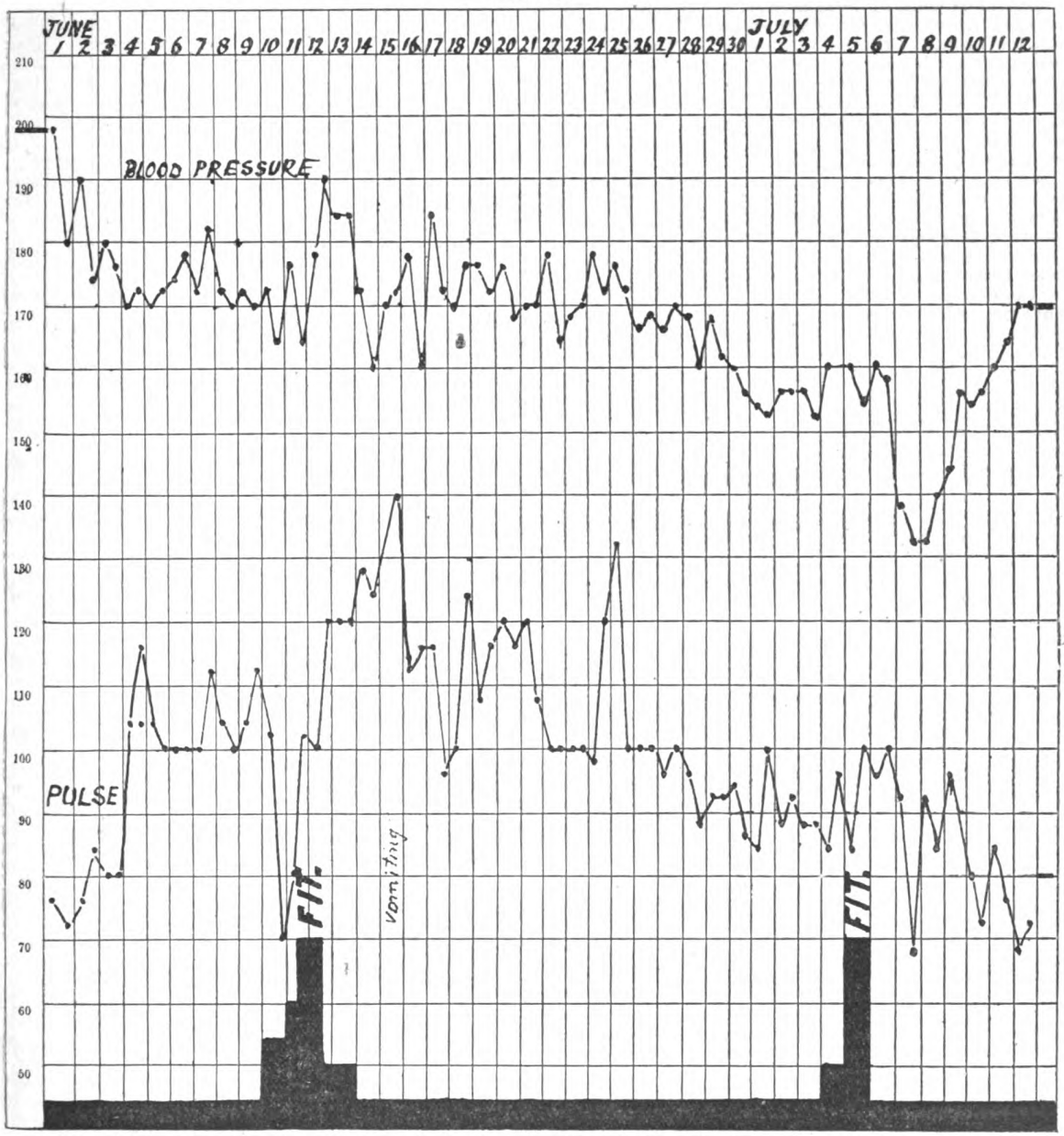


Chart of blood pressure and pulse-rate, showing two attacks of loss of consciousness. Blood pressure in millimetres of mercury.

Symptoms of the "Serum-Disease"—i.e., Symptoms following a First Injection of Serum.

These symptoms are already familiar to you. As a rule, they develop within 7–12 days after the first injection, the time depending upon the individual and upon the mass or concentration of the dose of serum. The occurrence of the symptoms has been reduced to the low figure of 6·45 per cent. by using smaller volumes of serum of a higher value than when anti-diphtheritic serum was first introduced. It is important to realise that these signs do not arise at once; there is a pre-hypersensitive period—i.e., an interval of incubation during which subtle changes are taking place within the body.

Swelling takes place at the site of the injection which is suggestive of urticaria; there is also irritation at the site of injection, and the associated lymphatic glands swell. The rash spreads and may involve the whole body and may assume the character of measles or scarlet fever, or may even be polymorphous. When general symptoms arise, all the lymphatic glands may be enlarged and may be tender.

In only 1·9 per cent. of the cases joint symptoms occur, and it has been surmised that the changes in the joints are of the same order as the skin changes. Œdema of the face may occur and may affect other parts of the body, even the glottis. Albuminuria occurs too, but is rare. Diarrhœa and diffuse bronchitis are also met with. During the incubation period, the leucocytes increase very much, and this increase

is followed by a leucopenia in which the polymorphonuclear cells are diminished. There is a rise of temperature which may last through a fortnight, but general symptoms are not marked. Complete disappearance of symptoms is the rule.

Symptoms following a Second Injection of Serum.

There is considerable variation in the symptomatology of a second injection of serum in man which depends to some extent upon the interval which elapses between the two injections.

(*a*) *The immediate effects.*—The second injection produces changes at the site of the first injection, and especially important is œdema; local necrosis is not known. There may be a rise of temperature and swelling of adjacent glands in a few hours. Urticaria with extreme irritability of the skin may be a feature. Œdema of the face occurs without albuminuria, and there is a marked leucopenia. Only very rarely is there collapse as a result of the injection. Local symptoms are more marked in children, general in adults. General symptoms usually subside in 24 hours, and local ones within two to five days.

(*b*) *The deferred or delayed effects.*—The most characteristic features develop when the second injection takes place between the forty-fifth and 180th day after the first injection. They show themselves on the fifth to seventh day after the second injection—a circumstance which should be noted because it is much shorter than the incubation period for the development of symptoms after the first injection. The symptoms of hypersensitiveness are much more marked, develop with greater rapidity, and subside also more quickly.

If the second injection takes place within six days of the first one no symptoms of hypersensitiveness occur at all. Between the twelfth and fortieth day there may be immediate effects, but no delayed ones. If the second injection takes place after the 180th day then no immediate reactions occur, but delayed ones may occur.

Analysis of the Symptoms Met with in the Condition of Hypersensitiveness.

Respiratory system.—Tachypnœa, attacks of spasmodic or irregular breathing, Cheyne-Stokes breathing, bronchitis, spasm of the bronchioles, emphysema, œdema of the lung.

Muscular system.—Spasm of certain groups, tonic or clonic, especially of those concerned in respiration. Paralysis or weakness of all muscles. Relaxation of sphincters.

Digestive tract.—Vomiting. Blood-stained, loose, and frequent stools. Increase of intestinal peristalsis.

Urinary system.—Anuria, albuminuria.

Circulatory system.—Generally marked fall of blood pressure (in guinea-pigs according to circumstances a brief rise); collapse and death (vaso-motor paresis). Frequency of pulse increased and volume reduced.

Nervous system.—Excitation. Depression. Fits, paralysis, and coma.

Cutaneous system.—Pruritus, local necrosis, and hæmorrhage (at site of injection). Localised and general œdema (without albuminuria). Morbilliform, scarlatiniform, erythematous, or polymorphous rashes. Œdema of the glottis (akin to œdema of the skin).

Blood.—Diminution of coagulability. Leucocytosis. Leucopenia. Reduction of complement.

Temperature.—Rise or fall (apparently in part due to effect of "mass dose").

Joints.—Symptoms of pains, &c.

Post-mortem investigations.—Emphysema with dilatation of alveoli. Spasm of bronchial muscles with plication of mucous membranes. Congestion of abdominal viscera, hæmorrhagic stools.

Issue.—Recovery. Death. Liability to recurrences with repetition of injection. Increase, not decrease, of sensitiveness by repetition of injection.

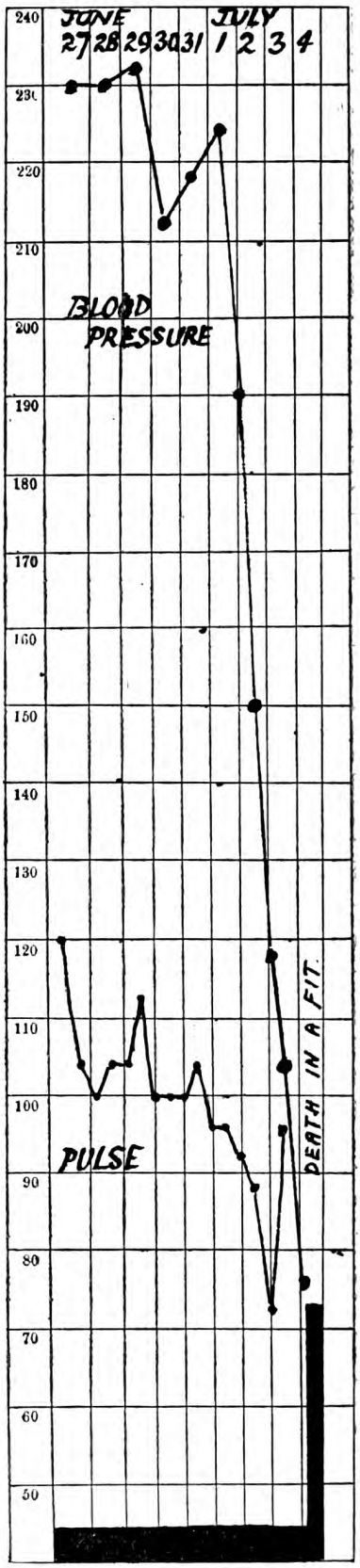
Parallel Clinical Phenomena.

We now come to considerations of parallel phenomena occurring clinically, but yet not apparently due to the introduction of protein matter intravenously or subcutaneously, or by any known route. I am going to ask you to fall back upon your clinical experiences to recall phenomena which have puzzled you and even alarmed you. You have been quite unable to explain them, and this ignorance has brought in its wake a feeling of insecurity, for you are not able to foresee their occurrence or recurrence, nor are you able to deal with them satisfactorily.

Disorders of Respiration.

The phenomena of so-called *asthma* are only too well known to any practitioner. Asthma may depend upon nasa disorders (for example, nasal polypi), upon disease of the heart (e.g., on mitral stenosis), upon renal disease, and, finally, there is a group of asthma cases which are attributable to spasm of the bronchial muscles. The mechanism by which each of these primary disorders is brought about remains a puzzle. Hay fever or the pollen disease alone has received an explanation which possesses anything like definition; the

CHART 2.



Blood pressure and pulse-rate chart, showing great fall in blood pressure preceding death in a fit.

remaining forms are unexplained or the explanations given are unsatisfactory.

Emphysema is recognised as dependent upon a variety of causes, but excluding those which appear to depend upon laborious muscular work, athleticism, the blowing of wind instruments, little has been done to explain cases in which none of these factors come into play, and they are very numerous.

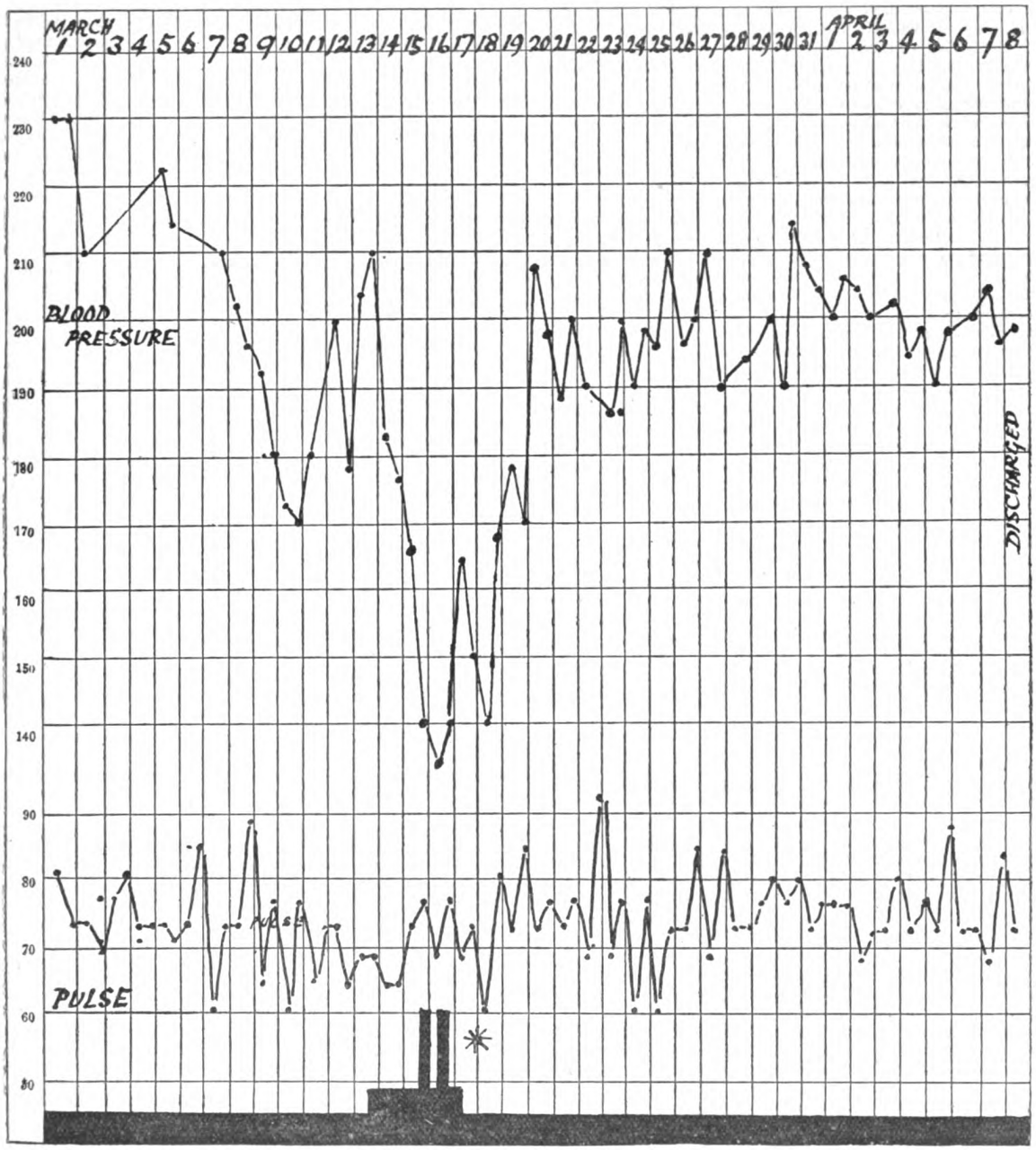
Œdema of the lung independent of infection or of the effect of irritating vapours as ether, is a common occurrence, met with in a large group of maladies, but in none so puzzling as in Bright's disease, especially in those cases in which œdema of other parts of the body is non-existent. It is possible that these manifestations are all the expressions of the existence of hypersensitiveness.

Disorders of the Nervous System, including Disturbance of the Circulatory, Muscular, and Digestive Systems.

Here, again, clinical difficulties are numerous in the extreme. Nothing can be more dramatic than the occurrence of idiopathic epilepsy. In the rehearsal of the symptoms of hypersensitiveness all must be impressed with the parallelism which many of them display with the phenomena of epilepsy. There are the initial terror and excitement of the animal, the development of actual fits, and the supervention of a sort of post-epileptic state—muscular paralysis, relaxation of sphincters, torpor, coma, and even death.

In the accompanying chart (Chart 1) there are shown observations of the blood pressure and pulse-rate of a man who had had several attacks of loss of consciousness. Fortunately, one occurred whilst in the hospital, so that close observation could be made.

CHART 3.



Blood pressure and pulse-rate chart. Two attacks o loss of consciousness represented at ✱.

The patient had had a fairly uniform high blood pressure and a perfectly normal pulse-rate up to June 1st, 1911. On and after July 12th his pressure remained uniformly still high, but at a lower level than on June 1st. Between these dates the blood pressure showed a general subsidence from a high to a less high pressure, but on July 7th, 8th, and

9th it fell to almost normal. The pulse-rate was still more remarkable in its change; for between June 1st and July 12th it rose to considerable heights, maximum 140, and was normal before and after this period.

About June 10th and July 5th he had two fits which were epileptic; he lost consciousness, had convulsions, voided stools and urine, bit his tongue, and showed post-epileptic conditions such as drowsiness. Both fits were ushered in by periods of mental instability, such as getting out of bed at odd times and walking about the wards without any reason. That he had renal disease and symptoms of tabo-paresis only helps to a small extent, because we do not know for certain how epileptic seizures which occur in these maladies are brought about, though the possible influence of choline, a derivative of nerve tissue, in the production of the seizures of general paralysis, as shown by Professor W. D. Halliburton and Dr. F. W. Mott, must be borne in mind. What we must note is that these remarkable seizures were accompanied by obvious increase of pulse-rate, and a fall of blood pressure occurred a little later than the second fit. We have seen that both these phenomena are accepted as characteristic signs in conditions of hypersensitiveness.

In cases of hypersensitiveness it is well known that a fall of blood pressure is a frequent picture in the last few hours of life. (See Chart 2.) It will be seen that there had been a great increase of pulse-rate, which had given place to slowing, and this again was followed by an increase of rate until no doubt they become so small as to be uncountable.

Striking as such pictures are, their significance is still further accentuated when we know that this patient for the last seven days of life was afflicted with diarrhœa—another feature in experimental hypersensitiveness.

Chart 3 affords still another possible example of hypersensitiveness in disease. The extraordinary fall of pressure which occurred on March 16th was accompanied by two attacks of loss of consciousness. The pulse-rate in this case showed little or no change, and, as the chart indicates, there was recovery.

Elsewhere[2] I have published results of experiments and observations which show that hypertension may be a result of the escape of kidney substance into the circulation. I may leave it to you to pass a verdict on the plausibleness of such a possibility in view of the phenomena exhibited by the patients whose blood-pressure charts have been shown to you to-day. I think it is quite possible that the experiments on hypersensitiveness give confirmation to such a view.

Cutaneous System.

To entrench upon the difficult problems of dermatology is more than could be allowed on this present occasion: but it is very much to the point to ask why it is that certain skin rashes occur and recur.

A familiar clinical picture is met with in angio-neurotic œdema. This is a common enough picture in the young, and is accompanied by fever, so that the unwary are caught and incise the area of œdema, thinking they have to do with suppuration. We have all seen such mistakes, and indeed they constitute one of the pitfalls of our days as "dresser for the week." I have seen operations done for patches of œdema in which the orbital tissue, even the tissues of the groin and scrotum, were laid open for the relief of what was supposed to be respectively cellulitis or a strangulated hernia. Rarely it happens that the œdema occurs in the mouth and tongue and even in the glottis, thereby jeopardising life. The reason for the occurrence and recurrence of this manifestation is unknown to us.

Again the reason for the development of the rashes of the acute exanthemata presents a great difficulty, no less than the explanation of the incubation periods, or as we might say the pre-hypersensitive period, which shows a remarkable parallelism in point of duration with the period which elapses after an injection of protein before the symptoms of hypersensitiveness develop. We can further hardly but wonder at the parallelism between these rashes and those of scarlatiniform, morbilliform, and polymorphous rashes met with in the "serum disease."

It is also a familiar fact that in certain cases of diffuse dermatitis such as pityriasis rubra suppression of urine closes the scene. Quite remarkable is a case I have recently shown before the Clinical Section of the Royal Society of Medicine of recurrence of asthma in a girl who also suffered from nasal polypi. With each attack of asthma, and at no other time, she had diffuse erythema of the limbs and body; the asthma and the rash no longer occurred if the polypi were removed; with their recurrence both asthma and rash recurred. Possibly either the substance of the polypi or the organisms resident upon or in them have created influences akin to those of hypersensitiveness.

Temperature.

Though rises and falls of temperature are met with in attacks of hypersensitiveness, I would especially call your attention to the fall in the accompanying chart. You will see what I believe is a possible example of hypersensitiveness brought about by vaccination. I am indebted to Dr. M. J. Rowlands for the opportunity of showing the chart. (Chart 4.)

The patient was aged 23. He suffered from pleuro-pneumonia, and the expectoration was loaded with streptococci. Four days had elapsed and there was no amelioration of symptoms. He was injected with an anti-vaccine, and, as the chart shows, by the end of 24 hours his temperature was normal, and his pulse-rate, from always being over 100, fell to the eighties. On the evening of the sixth day—i.e., 24 hours after his temperature had reached normal—it had risen to its former level. On the eighth day he was again vaccinated, and his temperature and pulse again reached normal within 24 hours and remained normal.

It is no purpose of this address to enter on the vexed question of the value of vaccination, but it appears to me that this was an ordinary case of pleuro-pneumonia, resolving on the eighth day, and that the first fall after vaccination may just as well have been a response to agencies of hypersensitiveness as to those of immunity. The patient before the first injection was charged with the products of disintegrated streptococci. Simply because he received a dose of the same material by vaccination he may be considered to have developed a condition of hypersensitiveness, and his temperature fell as a consequence. I think it is quite possible that the improvement in the temperature chart was merely an example of the working of the mechanism of hypersensitiveness, a view already enunciated by Dr. F. W. Andrewes in his Croonian lectures[3] as a result of his observations on leucopenia as a result of vaccination. It was but temporary: the next dose again restored the temperature to normal, and this was permanent and as likely as not was due to the chance synchronism of the second vaccination with the period of involution of the pleuro-pneumonic attack.

Urinary System.—The Blood.

We have seen that in animals hypersensitiveness may be accompanied by anuria and by albuminuria. The study of renal diseases shows frequently that the final stages are accompanied by scantiness and even suppression of urine with a relative increase of albumin. In certain cases this is due simply to accompanying diarrhœa and vomiting, but in others no such symptoms occur. The occurrence even of diarrhœa and vomiting in uræmia also provokes an inquiry whether they are symptoms of hypersensitiveness.

I am not able to offer you examples showing the alteration of the leucocytes or the fall of complement in cases occurring at the bedside, but I would refer you to Dr. Andrewes's observations on leucopenia in vaccination mentioned above.

Correlation of the above Clinical Symptoms with Phenomena of Hypersensitiveness.

I now come to the part of my task which is most difficult. So comparatively new is the subject of hypersensitiveness as a possible explanation of bedside symptoms, and so scanty are the clinical investigations which support the idea, that at present it is little more than an ingenious surmise to say that the mechanism of hypersensitiveness has anything to do with the various clinical manifestations above cited.

Returning to the opening remarks of this address, it will be remembered that hypersensitiveness has been demonstrated experimentally by the introduction of proteins of animal (or vegetable) origin into the body of an animal, other than the animal from which such proteins were derived, by a route other than the alimentary tract. How could it be argued that symptoms occurring in man could ever be dependent upon such circumstances? In the case of bacterial proteins the task is easy, and already there are several papers calling attention to the possible explanations

[2] THE LANCET, 1906, vol. i., pp. 1295, 1375, 1455.

[3] THE LANCET, vol. i., 1911, p. 1737; vol. ii., pp. 8, 83, 153.

of the recrudescences, &c., of the temperature in pneumonia and typhoid fever, of the incubation periods of the acute exanthemata and the development of their respective rashes, by a reference to the theory of hypersensitiveness.

Is there any justification for thinking that clinical manifestations which are independent of infection could possibly be due to the same mechanism? Attention must be called to the well-known existence of sclerosis of certain organs such as the liver, kidney, and brain. The parenchyma of these organs has disappeared and been replaced by fibrous tissues; the dislocated tissues may readily reach the vascular system.

It is therefore possible that subjects who suffer from these disorders, in which sclerosis and loss of parenchyma are features, have been rendered hypersensitive to their own organs.

But the objection may be raised that so far as animal experiments have been detailed to you, none have been concerned with the production of hypersensitiveness of an animal to its own organs. Fortunately, however, such experiments have been made, and with positive results. On the high authority of Uhlenhuth, characteristic symptoms of hypersensitiveness are developed when an animal, the guinea-pig, after the intravenous injection of an emulsion of one of its own lenses, is three weeks later injected with an emulsion of its remaining lens. V. Dungern and Dunbar, Gräfenberg and Thies have shown the same thing by the injection of an animal's own spermatozoa.

These experiments then give great support to the view that in clinical medicine certain unexplained phenomena may after all be due to the mechanism of hypersensitiveness. It may be that asthma, epileptic seizures (for example, those found to follow upon infantile hemiplegia), the coma met with in cirrhosis of the liver and granular kidney, "uræmic" palsies, "uræmic" fits, "uræmic" diarrhœa and vomiting, various forms of local or general œdema occurring independently of albuminuria and kidney disease or other ordinarily accepted cause, the convulsive seizures of general paralysis, eclamptic convulsions or the coma met with by your secretary occurring just after confinement in a woman otherwise apparently quite healthy, may all be examples of hypersensitiveness.

It has been found that if an animal is injected with the serum of an eclamptic woman, and two days later is injected with amniotic fluid, "hypersensitive" phenomena develop. They do not do so in a guinea-pig not previously injected with eclamptic serum. From which it may be concluded that possibly an eclamptic woman is really suffering from absorption of amniotic fluid; her serum develops changes as a result, and such changed conditions are communicated to the animal into which such serum is injected; it becomes "passively" hypersensitive, so that on injection of amniotic fluid the phenomena of hypersensitiveness are revealed.

Recurrent œdema of the lungs independent of an infection, even emphysema itself not dependent upon excessive muscular exercise, recurrent hemi- and monoplegia, which are entirely recovered from, and which can be traced to no known cause, the excitation and depression which are such marked features in insanity, pruritus, and the many unexplained skin manifestations such as urticaria, also may be due to hypersensitiveness. The proteins responsible for the production of these phenomena may be derived from the individual so afflicted.

This list of clinical manifestations may appear to you as an ambitious one. The dissatisfaction we all feel when asked to give an explanation of them, however, in terms of pathological principles which have been accepted in the past, must be the excuse for my offering to you explanations based upon newer theories. If the proof is meagre at present, yet the impetus given to clinical study is one which promises much for the future. For further information—indeed, for the sources of all the theoretical considerations put before you this evening—I would refer you to an address by Dr. W. D'Este Emery on Anaphylaxis,[4] and to two luminous and suggestive articles by Dr. Friedberger,[5] whose views I have described.[6] For further references I mention monographs by Pfeiffer,[7] Moro,[8] and Besredka and Biedl and Kraus.[9]

CHART 4.

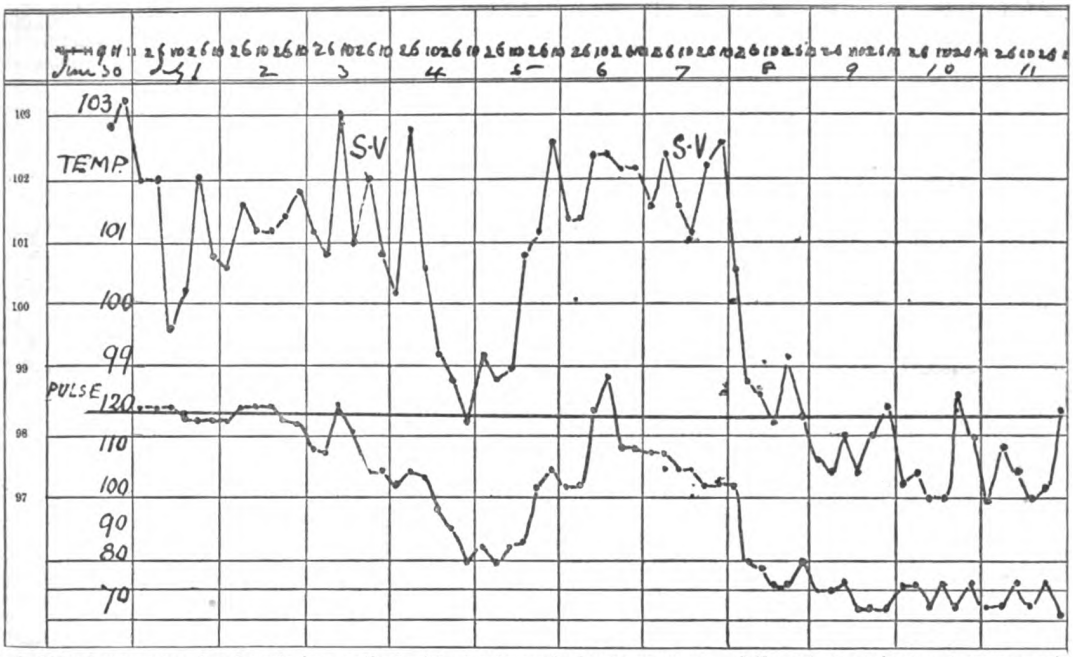


Chart of blood pressure and pulse-rate in a patient with streptococcal pleuro-pneumonia. S.V. marks the injection of strepto-vaccine.

[4] Brit. Med. Jour., Nov. 4th, 1911, p. 1178.
[5] Münchener Medizinische Wochenschrift, Nos. 50 and 51, 1910.
[6] The Practitioner, December, 1910.
[7] Das Problem der Eiweissanaphylaxie, by Dr. Hermann Pfeiffer, Jena, 1910.
[8] Experimentelle und klinische Ueberempfindlichkeit, by Dr. Ernest Moro, Wiesbaden, 1910.
[9] The articles by Besredka and by Biedl and Kraus in Kraus and Levaditi's Handbuch der Immunitätsforschung, Jena, 1911.

Harley-street, W.

NATIONAL HOSPITAL FOR THE PARALYSED AND EPILEPTIC.—The annual meeting of this institution will be held at Devonshire House, Piccadilly, on March 29th at 3.30 P.M. The Duchess of Albany has signified her intention of being present, and Earl Curzon of Kedleston has promised to make an appeal on behalf of the financial needs of the hospital.

THE BED ISOLATION OF CASES OF INFECTIOUS DISEASE.

BY C. RUNDLE, M.D. LOND.,
MEDICAL SUPERINTENDENT, CITY HOSPITAL, FAZAKERLEY, LIVERPOOL;
AND
A. H. G. BURTON, M.D. LOND.,
SENIOR RESIDENT MEDICAL OFFICER, CITY HOSPITAL, FAZAKERLEY, LIVERPOOL.

IT is the practice to admit to the Fazakerley City Hospital patients suffering from the infectious illnesses commonly admitted to hospitals of this character. In addition to scarlet fever, diphtheria, and typhoid fever, there are during the greater part of the year under treatment at one time cases of erysipelas, puerperal fever, measles, chicken-pox, and infantile diarrhœa. To these may be added a variety of conditions admitted under a mistaken diagnosis, the nature of which will be familiar to those who have been responsible for the administration of large fever hospitals. In addition, 60 beds are set aside for the sanatorium treatment of consumptives. There is in all accommodation for 520 patients.

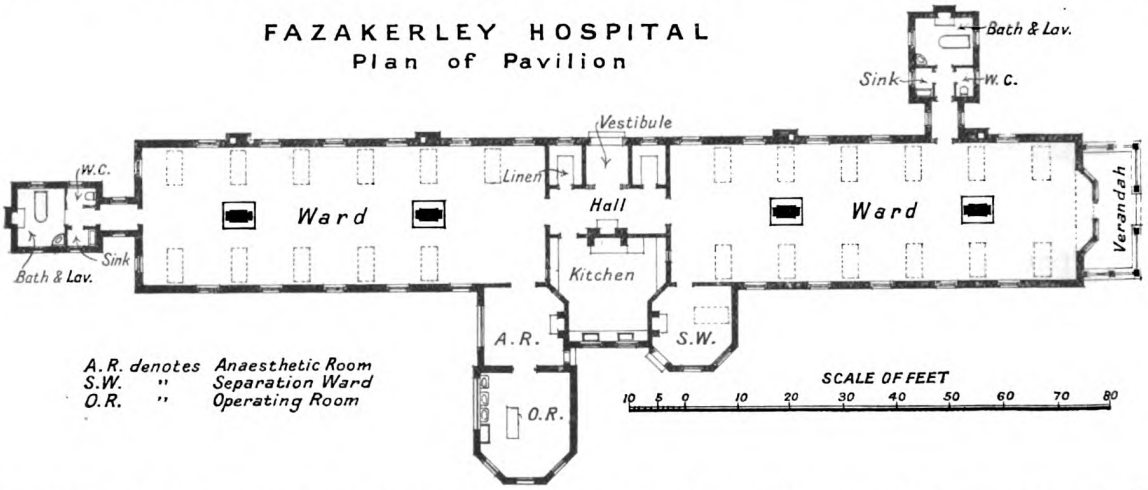
The requirements of modern methods of nursing, the separation of acute patients from those more convalescent, the isolation of those suffering from septic complications, and the large proportion of patients admitted under the heading of "Other Diseases," make it impossible to reserve to each variety of infection a pavilion for the purpose of that infection only, the structural and administrative cost would be obviously prohibitive. As an alternative to a strict limitation of the number of diseases admitted for treatment, with a corresponding restriction in the utility of the hospital, the following systems have been practised in various institutions whereby patients suffering from different infections may be brought administratively under the control of a limited number of nurses: (1) Treatment in separate rooms opening on to a common duty room—i.e., the system of isolation nests; (2) the glass cubicle system; and (3) the system of bed isolation whereby patients suffering from different infectious diseases are treated in the same ward under the same nurses, measures of strict asepsis alone being relied upon for the prevention of cross infection. The results obtained from a somewhat extensive trial of this last system made during the years 1910 and 1911 at the City Hospital, Fazakerley, form the subject of this paper.

The necessary administrative and economic disadvantages attached to the system of isolation by separate wards need not be noticed here; structural changes in many directions have been made with a view of minimising these difficulties, and the glass cubicle system may be regarded as the most recent attempt to provide a physical obstacle to the transmission of infections at a reasonable administrative cost. This method, although of great value, has limitations (apart from initial cost of construction), which have been readily admitted by those who have had experience of its use, and the object of the investigation made at this hospital has been to show whether nursing on lines of strict surgical asepsis might safely take the place of the structural methods hitherto adopted.

The principles of the bed isolation of cases of infectious disease have been observed for a number of years under the system of "barrier" isolation, but the practice of this system has been reserved in the majority of instances for the separation of different types of the same disease. By this method, for example, septic types of scarlet fever have been effectively isolated from types of a less severe character, and children have been separated from their fellows during the incubation period of a secondary infectious disease to which they have been exposed. No investigations have hitherto been made on a scale sufficiently extensive to be of value to suggest how far these same principles might be safely utilised in the separation of patients suffering from a variety of different specific infectious diseases.

The ward pavilion used for the purpose of this work has male and female wards separated by an entrance hall, kitchen, pantry, and linen cupboard (see figure). The female ward has a roofed verandah at the south end, the sanitary offices being placed at the side, while the male ward has its lavatory accommodation at the extreme north end. The beds are arranged on the ordinary plan with a window between each bed. The air-space in cubic feet per patient is 2100. Opening out of each ward of the pavilion is a small observation ward with an inspection window to each from the kitchen; that on the female side is of the usual type accommodating one bed and a cot and has an outside door. On the male side the isolation ward has been converted into an anæsthetic room; it holds one bed and opens into a large and well-appointed operating theatre. The remaining appointments of the ward require no further description, being of the usual type found in isolation hospitals.

FAZAKERLEY HOSPITAL
Plan of Pavilion



The diseases which are admitted to the ward are as follows: (1) All cases of puerperal fever and erysipelas, and most cases of pertussis, rubella, and varicella; (2) all cases notified as suffering from an infectious disease, but found on admission to have no infectious condition; (3) cases in which the diagnosis is doubtful and observation is necessary, such as "query" scarlet fever or diphtheria cases; (4) cases from other wards in the hospital requiring operative treatment in which the after-treatment may be prolonged; (5) convalescent cases of diphtheria or measles when the wards receiving these patients are pressed by a sudden rise in the incidence of the disease; (6) cases of epidemic diarrhœa when these are few in number. The method of isolating these various diseases in one ward has been, in brief, the observation of strict cleanliness after examining or attending to a patient with a primary infectious disease or suspected to be suffering from such.

The hospital has had the advantage of possessing a highly trained sister in charge of the ward pavilion with special surgical and fever experience, who has supervised the wards since their inception. Each ward, male and female, is in charge, under the sister, of a general hospital-trained nurse with some fever experience; one probationer is also allocated to each ward. The night staff consists of two nurses, one of

whom has frequently had three years' general training. The wards are consequently well staffed both as regards the number and the qualifications of the nurses in charge. Each case of puerperal fever is placed on admission in the side ward off the operating theatre until it is decided what operative measures, if any, may be required. As long as active treatment, such as douching, is required the nurse in charge is not allowed to assist in the dressing of any case of erysipelas or cellulitis. Coats are worn by the doctor and nurse when attending to the case, and rubber gloves if douching or dressing is needed. When the operation has been performed and another case has been admitted requiring operative treatment, the first case is transferred to the main ward. Thus during the same week there were six cases of puerperal fever in the main ward and one case in the side ward.

The cases of erysipelas and cellulitis are treated with ordinary cleanliness only, no special isolation measures being adopted. The same remark applies to patients having no infectious disorder but some such condition as lobar pneumonia or a non-infective skin disease.

With cases of varicella, pertussis, and doubtful or genuine cases of scarlet fever or diphtheria, more rigid measures are adopted. Two long coats kept for each case are worn, one by the doctor and the other by the nurse, whilst examining or attending to the patient. Drinking-vessels, knife, fork, spoon, and spitting-mug are boiled after use, and separate sanitary utensils, bowl and brush for washing, and bath blankets are reserved for the use of each of these patients. No interchange of toys or books is permitted. After removing the coat worn in attending to the case the doctor or nurse washes the hands before proceeding to another patient. For this purpose a table with three bowls is kept half-way down each ward; additional bowls are placed on the locker of the patient concerned if isolation measures are likely to be prolonged or if the case is requiring frequent attention.

Temperatures are taken in the axilla and the thermometers washed in lysol after use. In the case of patients suffering from varicella or enteric fever a separate thermometer is kept for each patient.

If the case is one of the prime infections mentioned this routine is adopted until the patient is considered non-infectious, in cases of doubtful diagnosis until a negative opinion is arrived at. The patient is allowed to get up when all signs of acute disease likely to prove infectious have subsided. From now on he is allowed to mix freely with the other convalescent patients until discharged, provided that he is not a scarlet fever or diphtheria patient with rhinorrhœa or otorrhœa, in which cases a longer stay in bed is adopted, in the former case until the rhinorrhœa has ceased. Special precautions are, of course, adopted in dealing with nose or ear discharges. The convalescent transfers from other wards are similarly allowed freely to mix with the convalescent patients of the ward.

The total number of cases admitted to the ward during the years 1910 and 1911 was 668. Of this number, as will be seen in the following table, 27 showed no actual disease; a large proportion of these 27 cases were babies admitted with their mothers, the latter suffering from puerperal fever.

Table giving Varieties of Cases Admitted during the Years 1910 and 1911.

Infectious Diseases.

Disease.	Total cases.	Convalescent transfers.
Scarlet fever	69	16
Diphtheria	40	15
Measles	37	29
Rubella	12	5
Varicella	38	12
Pertussis	9	—
Scarlet fever and pertussis	2	1
Measles and pertussis	2	1
Varicella and paratyphoid fever	1	—
Diphtheria and scarlet fever	1	1
Typhoid fever	10	—
Puerperal fever	35	—
Erysipelas	215	—
Vincent's angina	1	1
Anthrax	1	—
Total	473	81

Other Diseases.

Disease.	Total cases.	Disease.	Total cases.
Phthisis	3	Conjunctivitis	1
Tuberculosis of other organs	4	Syphilis	2
Lobar pneumonia	4	Acute rheumatism	2
Empyema	3	Anæmia	2
Bronchitis, broncho-pneumonia	18	Carcinoma	2
Laryngitis	1	Chorea	1
Tonsillitis	50	Rickets	2
Retro-pharyngeal abscess	1	Icterus neonatorum	1
Ulcerative stomatitis	1	Marasmus, malnutrition	8
Alveolar abscess	1	Cellulitis, septic wounds	8
Gastro-enteritis, epidemic diarrhœa	33	Cutaneous abscesses, mastitis	3
Dyspepsia, constipation	2	Skin diseases	13
Nephritis	1	Total	168
Myocarditis	1		

No disease.—27.

During the two years under review the number of patients who developed an infectious disease whilst under treatment was two. One instance occurred in a girl, aged 7 years, who had been admitted suffering from rubella, but notified as a case of scarlet fever. After 14 days' stay in bed she was allowed up, but 13 days later was again confined to bed with a typical attack of scarlet fever. The other secondary case was that of a girl, aged 10 years, admitted with a mild attack of faucial diphtheria. After 28 days in bed she was allowed up, and in six days' time developed scarlet fever.

In the list of cases given attention may be drawn to the large number of non-infectious patients, many of whom—as, e.g., those sufferiug from epidemic diarrhœa—were young children. None of these contracted any infectious disease while in the ward.

The above figures represent the result of two years' observation, and although not large they certainly justify a continuation of this work and support the opinions arrived at by Martin, of the Institut Pasteur, Crookshank,[1] and others.

Caiger[2] in a recent paper defines three methods by which infection may be transmitted from one patient to another, both occupying beds in a hospital ward: 1. By "direct projection of infective particles from the patient's mouth or nose, the recipient being in immediate proximity." 2. By "mediate infection"—i.e., the indirect conveyance of recent infective material from the patient to the recipient by means of some article common to both. Under this heading may be included spread of infection "by fomites." 3. By "aerial infection"—i.e., infection at a distance (such as that intervening between neighbouring beds) by means of minute droplets of saliva, mucus, &c.

A consideration of the results obtained by bed isolation compared with those of cubicle isolation should be of definite value in deciding upon the comparative importance of these three modes of infection. Facilities for the spread of infection by method (3)—i.e., aerial infection—are obviously greater under the system of bed isolation than that of cubicle isolation; in fact, a total breakdown of the system of bed isolation might be expected if "aerial infection" were of common occurrence. In the light, however, of the very satisfactory results obtained by this latter system, as compared with those of cubicle isolation,[3] it may be fairly argued that the danger of spread of infection in a hospital ward by means of "aerial infection" is to be disregarded for practical purposes. It would appear that the practice of rigorous asepsis on surgical lines has a value equal to, or greater than, that of any of the accepted methods of separation by artificial barrier.

If the suggestion be accepted that "aerial infection" is a factor of limited importance, a suggestion receiving support from the results of this investigation, it may be questioned whether glass partitions do not involve a false security in regard to the nursing staff, rather than that protection to the patient which is claimed for them. In short, it would appear that in this matter of individual or "unit" isolation, the quality of nursing obtainable is the sole factor of success or failure. In probably no other branch of her professional work is a nurse called upon to display so large a capacity for detail and administrative control as in the bed isolation of cases of infectious disease.

[1] THE LANCET, Feb. 19th, 1910, p. 477.
[2] Public Health, June, 1911.
[3] Ibid.

Clinical Notes:

MEDICAL, SURGICAL, OBSTETRICAL, AND THERAPEUTICAL.

TWO CASES OF "ACUTE ABDOMEN."

BY J. J. W. EVANS, F.R.C.S. ENG.,
MEDICAL OFFICER IN CHARGE, WESTMINSTER HOSPITAL.

THE following two cases are of interest because they show the extreme difficulty of diagnosis in atypical abdominal conditions. A perusal of them will demonstrate their extreme similarity in all clinical aspects and their great divergence in pathological detail.

CASE 1.—A single woman, aged 45, was admitted to the Westminster Hospital in December, 1911. In the past she had had two attacks of "gastric ulcer" in 1906 and 1910, being laid up in the first instance five and in the second three months; in both instances she suffered from severe abdominal pain and persistent vomiting. She also had pleuro-pneumonia in 1907. There was a history of dysmenorrhœa as a young woman, but she had not suffered of late years. Two days before admission she was suddenly attacked with acute abdominal pain and vomiting which persisted up to the time of admission. When first seen the patient had a temperature of 99·4° F. and a pulse rate of 136; she had been given morphia before the journey. The abdomen was a little distended and only moved slightly on respiration; there were general tenderness, most marked on the left side, and absolutely no rigidity or any sign of fluid in the abdominal cavity. The pelvis was normal. The liver dulness was diminished. The heart and lungs appeared normal. A diagnosis of perforated gastric ulcer was made and laparotomy was performed. An incision was made in the middle line above the umbilicus but nothing abnormal was found in the upper part of the abdomen, which was then further explored below with a like result. The wounds were closed and the patient put back to bed, where her pulse-rate immediately fell to 120. With the exception of two days' pain and vomiting the patient made an uneventful recovery.

CASE 2.—A married woman, aged 34, with one child and no miscarriages, was admitted in December, 1911. Her past history showed that she had been laid up for a fortnight with "gastric ulcer" in 1903. Three days before admission she developed pain in the abdomen, most marked on the left side; there was no vomiting and the bowels were confined. When admitted the patient had a temperature of 100·8° F. and a pulse-rate of 132; morphia had been administered before the journey to hospital. The abdomen was not distended and moved on respiration; it was very tender all over, but there was no resistance or any sign of free fluid. The pelvis seemed normal. The liver dulness was present. The heart and lungs were examined and presented no abnormality. Laparotomy was performed, the incision being made in the middle line below the umbilicus. The abdominal cavity was found to contain a large quantity of pus distributed all over it; there was also an abscess cavity in the pelvis which had burst and contained a gangrenous appendix. The appendix was removed and the abdomen washed out and drained. Pus from the abdominal cavity showed on cultivation the streptococcus pyogenes and the bacillus coli communis. The patient made a slow but good recovery. The circumstances of both cases were such that no leucocyte count was possible.

The first case shows very well the impossibility of making a certain diagnosis in some abdominal conditions, which are fortunately of rare occurrence. The anomalous nature of the physical signs in the second case may have been accounted for by the recent administration of morphia. But however one may regard such cases one is forced to admit the advisability of prompt treatment.

I wish to express my thanks to the staff of the hospital for permission to publish these reports.

A CASE OF SURGICAL EMPHYSEMA DURING LABOUR.

BY MARION STOCKS, M.B., B S. LOND.,
ASSISTANT MEDICAL OFFICER, SHEFFIELD UNION HOSPITAL.

THE patient was a strong healthy girl, aged 20 years, a primipara, who had been in the Sheffield Union Hospital during the last two months of pregnancy.

Labour began on Feb. 14th at 1.30 A.M. when it was found that the vertex was presenting. Dilatation was complete and the membranes ruptured at 10.30 A.M.; the presenting part, however, remained high up in the pelvis. The uterine contractions were good and were supplemented by the strong voluntary efforts the patient herself made during the second stage. She had also frequent attacks of vomiting.

When seen at 2.5 P.M. her general condition was satisfactory, and the head was then beginning to make pressure on the perineum. Very shortly afterwards, however, the maternity sister reported that the patient's face was swelling, that this increased and was accompanied by cyanosis during the pains. The crackling sensation of subcutaneous emphysema was found present over the swollen area, extending over the neck and right side of the face; the right palpebral fissure was reduced to a slit. Forceps were applied and the patient was delivered of a living child.

At 10 P.M. the emphysema was found present over an area including both sides of the neck, both sides of the face up to the orbital ridges, the whole of the right side of the thorax limited by the costal margin below, the spine behind, and the sternum in front; the right upper arm to the extent of a third, and the left shoulder. Apart from some pain in the chest and at the back of the neck, of which complaint was made, the patient appeared to be little the worse. She made a good recovery, the whole of the swelling having disappeared at the end of eight days.

Sheffield.

A CASE OF MENINGITIS IN WHICH THE BACILLUS COLI COMMUNIS WAS OBTAINED FROM THE CEREBRO-SPINAL FLUID.

BY G. H. PEARSON, M.R.C.S. ENG., L.R.C.P. LOND.

A GIRL, 3 months old, was admitted to the East London Hospital for Children, Shadwell, E., on Jan. 25th, 1912, with obvious signs of meningitis. Lumbar puncture was performed under strict aseptic precautions and a turbid fluid, not under tension, was withdrawn. On examination four hours later the fluid showed numerous bacilli, extra- and intra-cellular, and a large number of polynuclear neutrophiles. A white count the same day as the puncture was done showed the number to be 16,000 per cubic millimetre.

The child died six days after admission, and at the post-mortem examination the diagnosis of septic meningitis was proved to be correct. The brain was entirely covered—more especially the anterior two-thirds—with purulent and offensive pus. There was no localisation of pus at any point. The ventricles were dilated and full of pus, which also surrounded the cord, especially between the cervical and lumbar enlargements. The left middle ear was full of pus, while the right was healthy and dry. No thrombosed vein or caries of bone was found. During life no symptoms of middle-ear mischief had been present. The bacillus, which was remarkably plentiful in the cerebro-spinal fluid, had all the morphological and cultural characteristics typical of the colon bacillus.

Cases of meningitis due to the colon bacillus are of great rarity, and there is little doubt that in some of the recorded cases the bacillus was found either as a result of a contamination in performing the lumbar puncture or as an ante-mortem phenomenon. In this case an obvious focus of entry for the bacillus was found post mortem, and the fluid withdrawn during life was examined shortly after removal from the body and found swarming with bacilli.

In the cases recorded by D'Allocco,[1] Nobecourt and Du Pasquer,[2] and Concetti,[3] where the bacillus was obtained from cerebro-spinal fluid by lumbar puncture, meningitis was

[1] Riforma Medica, Palermo, 1900, vol. xvi., part 1, pp. 435–437.
[2] Bulletin de la Société de Pédiatrie de Paris, 1902, vol. iv., pp. 371–377.
[3] Congrès de Médecine de Paris, 1900, Section des Maladies de l'Enfance.

accompanied by very severe gastro-intestinal disturbances. Recovery is reported in most of the cases. In this case, however, these symptoms only appeared at the close, and there seems no doubt that the primary focus was the middle ear. Forbes[4] also mentions a case of spina bifida from which he obtained the colon bacillus from the cerebro-spinal fluid. The child recovered.

I am very much indebted to Dr. A. M. Gossage, under whose care the child was, for permission to publish the case, and also to Dr. P. N. Panton, of the London Hospital, for his kindness in confirming the cultural results.

Medical Societies.

ROYAL SOCIETY OF MEDICINE.

CLINICAL SECTION.

Fibrinous Discharge from the Nose.—Ruptured Intestine.—Exhibition of Cases.

A MEETING of this section was held on March 8th, Mr. W. G. SPENCER, Vice-President, being in the chair.

Dr. A. M. GOSSAGE read a paper entitled, "A Family with Fibrinous Discharge from the Nose." He pointed out that fibrinous rhinitis was not very uncommon in children. According to Lambert Lack it was commonest in early childhood and was ushered in by slight malaise which was not sufficient to cause the child to lie up and only lasted for a day or two. There was a nasal discharge associated with fibrinous or membranous exudation on the nasal mucous membrane which persisted for six to eight weeks and then cleared up, leaving no sequelæ. In nearly all the cases bacilli indistinguishable from the Klebs-Löffler bacillus could be found, but although the disease was infectious, it did not seem to give rise to true clinical diphtheria. True diphtheria, of course, invaded the nostrils not infrequently and gave rise to a severe illness with formation of membrane in the nose. A further type of membranous formation in the nose had been described by Baumgarten. A strong baby girl had been noticed from birth to have crusts about the nose. With a probe and wool a long thin tube, like parchment, could be obtained from the nostrils, which took three to four days to re-form. At the age of 3 years a bad smell had been noticed, and after 4 years typical ozæna had developed. When the child was 2 months old the nose had been washed out with iodoglycerine, and after this no more tubes were formed, but occasionally there were slight crusts; later even these disappeared. The mother had suffered from ozæna, but there was no other abnormality in the family; a twin sister was quite normal. Baumgarten further stated that he had met with two other similar cases: tube formation in early infancy and development of ozæna about the fifth year of life. He considered that ozæna is frequently inherited chiefly from mother to daughter, and is much commoner in women. Dr. Gossage had recently come across a remarkable family, several members of which had a persistent fibrinous discharge from the nose. The condition was first noticed at birth and apparently persisted throughout life. It caused no impairment of health, the bronchitis from which the first member he had seen was suffering having been probably an accidental concomitant. There was only very slight discomfort, though there was a tendency to the development of a bad smell if the nostrils were not kept clear. In no case, however, was there any sign of ozæna. Specimens of the discharge, which usually took about 12 hours to re-form, were obtained from the father and two of the children, and in all cases were found to be a more or less complete fibrinous cast of the nostrils. Dr. Ross, pathologist to the East London Hospital for Children, had kindly examined the discharge and reported as follows: Film preparations showed polymorphonuclear cells embedded in a network of fibrinous matter. The organisms present were bacilli, diplococci, and short diplo-bacilli; no evidence of bacillus diphtheriæ or bacillus xerosis. Attempts to embed in paraffin and cut sections failed owing to the friability of the material. One of the boys had been taken into the hospital for 24 hours, but unfortunately had no discharge during that time. The nostrils had been examined on several occasions, and nothing abnormal could be seen, except once, when some fibrinous exudation was found over one lower turbinate bone. At least four generations had been affected, and males and females were attacked equally. Of the children of affected persons with normal mates, roughly half were affected and half normal. This suggested that the inheritance afforded another example of Mendelism in human beings, and that the abnormal condition was dominant to the normal. Unfortunately, there was no record of any offspring from the normal members of the family, so that it was impossible to say whether all their children were normal, as would be expected. It was a matter of great interest to find a fibrinous exudation on a mucous membrane resulting from a congenital abnormality, and not from some infective inflammatory process. He had not been able to find any record of a similar condition in medical literature.

Mr. WILFRED TROTTER communicated a note on a case of Ruptured Intestine, with especial reference to the mode of production of the lesion. The case was one which appeared to throw some light upon a subject about which there had been some controversy—viz., the mechanics of the production of traumatic rupture of the intestine. The patient, a youth, aged 18, was admitted to the University College Hospital during the evening of August 30th, 1910. Some hours earlier, in the course of his work as a navvy, he was caught between the buffers of two ballast wagons and severely crushed. The wagons being a good deal lower than ordinary railway trucks the buffers caught him over the lower half of the abdomen. He was held by them for a few moments under severe pressure. Operation was undertaken somewhat less than 24 hours after the accident. A median incision was made below the umbilicus. The intestinal coils in the lower half of the abdomen were found to be inflamed and somewhat matted together. Amongst them was turbid fluid mixed with a considerable quantity of fæces. Separation of the coils revealed a segment of ileum lying to the left of the spine against the posterior abdominal wall and showing an opening half an inch across which was discharging semi-solid fæces of a green colour. Examination of the damaged loop showed at once that suture was not possible. Enterectomy was therefore done and the bowel united end to end. The features of the injury could be seen well in the specimen shown, which preserved most of the appearances visible at the operation, and in a drawing. For a distance of about 2 inches the peritoneum of the bowel had been torn through and had shrunk back. Through this opening the tube of mucous membrane had protruded after being torn away from the outer coats. In the most prominent part of the prolapsed mucous membrane was a round opening of the size of a sixpence. The appearances seemed to show that the lesion was produced by a true bursting of the intestine. Traumatic rupture of the intestine had been attributed, and no doubt was due, to the action of one or other of three different mechanisms—viz., crushing, laceration, and bursting. There was no doubt that one or other of the two former caused the lesion of the bowel in many cases. Upon the third, however, a good deal of doubt had been thrown, and some authorities were inclined to question whether it was ever a cause of rupture. Experiments had shown that when the abdomen was compressed the pressure within the bowel, as might have been expected, was not increased above the general intra-abdominal pressure, and that therefore there was no tendency for bursting of the bowel to occur. When, however, a loop of bowel was not supported by the general intra-abdominal pressure—when, that is to say, it lay at a hernial opening or within a hernial sac—rupture was likely to occur if the abdomen was violently compressed. It had been shown comparatively recently that the influence of a hernia in predisposing to the occurrence of rupture was an important one. While admitting this, he was not prepared to agree that bursting could occur only in presence of a hernia. None such was discoverable in his case. It seemed, however, that bursting might be brought about in another way. If a loop of bowel were caught between the compressing force and the spine in such a way that both limbs of the loop were occluded, the contents of the latter might be put under such pressure that bursting occurred. Some such mechanism as that appeared

[4] Quarterly Journal of Medicine, Oxford, 1908, vol. i., p. 109.

to be the explanation of the state of affairs found in his case.

Dr. JAMES GALLOWAY showed a case of Progressive Muscular Dystrophy. The patient, a man, aged 31, presented the characteristic features of the better known types of this disease. The case was noteworthy on account of the want of evidence of heredity, the late onset of symptoms, the possible influence of severe muscular exertion, the arrest or retardation of the disease for some years, and the advance of symptoms when, for a transient illness, he stopped exercise and remained in bed for a fortnight.

Dr. HERBERT FRENCH showed a case of Paralysis of the Right Vocal Cord, Obstruction to the Superior Vena Cava, and Partial Obliteration of the Right Radial Pulse from Mediastinal Fibrosis, probably Syphilitic. The patient began to suffer from fulness in the head and from congestion in his upper extremities, with consequent difficulty in doing his work. The symptoms rapidly increased, and for upwards of a year he was unable to do any work, all the veins of his forehead, face, neck, and arms standing out like cords on the least exertion, and his facies presenting the suffused and livid appearance of considerable venous obstruction. During the past year these congestive symptoms had diminished sufficiently to allow him to do light work, probably as the result of the development of a deep collateral circulation. There was no marked degree of fulness of his superficial thoracic veins when he did not work or when the weather was cool, but on working, or when the weather was hot, many dilated superficial veins stood out upon his chest wall, his arms, neck, and forehead. The upper part of his right chest and shoulder were filled out as though by a tumour, especially at the root of the neck above the right clavicle. The patient had a bovine cough, and there was paralysis of the right vocal cord. The right radial pulse was hardly perceptible, whilst the left was strong. X ray examination showed no bulging of the aorta, but a dense shadow in the superior mediastinum, and particularly upon the right side, corresponding with the fulness that could be felt there. Malignant neoplasms would seem to be excluded by the facts that there had been improvement during the last year, and that the duration had already been two years without any loss of weight. Benign neoplasm within the thorax was a possibility; but the patient when a young man had syphilis and gave a positive Wassermann reaction when he first came under observation, so that it was thought that the lesion was mediastinal fibrosis from the healing of former gummata within the thorax, leading to stenosis of the superior vena cava, stenosis of the innominate artery or right subclavian artery, paralysis of the right recurrent laryngeal nerve, and interference with the upper lobe of the right lung. There was apparently no interference with the nerves of the brachial plexus.

Dr. FRENCH also showed a man; aged 61, who had Two Aneurysms of the Thoracic Aorta.

The following cases were also shown:—

Mr. ALBERT CARLESS: A case of Sarcoma of the Ilium treated by Coley's Fluid.

Mr. W. H. BATTLE: A case of Mikulicz's Disease.

Mr. TROTTER: Two cases illustrating Rupture of the Extensor Tendon of the Terminal Phalanx of the Finger.

Dr. E. B. WAGGETT and Mr. EDWARD D. DAVIS: A case of Hyperostosis Cranii.

SECTION OF ANÆSTHETICS, WITH SECTIONS OF SURGERY AND MEDICINE.

Exophthalmic Goitre.

THE adjourned debate on this subject took place on March 5th, Dr. W. J. MCCARDIE, the President of the Section of Anæsthetics, being in the chair.

The debate was resumed by Mr. A. E. BARKER. He said that though he had operated upon a large number of cases of thyroid tumour of all kinds, and in various positions, he had only dealt with a limited number of cases of Graves's disease. Though he had listened, in Berlin five or six years ago, to Professor Kocher's analysis of his work in this sphere, and the discussion which followed it, and had studied the literature since, he did not feel that a strong case had yet been made out for the operative treatment of Graves's disease, and the able contributions to the present discussion had not materially modified his views. Indeed, the ingenious way in which Dr. Hale White put the matter at the first of these meetings[1] had greatly strengthened the feeling he originally had. The intrinsic difficulties of the operation were a deterrent, and the effect of thyroidism on the nervous system was such that the liability to shock was much increased. It seemed that the mortality from Graves's disease when it was treated medically was about double that of ordinary people of the same age not suffering from exophthalmic goitre. The mortality from operations for the condition was variously given as from 4 to 10 per cent. The latter figure was Mr. Wilfred Trotter's,[2] and was about what one would expect from the operation. For most of his thyroid operations he had relied upon local analgesia, and had been well satisfied with it, though his experience comprised but few cases of extreme degree. This method should always be combined with morphia or some other efficient general sedative. The infiltration should be done by a surgeon who was familiar with the ground which he would have to cover, and the amount of force which would be necessary for the dissection. In conclusion, he spoke highly of the great help given to the surgeon by the expert anæsthetist.

Mr. CHARTERS J. SYMONDS regarded this discussion as forming an epoch in the operative surgery and general treatment of exophthalmic goitre. Dr. Dunhill's paper[3] seemed to convey a too great feeling of safety with regard to the operation itself, and he (Mr. Symonds) insisted upon the need of differentiating between patients who were nervous and had a goitre and patients with true hypothyroidism. Finer distinctions were necessary, based upon a closer examination of other organs of the body and of the blood. There was room for a more frequent consultation between physician and surgeon in selecting cases, and operating upon only the suitable ones. If cases could be seen earlier, he had hopes that operation for Graves's disease would become as safe as that of ordinary thyroidectomy. He feared that, in a general way, there was at present too strong an inclination to operate, and the blame for that must not be given wholly to the surgeon, for he was sometimes asked to open an abdomen because the physician was not ready to rest upon the obvious symptoms. There were some operations which, in order to insure safety, needed to have been frequently performed by the particular surgeon, who should possess the experience gained from operating in general and not alone in one particular region. This skill and knowledge would enable him to know how to act when his first course failed. He still looked upon operations for exophthalmic goitre as very serious, and much remained to be learned before success could be commanded. In all the cases of goitre, except two, which he had operated upon chloroform was the anæsthetic, and he had not had anxiety about them.

Mr. DONALD J. ARMOUR gave his experience in connexion with 26 cases, all but two of whom were females. He had had one operative death, and that patient should not have been operated upon, as she was in the last extremity of the disease. It was the only one for which local anæsthesia was given. She died a few minutes after the operation had been completed. He did ligature in the first four cases, but he had now given that up in favour of partial thyroidectomy, removing one lobe and the isthmus and, if advisable, part of the second lobe. All rough handling and squeezing of the gland should be avoided. In one case crushing of the gland sent the pulse up to 180 per minute. For two days following the operation the patient should have large quantities of saline fluid. He only occasionally employed drainage. The cases which had been traced were either cured or very much better.

Mr. WALTER EDMUNDS said that in Dr. Dunhill's fourth class he placed cases of adenoma of the thyroid with some tremor, some staring of the eyes, and an easily excited heart. These should be regarded as undoubted cases of Graves's disease, as they have both its symptoms and its pathology; two cases were cited in which an adenoma was accompanied with all the symptoms including exophthalmos, and in which the symptoms completely disappeared on the removal of the tumour, and in which, under the microscope, the tumour showed the characteristic appearances. Besides this, ordinary cases of Graves's disease (Dr. Dunhill's Class 1) sometimes contain an adenoma showing the usual changes; a case in which such an adenoma, together with other portions of the goitre, was removed was referred to; the symptoms

[1] THE LANCET, Feb. 24th, 1912, p. 504.
[2] THE LANCET, March 9th, 1912, p. 641.
[3] THE LANCET, Feb. 17th, 1912, p. 422.

promptly disappeared. A series of 13 cases of Graves's disease treated with milk from thyroidless goats[4] and other ways, but without operation, was referred to. Ten of the cases became much better or completely cured, one remained about the same, and two died. It seems probable that some of the ten cases might have been operated on, and if they had been that they would have been better or well sooner. The case that was about the same might have been operated on, and if all had gone well would have been now better or well; but the most important question is about the two who died. They were both very severe cases, and it is very doubtful if there ever was a stage in either case in which they could or should have been operated on; in one there was unilateral exophthalmos nine years before the goitre appeared, and also an attack of unconsciousness followed by convulsions of one arm one year before the goitre; the goitre grew with great rapidity and a rapid pulse and œdema of feet soon followed. The other case was also very severe, and a bad prognosis was given early; a sister had previously died from the same disease. Neither of these cases could be regarded as simply hypersecretion of the thyroid to be treated by removing part of the gland, and hoping that the remainder would atrophy. The observation that after the removal of one lobe and part of the other the eye on the side of the only partly removed lobe is often more prominent is very important, as it seems to show that the disease is not due merely to an over-secretion circulating in the blood.

Dr. H. J. SCHARLIEB considered that the safety of chloroform and ether made it undesirable to use local analgesia for these cases, on account of their great nervousness and the liability to psychic shock. If a general anæsthetic were given he considered it absolutely necessary to give previously from 1/100th to 1/50th grain of atropine hypodermically—i.e., half an hour before the operation. The patient should assume a position of comfort and have time to get breath after being placed on the operating table. One should begin with a mixture of chloroform and ether, or chloroform and absolute alcohol. One could then change to open ether or chloroform, administered by any dosimetric method. The anæsthesia should be full for the first incision, being considerably lightened later, and deepened again for the final suturing.

Dr. G. A. H. BARTON did not consider that local analgesia had any advantages over general anæsthesia. He had notes of 33 consecutive cases, and they confirmed his view that these cases could be safely and satisfactorily managed under general anæsthesia. Having separated out his 33 cases into Dr. Dunhill's categories, he said that some blueness was noticed in only 5 and a tendency to respiratory failure in 1. Hypodermic injections preliminary to operation were not given in the first 14 cases, except 1/100th of a grain of atropine five minutes before the anæsthetic. In 8 cases there were minor difficulties from cough, and in 2 considerable hæmorrhage. In one case of obstructed airway he administered oxygen throughout. If scopolamine and morphia were given, followed by open ether, with or without oxygen, much less general anæsthetic was required.

Mr. RUPERT FARRANT pointed out that there was a definite cycle from thyroid excess to thyroid insufficiency. At the commencement of this circle hypothyroidism would be so slight as to be overlooked. It was impossible to say to what height hypothyroidism might rise before the stage of insufficiency commenced. His examination of a thousand lunatics showed that they had a cycle of thyroid changes, which ran parallel with the mental symptoms. In conclusion, he expressed the view that if hyperthyroidism were recognised from one to three years sooner than is usually the case Graves's disease would largely cease to exist.

Mr. HERBERT J. PATERSON contended that, no matter what anæsthetic were used, its administration in Graves's disease was always attended with considerable risk. Chloroform, even when given by a supposed dosimetric method, was very hazardous. If any general anæsthetic were given it should be open ether, preceded by morphia and atropine. He had seen six deaths directly after thyroid operations; probably there were more such immediate deaths from operations for this condition than for any other. Therefore it would be disastrous for anyone unskilled in anæsthetics to lightly give an anæsthetic. He did not agree with deepening the anæsthesia for the final suturing, as that prevented the oozing points being seized and tied before the wound was sewn up. He pointed out that the mortality from operations for exophthalmic goitre at the clinique of the Mayo brothers at Rochester, U.S.A., had been reduced to 3·9 per cent. The practice of the Mayos was to use X rays to the tumour for some weeks before operation, and during that time the patient was kept at absolute rest, and belladonna was administered. He (Mr. Paterson) always tried to have the patient in hospital for three or four weeks prior to operating, and carried out the preliminaries just mentioned, the rest being absolute. Having paid a high tribute to the surgical skill of Mr. James Berry in this operation, he expressed the opinion that if exophthalmos had been marked it never entirely disappeared.

Mr. H. M. PAGE related the experience, from an anæsthesia point of view, of 25 cases, many of which were those referred to by Mr. Donald Armour. In only one of the cases was there any real increase of pulsation at the end of the operation.

Mr. H. BETHAM ROBINSON said he had hoped to hear reference made to intravenous anæsthesia, and spoke of the apparent success of the intravenous administration of hedonal in a case of exophthalmic goitre, as shown by the comfort of the patient and the absence of engorgement at the surface of the cavity, as well as the fact that he did not have to ligature any vessel, and there was no trouble afterwards.

Mrs. DICKINSON BERRY commented upon the absence of light in the discussion as to how far general anæsthesia was an additional risk in these cases, even when taken well. She spoke of two cases, operated upon by different surgeons, chloroform being used in one case and ether in the other, in which the patients died within a comparatively few hours following the operation. She also spoke of the small amount of discomfort complained of by the patients after local analgesia.

The PRESIDENT spoke of the association of the condition of status lymphaticus with exophthalmic goitre in its relation to anæsthesia. It was generally agreed that the thymus coöperated in causing exophthalmic goitre, and there was reason to suppose that the size of the former gland might be some indication as to the severity of the lymphatism present. He had seen several of the operations done under local analgesia, and the strain of the injection, if it were thoroughly done, was sometimes described by the patient as being equal to that of the operation itself. There was no general verdict on the question of the anæsthetic in these cases among those whose operative experience was the widest. An objection to local analgesia seemed to be its prevention of venous oozing. In the worst cases of exophthalmic goitre even the slight degree of toxic effect produced by a general anæsthetic should be avoided.

Mr. JAMES BERRY, who was responsible for the debate being arranged, wound up the discussion in a general way. He said it was unnecessary for him to enter at full length upon his views and methods, as he did that about two years ago in the debate at the Hunterian Society. He had operated on the thyroid gland in over 670 cases, and of those only 11 were genuine Graves's disease, though he had often been asked to perform the operation in that disease in the acute stage, but had declined, on account of the risks being so great. Much yet remained to be done before operating on Graves's disease could be considered satisfactory. The idea that Graves's disease had only to be operated upon to be cured, though prevalent in some quarters, was to be deprecated, as it was a grave mistake. Owing to the kindness of registrars of various large London hospitals he had collected records of 97 cases in the last few years, all well-marked and typical examples of the disease. The results had been much the same at the various hospitals, except that at the Middlesex Hospital there were 10 cases reported without a death. The deaths in the 97 cases numbered 16, and of these 12 occurred within 48 hours of the operation, and most of them within 24 hours. In only 10 was local analgesia employed. In 55 the anæsthetic was chloroform, and in most of the others ether. Possibly the poor results were largely due to the operation not having been done early enough. On the other hand, under medical treatment the prognosis in early cases was by no means wholly bad. Many patients recovered completely under medical treatment. There was much uncertainty about prognosis in these cases. But, as Mr. Wilfred

[4] THE LANCET, Jan. 25th, 1908, p. 227; April 10th, 1909, p. 1040; April 23rd, 1910, p. 1135.

Trotter so well said, not only the mortality from the procedure should be taken into account, but the wretched and miserable condition of the patient also must have its weight. Operations for true Graves's disease must always be regarded as serious and even dangerous. He strongly urged that false cases, which were not Graves's disease at all, should be ruled out of statistics on the subject. In the operation he supported those who advocated gentle manipulation, scrupulous asepsis, and exact hæmostasis. There should also be considerable judgment as to how much of the gland to remove. In most cases he did hemi-thyroidectomy from choice. In very bad cases he inclined to ligature of one or both superior thyroid arteries at first. But death might follow even this simple operation. The administration of large quantities of fluid was, perhaps, the most important point in the after-treatment. He considered that chloroform, however skilfully administered, added materially to the risks of the operation. Those who operated for Graves's disease should not publish simply gross statistics, but lists of cases in which details were carefully given, including the condition of the patient before operation, and a considerable time afterwards. That would constitute the best guide for future operative policy.

SECTION OF BALNEOLOGY AND CLIMATOLOGY.

Spa Treatment of Neuritis.

A MEETING of this section was held on March 6th at 15, Cavendish-square, W., Mr. G. H. THOMPSON (Buxton), the President, being in the chair.

Mr. WILLIAM ARMSTRONG (Buxton) read a paper on the Spa Treatment of Neuritis. He emphasised the paramount necessity of definite diagnosis between neuritis, neuralgia, and fibrositis, as the successful prescription of spa treatment depended almost entirely on accuracy in this particular. He briefly indicated the points by which this could be done, and also the structural changes found in the nerve tissues in cases of neuritis. The various forms and stages were noted and the following general lines of treatment laid down: 1. The building up of general nerve health. 2. Rest—general, local, and physiological. 3. Avoidance of all violent and irritating methods of treatment. 4. Elimination of toxic products and correction of faulty metabolism. 5. The removal of nerve inflammation. 6. The improvement of nerve nutrition and the repair of nerve mischief The special spa methods recommended were: In acute neuritis applications of superheated air general or local, the Greville method being the safest and most effective. Hot packs of radio-active earths with or without ionisation. Cocaine ionisation with low strength currents, followed by light applications of the electric cautery over the tender nerve points, especially at the spinal nerve exits. Oxygen baths, which have a peculiarly soothing and tonic influence on the general nervous system. The drinking of the various natural waters to eliminate toxins. Massage and strong irritating electrical current are contra-indicated in the acute stage of the disease. In subacute and chronic cases the eliminating effect by kidneys, skin, and lungs of the radio-active waters such as Bath and Buxton, and through the bowels and liver of those of Harrogate, Llandrindod, and Strathpeffer is of notable value. The radio-active waters are also very helpful in the form of inhalation and baths, their efficacy being much increased by the addition of oxygen. Warm mineral baths with hot gentle *under water* douching are useful, preceded by the local application of dry superheated air or of very hot vaporised mineral water. Ionisation with cocaine, radio-active earth, or sodii salicyl., with or without the electric cautery application, is most valuable—as are Moor baths; and in the more chronic cases gentle application of electricity by means of the Schnee bath, wave static, or high-frequency currents. Hot massage baths on the Buxton, Aix, or Vichy systems may at this stage be employed with care and gentleness. The Plombières douche is indicated if the urine shows excess of aromatic sulphates. The researches of Lazarus, Saubermann, and others were mentioned in regard to the remarkable action of radium emanations in greatly increasing the output of uric acid by the kidneys, urea and butyric acid by the skin, and carbon dioxide by the lungs, while at the same time building up the vital forces, the use of these emanations being especially indicated in the class of case under discussion. Considerable stress was laid on the necessity in cases of obstinate neuritis of being on the look-out for pressure causes, especially from malignant growths and aneurysms.

The PRESIDENT said that it was necessary to differentiate neuritis from cases of painful but less serious forms of neuralgia, otherwise treatment suitable to the latter would produce results profoundly disappointing. The great essential in severe and early cases was rest, and it was often difficult to get the patient to concur, as he looked upon his visit to a spa as a sure and certain escape from such restraint. Mr. Armstrong had given the most approved and successful forms of treatment. Similar treatment of like conditions sometimes gave dissimilar results. In severe cases Mr. Thompson had good results with a 2 per cent. salicylate ionisation. In cases where blistering was used, he had found a dilute solution of formalin very effective in keeping open the part.

Mr. W. J. MIDELTON (Bournemouth) said he had employed the blister followed by savin ointment, and also a form of acupuncture, followed by the application of a mixture of croton oil, cantharides, acetic acid, and almond oil, in the treatment of neuritis, and quoted cases in which he had obtained marked success by one or other of these methods. He doubted if other methods were superior in any way to the above, and as the result of long experience he had succeeded in devising details by which practically all severe pain and discomfort wers eliminated.

Mr. E. SOLLY (Harrogate) said that in his experience many cases of so-called neuritis were primarily due to the condition now usually spoken of as "fibrositis," in which the symptoms were more manifest in the perineural tissue than in the fibrous tissues generally. In these cases treatment should be directed to the injured nerve tissue, and should consist of soothing treatment by rest and local application of heat; whereas in fibrositis affecting the coarser forms of fibrous tissue, forcible massage and stimulating forms of electric treatment were necessary.

Dr. LÉON BLANC (Aix-les-Bains) referred to the distinction between neurasthenic and neuritic pain. He said that as long ago as 1846 Baron D'Espin had pointed out that massage must not be used to the affected part. He advocated the use of the under-water douche after vapour baths, and considered that the radio-active mineral baths and packs were of the greatest value.

Dr. C. W. BUCKLEY (Buxton) laid stress on the necessity of distinguishing between parenchymatous neuritis and neuritis associated with fibrositis, which was very common. He pointed out that American observers had shown that many cases of so-called brachial neuritis were really affections of the subacromial bursa and not of the brachial nerves. He divided the treatment into three stages: in the first stage rest, with methods of inducing hyperæmia; in the second, hyperæmia again, with ionisation and mineral-water treatment; in the third, massage, ionisation with iodine, and hot douching.

Dr. WILLIAM EWART inquired whether the radio-active oxygen baths had led to any favourable results in the clinical behaviour of patients as regards their temperature and general metabolism. He also wished to know whether any good effect had been obtained from a mild systematic eliminant treatment in cases of a plethoric tendency.

MEDICAL SOCIETY OF LONDON.

X Rays in the Diagnosis of Hydronephrosis.—The X Ray Examination of the Urinary Tract.

A MEETING of this society was held on March 11th, Dr. J. MITCHELL BRUCE, the President, being in the chair.

Mr. J. W. THOMSON WALKER read a paper entitled "The Value of the X Rays in the Diagnosis of Hydronephrosis." The means of diagnosis of hydronephrosis and their practical value were shortly stated. Hydronephrosis presented two clinical stages, the first in which symptoms alone were present, and the second in which a swelling was found in the loin. The functional value of the kidney in the second stage was greatly impaired, and after relief of the obstruction the kidney did not return to its normal state. In the first stage there were two groups of cases. In one there was an obvious cause of hydronephrosis present (ureteric calculus, moveable kidney), in the other no such cause could be demonstrated (hydronephrosis due to valves,

stenosis, aberrant vessels). The symptoms of commencing dilatation in these groups were discussed and it was stated that they were variable and of little diagnostic value. Dilatation of the kidney was seldom diagnosed before a palpable tumour appeared in the loin. Exploratory operation was too serious a method for adoption in all cases. The X ray diagnosis consists in: (*a*) finding an increase in the shadow thrown by the kidney. In early dilatation special measurements must be made in a fixed position in order to recognise the enlargement. (*b*) Pyelography, which consisted in filling the pelvis of the kidney with an innocuous fluid opaque to the X rays (collargol) and obtaining a radiogram. The dilated pelvis was less sensitive to distension than the normal pelvis. Commencing dilatation was shown by clubbing and elongation of the calyces, and the pelvis became globular. The angle of union of the renal pelvis and ureter was shown by pyelography, and kinking could be demonstrated. The ureter, pelvis, and upper renal calyx should be in a straight or slightly curved line. The angle formed by the ureter, pelvis, and lower calyx should be wide. The position of the obstruction was shown by a stone shadow, a kink at the junction of the ureter and pelvis, or the shape of the collargol shadow. Illustrations were given of the value of pyelography in the diagnosis of commencing dilatation of the kidney in ureteric calculus, of persistent dilatation of the kidney after relief of obstruction, of the presence or absence of dilatation in moveable kidney and after nephropexy, of kinking of the uretero-pelvic junction, and in the demonstration of an actively contracting ureter in hydronephrosis due to moveable kidney, and in the diagnosis of hydronephrosis due to aberrant renal vessels.

Dr. W. IRONSIDE BRUCE read a paper entitled "The X Ray Examination of the Urinary Tract," which will later be published in THE LANCET.

SOCIETY OF MEDICAL OFFICERS OF HEALTH.

The Relation of Local Authorities to the National Insurance Act.

A MEETING of this society was held on March 8th, Professor A. BOSTOCK HILL, the President, occupying the chair.

Dr. A. K. CHALMERS opened a discussion upon the Relation of Local Authorities to the National Insurance Act. He stated that the sanitary legislation of the last century was concerned primarily with the removal of barriers against healthy living, which in ignorance of their effect had been allowed to grow up around large centres of population, but that during the past ten years inquiries had revealed how large was the sum of inefficiency in individuals which might be hidden beneath a too rigid insistence on the value of general averages, even though they pointed to a reducing prevalence of fatal disease and to an extended duration of life at its most productive ages. The National Insurance Act might be regarded as providing for a large part of the adult community a scrutiny similar in its character to that which was yielding hopeful results in the movement for the reduction of infant mortality and for the detection of disease among children of school ages. When considering the provisions of the Act which enabled county or county borough councils to share with the Treasury the payment of any deficit estimated as likely to arise in connexion with the administration of medical benefits, Dr. Chalmers expressed the opinion that in ordinary circumstances a deficit was not likely to arise. He spoke approvingly of the use of the word tuberculosis rather than phthisis in the Act if only for the reason that should the extension of sanatorium benefit to the families of insured persons become general preventive measures could be taken against consumption at a time when the lungs, if not entirely free from the disease, were at least free from phthisis in the sense that no open tuberculous lesions were present. He suggested that the extension of sanatorium benefits to dependents in reality simplified the problem for the local authorities who had not hitherto displayed any eagerness to provide for consumptives facilities for hospital treatment, mainly for the reason that they were not convinced that as an administrative weapon sanatorium treatment applied solely to the treatment of consumption could stand alone or as the dominant factor in the effort to reduce the prevalence of tuberculosis. Dr. Chalmers pointed out many difficulties surrounding the successful administration of Section 63 of the Act, which provides that a sanitary authority in whose area there may be shown to be excessive sickness due to the neglect of the authority shall pay out of its funds any extra expenditure alleged to have been incurred by the Insurance Committee as a consequence of the excess.

Mr. F. E. FREMANTLE deprecated the exclusion of the county councils and the sanitary authorities from direct participation in the administration of the Act. He considered that the scheme should be worked through the sanitary authorities with the county councils as intermediate authorities.

Dr. G. F. MCCLEARY attached great importance to the preventive side of the Act and could conceive circumstances in which Section 63 could be put in force with advantage, such, for example, as in the typhoid epidemic at Lincoln.

Dr. A. H. BYGOTT considered that the Act constituted a first line of defence against disease and that a second line could be provided by making more use of the Public Health Act of 1875 to provide institutional treatment.

Dr. E. W. HOPE pointed out that every Act of Parliament required for its administration knowledge and experience, both of which, however, could only be obtained in the case of the Insurance Act after it had been in force. He considered that sanatorium treatment must be regarded in the broadest manner, and that it was absurd to limit it to those cases which would come out as a success.

Dr. R. A. LYSTER said that those who were to control the Act were the insured, and that it was idle to talk to them of general measures of prevention. They would expect to have individual treatment. He hoped medical officers of health would not urge preventive measures too freely, for it could not be expected that these would produce as good results in the next few years as they had done in the past.

Mr. E. H. T. NASH emphasised the importance of dealing with pre-tubercular cases which were being gathered in by the school medical officer.

Mr. HERBERT JONES considered that Section 63 would have far-reaching effects if only as a lever to arouse into activity rural district councils. The section was justified by the large number of reports of medical inspectors of the Local Government Board in which sanitary authorities had been shown to be neglecting their duties.

The PRESIDENT, while agreeing that it was important to get hold of the pre-tubercular cases, feared that there would be many difficulties in doing so in rural districts, for local sanitary authorities had not yet had awakened in them the sanitary conscience.

LIVERPOOL MEDICAL INSTITUTION.

Calculi in the Ureter.—Diabetes Mellitus.

A MEETING of this society was held on March 7th, Mr. ROBERT JONES, the President, being in the chair.

Mr. W. THELWALL THOMAS read a short paper on the Diagnosis and Treatment of Calculi in the Ureter. He gave a tabulated analysis of 17 cases on which he had operated, and said the symptoms which were most marked were pain, hæmaturia, and pyuria. In all his cases pain had been present. In most cases there was aching pain often shooting into the testicle, sometimes unilateral, but not always felt on the side on which a calculus was found by the X rays. In 11 cases the pain had been intermittent and colicky. Hæmaturia was present in 10 of the cases, in some of these in very small amounts. Pyuria was present in about half the cases; in some along with hæmaturia. In 3 cases there had been neither hæmaturia nor pyuria. The most reliable indication was the presence of well-marked shadows on the radiogram in the line of the ureter, but even this was not absolute in the lower inch or so of the duct. In such cases the cystoscope helped. The ureteral bougie had been used, but it might pass beyond a stone and so lead to wrong conclusions. Mr. Thomas had not found any treatment of use that aimed at dissolving the calculi; large quantities of fluid might by washing the stone through the ureter lead to its expulsion. The stones had all been analysed by Professor B. Moore, and found to consist of insoluble salts of lime. Mr. Thomas had operated by the perineal and by the vaginal routes, but preferred and recommended the iliac route for all cases. With the patient in the

Trendelenburg position, an incision was made in the direction of the fibres of the external oblique over McBurney's point, the muscle was split and retracted, the internal oblique was also split and the peritoneum opened. It was possible by this method to reach the whole course of the ureter and even to excise the kidney. Dujardin's forceps for the bile passages had been found useful for the extraction of impacted stones, but hardly strong enough in their grip for some cases. A good head light was essential for this work. The ureter was opened on the anterior surface and the stones removed; the ureter was sutured with fine catgut, a drain was inserted, and the abdominal wall sutured in layers. Mr. Thomas showed lantern slides of the radiograms and of the steps in the operation.—In the discussion which followed Mr. F. T. PAUL said that division of the muscles had never given any trouble if the incision were well to the outside of the rectus muscle. He had found laryngeal forceps useful. He showed forceps which he had devised with a long flexible shaft and alligator jaws.—Mr. C. T. HOLLAND said it was impossible in some cases to be absolutely certain that shadows shown by radiograph were due to stone in the ureter. Calcareous glands were common in that region; also phleboliths were found at most all ages. The vermiform appendix and calcareous deposit in the fibrous tissues of the sacro-iliac joints might also give misleading shadows. He emphasised the need for a radiographic examination on the day of the operation as the stones moved and might disappear.

Dr. O. T. WILLIAMS and Dr. P. MILDRED POWELL gave the salient points of a long and elaborate paper on the Treatment of Diabetes Mellitus. Allusion was made to the work of Dr. Mathew Dobson, a physician of Liverpool, who, in 1775, was the first to demonstrate sugar by crystallising it out and obtaining alcohol by its fermentation. Dr. Williams briefly reviewed our knowledge of carbohydrate metabolism and the influence of ductless glands and the nervous system in relation to glycogenolysis. Charts were shown compiled from daily observations made for months by Dr. Powell on patients in the Royal Infirmary. In the study of the cases treated by diastase there was no obvious action on nitrogen or on carbohydrate metabolism, or on the organic acids. Throughout the whole series of cases there were small changes in reactivity of the urine to different indicators. Whether the diastase were given in liquid or solid form or in capsules insoluble in the stomach, the changes were not due to the ferment. The charts showed that the most successful cases had been treated by limited amounts of carbohydrate diet varying with the needs and idiosyncrasies of the patient; in some cases the urine had become sugar-free, body weight was gained and acidity diminished under a dietary where oatmeal was given up to 8 ounces per day. The recent discoveries of the effects of the removal of the cuticle of rice in producing beri-beri and the effect on the disease of giving the pericarp of the cereal suggested that there may be some part of the potato, of oats, and of rice which has a specific action on metabolism, and which, if it can be isolated from the cereals or from the preparations of diastase, may prove to have specific action in the treatment of this disease.—A discussion followed, in which Dr. C. J. MACALISTER, Dr. W. B. WARRINGTON, Dr. T. R. BRADSHAW, and Mr. T. H. BICKERTON took part. The last speaker mentioned that Dr. Mathew Dobson was not only a distinguished discoverer and physician, but was the first president of the Liverpool Medical Society.

ROYAL ACADEMY OF MEDICINE IN IRELAND.

SECTION OF OBSTETRICS.

Sloughing Bladder from Pressure of a Pelvic Myoma.—Cancer of Stomach simulating Ovarian Cyst.—Summer Diarrhœa in Infants.

A MEETING of this section was held on Feb. 16th, Mr. A. J. HORNE, the President, being in the chair.

Dr. H. JELLETT showed a post-mortem specimen of Sloughing Bladder due to Urethral Compression by Pelvic Myoma, consisting of the bladder, the uterus enlarged by a myoma, and the vagina. The patient, aged 40, suffered from acute retention of urine for a fortnight previous to admission to the Rotunda. A medical man had passed a catheter, and ordered this to be done twice daily. On admission the physical signs were: A hard tumour incorporated with the uterus, filling the pouch of Douglas, in front of which was the bladder reaching almost to the umbilicus. The urine was exceedingly dark and foul-smelling, contained blood, was alkaline; specific gravity, 1020. The bladder was washed out with a solution of permanganate of potash, and a permanent rubber catheter left in. The uterus was pushed out of the pelvis with difficulty. The patient gradually sank, and died the following day from septicæmia due to general poisoning from the bladder. Post-mortem examination showed great thickening of the bladder, and the mucous membrane had practically disappeared. The point of importance was that patients suffering from retention of urine should be submitted to pelvic examination.—Mr. H. B. GOULDING said that in a case recently observed the patient suddenly developed symptoms of being unable to pass urine. He recommended operation at once, and she was now quite well.—Sir W. J. SMYLY said that he had seen this case at the Rotunda in the absence of the Master, and it seemed to him exactly like a case of retroverted pregnant uterus. He referred to similar cases, but retention was not complete and there was no sloughing of the bladder.—Dr. A. P. BARRY and the PRESIDENT also discussed the case.—Dr. JELLETT, replying, said that death occurred in some cases from nephritis, but in this case apparently from general poisoning. Patients with myomata should be operated on while in good health without waiting for serious symptoms.

Dr. JELLETT showed a specimen of Cancer of the Stomach simulating Ovarian Cyst. The patient, aged 64, had six children, the last pregnancy being in 1888. She was admitted on Jan. 16th complaining of pain in the abdomen, which for six months had been getting larger. The uterus was small and atrophied, the abdomen containing a semi-cystic tumour about the size of a seven months pregnancy; there were some nodules in the right iliac fossa; no gastric symptoms were present. On opening the abdomen a swelling of the size of a football—tense and covered with large veins—was discovered. It was attached to the liver, and below it lay the transverse colon and small intestines. There was a firm adhesion between the abdominal wall and the tumour on the left side. A couple of hard nodular masses were to be felt to the right of the tumour in the region of the right kidney. She died about a week after the operation from heart failure. At the necropsy it was found that the tumour was a malignant growth originating in the stomach.—Dr. T. P. C. KIRKPATRICK said that in view of the fact that the patient had no gastric symptoms he might mention that this year he had heard of four such cases, in one of which practically the whole stomach was involved, yet the patient presented no gastric symptoms. It was well to remember that malignant disease of the stomach might reach an advanced stage without any signs of gastric trouble.—Dr. JELLETT, in replying, said that the tumour filled the whole abdomen, the liver being displaced and rotated.

Dr. J. SPENCER SHEILL read a paper on the Recent Epidemic of So-called Summer Diarrhœa amongst Infants, which was discussed by Dr. E. H. TWEEDY, Dr. KIRKPATRICK, Mr. J. S. ASHE, Dr. B. A. H. SOLOMONS, Dr. JELLETT, Mr. G. C. SNEYD, Dr. BARRY, Dr. ELLA WEBB, and the PRESIDENT.

SECTION OF PATHOLOGY.

Exhibition of Specimens.

A MEETING of this section was held on Feb. 23rd, Professor A. H. WHITE, the President, being in the chair.

Sir JOHN MOORE showed the Heart of a woman, aged 34, who was admitted to Meath Hospital on Jan. 12th last. Notes of the case showed that the area of cardiac dulness was much increased and the apex beat could not be made out. The pulse was small and scarcely collapsing in character. Systolic murmurs were heard both in the aortic area and at the apex of the heart, and at times a diastolic murmur under the sternum. An occasional doubling of the first sound and an inconstant presystolic murmur heard to the right of the left mamma further suggested mitral stenosis or some form of mitral obstruction. The average pulse-rate was 100 in the morning and 104 in the evening; respirations 31 in the morning and 34 in the evening. The diagnosis was combined aortic and mitral valve disease of rheumatic

origin. Death took place rather suddenly. On post-mortem examination the aorta was healthy. When opened and emptied of clots the heart weighed 29 oz.; there was a milk spot on the anterior surface of the right ventricle; the pericardium otherwise was normal. The walls of the left ventricle were greatly hypertrophied, and its cavity was dilated. Early fatty degeneration was shown by well-marked "thrush-breast" mottling of the musculi papillares. The right valves were normal. On the left side extensive acute vegetative endocarditis was found implanted on old fibrous disease of the mitral and aortic cusps, most exuberant on the anterior and right posterior segments of the aortic valve, and small crops sprouting from the orifices of the coronary arteries. The acute process had also spread from the mitral flaps to the inner surface of the dilated auricle. There must have been aortic insufficiency of old standing, and probably a little mitral regurgitation. The mitral orifice was not materially stretched.

Dr. WILLIAM BOXWELL read the clinical notes, and exhibited the heart and lungs, of a child of 8 years who was obviously in a serious condition when admitted suffering from pain and dyspnœa and showing the anxious expression and livid lips of pericardial effusion. He had never suffered from rheumatism or scarlet fever. He had been a particularly healthy child, well-grown and vigorous—facts of interest in view of the post-mortem findings. His present illness had been of a week's duration. Physical examination disclosed a marked increase of cardiac dulness, a loud shuffling friction sound, with a sharp thrill and a blowing systolic murmur. A pleural effusion was noted. Exploration with the hollow needle was without result. The child was *in extremis* and died next morning. At the necropsy a large sero-fibrinous effusion was found laterally and behind the heart. The mitral and aortic valves showed acute simple endocarditis. The right auricle was markedly dilated. There was a large patent foramen ovale with no attempt at valve formation. The tricuspid orifice was a mere hole, without any anterior cusp. To the right of this was a second orifice of the size of a child's thimble guarded by diminutive valve cusps and papillary muscles. Dr. Boxwell said he was more impressed than ever with the futility of the hollow needle for either exploration or treatment, and strongly advocated free incision and exploration with the finger of all cases of pericardial effusion requiring surgical interference.

In the absence of Dr. GEORGE PEACOCKE, Professor ALFRED SCOTT showed a specimen of Cancer of the Pancreas with Pancreatic Cyst from a woman, aged 39, but looking much older, who was admitted to Adelaide Hospital on Dec. 3rd, 1911. She had never been sick until about two months previously, when she began to suffer with flatulence, loss of appetite, and constipation. She noticed a lump in her abdomen on the left side, which, though not tender, caused a dull aching pain. She had not vomited. On Dec. 1st she noticed that she was jaundiced. She did not notice much loss in weight. On admission she was deeply jaundiced. The urine contained bile and the stools were light in colour. Her thoracic organs appeared normal. Examination revealed a large tumour, occupying chiefly the left side of the abdomen, coming from under the costal margin on the left side, extending below the umbilicus, its inner margin being felt slightly to the right of the middle line. The edge of the liver could be made out separate from the tumour, which was dull on percussion, did not move on respiration, and was not tender on palpation. Until a few days before death vomiting was only occasional, and was never a marked symptom. The patient died on Jan. 26th. The specimen showed the surface of the liver covered with numerous nodules, having the dimpled and typical appearance of secondary growths. The tumour contained a vast quantity of fluid and a number of cells in a state of fatty degeneration. The fluid had a trivial action on starch and protein, but there was nothing remarkable in it. The cyst had cavities and there was moderately dense connective tissue. Lower down was a very mottled greenish-white mass, which sections showed to be a small round-celled cancer.

Professor SCOTT also exhibited for Dr. Peacocke a specimen of Miliary Cancer of the Peritoneum in a woman, aged 47, admitted to the Adelaide Hospital on Feb. 8th, who had enjoyed excellent health up to two months previously. On admission she was very ill—marked dyspnœa, cyanosis, and an almost imperceptible pulse. Fifteen ounces of bloody serum were withdrawn from the chest, with slight relief, but she died on Feb. 10th. Post mortem the right and left side of the pleura, as well as the abdomen, were filled with fluid, the lung collapsed, and all tissues very much matted. The mesentery was thick and covered with little growths, which had the appearance of either tubercle or cancer. The liver was adherent to the diaphragm, but there were some little white growths on the surface. All over the peritoneum there were miliary growths. Sections of the liver showed it to be carcinoma. The starting point could not be traced as there appeared to be no focus. No explanation could be found for the onset of the disease.—The cases were discussed by Dr. J. A. MATSON, Dr. R. J. ROWLETTE, Mr. W. I. DE C. WHEELER, Dr. W. D. O'KELLY, the PRESIDENT, and Mr. K. E. L. G. GUNN.—Professor SCOTT, replying, said with regard to the first specimen the urine contained nothing except bile. Cammidge's reaction was not done. With regard to the second case the ovaries appeared to be normal.

Mr. WHEELER showed a specimen of Abdominal Aneurysm from a man on whom he operated some months ago. The patient, after the introduction of 150 inches of wire and the performance of a gastro-enterostomy, developed intestinal obstruction. The abdomen was again opened, and a loop of jejunum was found compressed between the tumour formed by the aneurysm and the stomach and abdominal wall. The obstruction was relieved, but the patient died in a week from rupture of the aneurysm at a point remote from where the wire was introduced. The wisp of wire (Colt's) was found situated between the layers of laminated clot (formed before operation), and had not expanded to any extent. Mr. Wheeler considered that the lesson to be learned from this information was not to introduce the wire until there was a free flow of blood through the cannula in order to be certain that the wire would enter the lumen of the aneurysm and not be pushed between layers of clot. If necessary two or three punctures should be made before pushing the wire home. The two cases operated upon previously by Mr. Wheeler were alive and well—17 and 8 months respectively after operation. Mr. Wheeler also showed four specimens of Stomach Cancer removed by operation.—Dr. ADRIAN STOKES and Mr. GUNN discussed the cases, and Mr. WHEELER, in reply, said that the stretching of the peritoneum in pancreatic cyst and hydronephrosis was not accompanied by pain, but where there was marked pulsation it appeared to him that the stretching plus the pulsation might cause it. The great pain was not of necessity due to the erosion of the vertebræ.

LEEDS AND WEST RIDING MEDICO-CHIRURGICAL SOCIETY.—A meeting of this society was held on March 1st, Mr. H. Littlewood, the President, being in the chair.—Dr. J. B. Hellier read a paper on Vesicular Mole—Benign and Malignant. This was illustrated by lantern slides and by an excellent series of microscopic sections arranged by Dr. M. J. Stewart, and by micro-photographs kindly lent by Dr. J. H. Teacher of Glasgow. Dr. Hellier dealt chiefly with the clinical features of the conditions under consideration. He mentioned two cases where excessive vomiting in pregnancy had been due to vesicular mole. He dwelt on the great difficulty sometimes experienced in the early diagnosis of the malignant from the benign form, showing that the proliferation of the trophoblastic layer in the two forms respectively was one of degree rather than kind. He spoke also of the occasional retrogression and healing of choric-epithelioma.—Dr. Stewart read a short paper on the Pathological Questions most under Discussion at Present in Regard to Chorio-epithelioma.—Mr. Walter Thompson described a case on which he had recently operated successfully for Chorio-epithelioma following vesicular mole.—Dr. T. Churton showed a child, aged 3 years, with Obliteration of the Hepatic Veins which produced rapidly recurring Ascites. This was finally treated by incision, and recovery occurred with dilatation of the superficial abdominal veins.—Mr. J. F. Dobson showed a Gall-stone removed from the Ileum, where it had produced acute intestinal obstruction, and also Gall-bladders which had been in fistulous communication with (*a*) the colon and (*b*) the duodenum.—Mr. A. L. Whitehead showed a case of Tuberculous Iritis.—Mr. Michael A. Teale showed two sisters showing Congenital Dislocation of the Lens of Each Eye.—

Other cases and specimens were shown by Mr. H. Secker Walker, Mr. Thompson, Mr. E. W. Bain, Dr. R. A. Veale, Mr. R. Lawford Knaggs, Dr. W. H. Maxwell Telling, Dr. G. W. Watson, Mr. H. Littlewood, and Dr. L. A. Rowden.

At the previous meeting of the society, on Feb. 16th, Dr. Myer Coplans read a paper entitled "Some Gleanings from Leeds Markets," which was by inadvertence not referred to in the report published in THE LANCET. He said: With the advent of the Insurance Act a new condition arises whereby all care for the sick workers is placed directly in the keeping of the medical practitioners of this country, and there follows the natural corollary that there will arise in preventive medicine a new movement for the extension of its domains and over-lordship, one having for its principal exponents and votaries all who are like to be harassed and unjustly penalised for every infraction of the canons of sanitation, be the offender the individual or the community. The new Health Committees in their anxiety for the maintenance of public health are like to regard the behaviour of the sanitary committees of the local authorities with the proverbial care, attention, and watchfulness of the cat towards a mouse. Many problems await solution, one of them that of a pure food-supply; and inasmuch as a considerable proportion of the food consumed by the workers of Leeds passes through the Leeds markets some gleanings of the immediate condition of affairs may not be untimely. For food totally unfit for human consumption the Legislature has already provided drastic measures. Still, there remains a wide and extensive borderland to which the terms tainted, degraded, and unwholesome are the only just qualifications. The sale of such food is free and unrestrained. Not one of us would permit its use for the sustenance of a sick man, yet we are all cognisant of the elementary and compelling consideration that its consumption will undermine the healthy; and the pity of it all is that the poor and ignorant of this country do, for some reason, harbour the belief that the mere fact of exposure of food for sale in a public place is of itself a sufficient guarantee of wholesomeness. With the modern development of quick transit and cold storage we have reached a carnival of misdescription and fraud. Take a walk through the markets at noon, day by day, for a week, and watch the fish, the poultry, the game, and the meat in particular. The fish has lost its freshness; the frequently invoked hose-pipe has washed away all its scales and odours, and withal an appropriate dab from a kindly-placed bowl of ox-blood gives semblance to a recently departed life. That "filleted haddock" yonder is dogfish or catfish, or cod or ling dyed yellow, and the "finney" haddock was smoked in London; true enough, there is some haddock, buff-dyed, on sale, but it is to be found in the cheap tins labelled "salmon." The baskets and boxes of dressed rabbits will interest you; the former, 5 per cent. of the total, contain locally trapped animals—the latter, foreign and colonial produce, have undergone cold storage and are but recently thawed. Yet all are unblushingly described as Yorkshire trapped rabbits, and it is obvious that with many some degree of putrefaction had preceded the cold storage. Yet follow their market history. The boxes are opened on Tuesday and the market price is 10*d*. On Wednesday they are skinned and the price is 9*d*. On Thursday it is 8*d*. and 7*d*. The flesh and the parietal fat are alike changing colour, and all the while they are being exposed to the dust and dirt of the market ways. On Friday the parietal fat is stripped and the price is 6*d*. The carcass is now appreciably smaller in size and strips of decayed flesh have been removed. Last scene of all is late Saturday night; the price is reduced to 4*d*. Clearance is imperative and the buyer must be tempted, for evidently cold storage is too expensive. At this late hour fish, which earlier in the week was sold at 3*d*. per pound and upwards, is now retailed at 5 pounds for 2*d*., and the stall-holder does not hesitate to express the private view that the food is unfit for his own dog, and that people who buy food at such prices deserve all the ills they suffer. Many of the stall-holders possess branch shops in the town, and to the market at this late hour returns all unsold material; nor does the yellow glare of the stall lamps facilitate any too nice distinction in the various flesh tints. Of the meat and poultry, the less said the better; in and out of the refrigerator they go after exposure to the market dirt, and when during the all-busy Saturday night they arrive once again on the stalls the salesman is ever-ready with his assurance of freshness of condition, knowing full well that putrefaction has simply been stayed and all keeping qualities have departed. About Christmas time you will see old dates and figs undergoing a curious washing process, immediately afterwards to appear on the stalls as "newly arrived" fruit at bargain prices, and on Boxing Day you may witness the sight of unsold turkeys being prepared for their second and perhaps third annual arctic sojourn in the local "frig." Everywhere you may purchase in their dyed skins dyed sausage meat made up of the scrapings of stale meat or perhaps worse. I cannot find evidence either at Leeds or elsewhere that systematic steps are taken to determine the presence of tuberculosis or other communicable disease in this form of food. The retail druggist is equally ready to sell, without let or hindrance, "sausage-dye" or "milk-colouring," or "egg-yolk dye," and the cheap pastry stalls with cakes of wondrous yellow tint are only outdone by the rainbow hues of the sweatmeat trays. Sophistry everywhere. The Jewish butchers serving a community of 25,000 souls do, by ritual law, declare about one-tenth of the animals slaughtered by them to be unfit for human food, yet a standing arrangement exists whereby the carcasses are disposed of whole to non-Jewish butchers. Let us hope the time is not far distant when every butcher will be compelled to provide, on his own premises, ample refrigerator accommodation; when meat and like foodstuffs will not be permitted to be exposed to the dirt and dust of highways; when large public refrigerators will not be permitted to be utilised as a refuge for those destitute of all moral compunction in their desire to store or hide putrid, decayed, unwholesome and degraded foodstuffs.—Mr. Littlewood, Professor A. S. F. Grünbaum, Dr. R. Veitch Clark, Dr. J. Eddison, and Dr. J. Allan took part in the subsequent discussion.

SHEFFIELD MEDICO-CHIRURGICAL SOCIETY.—A meeting of this society was held on Feb. 29th, Dr. H. Ernest Knight, the President, being in the chair.—Mr. E. F. Finch opened a discussion on the Treatment of Fractures and their Results. His remarks were summarised from the examination of 200 cases of fracture of the long bones which had been treated at the Sheffield Royal Infirmary during the five years 1906 to 1910. He summed up the treatment shortly as (1) preventing further deformity; (2) "setting" the broken bone; and (3) fixing the parts at rest. The "setting" must be done by manipulation, with or without operation. It should be more often controlled by the skiagraph. X rays should be used more often in making a diagnosis, particularly in injuries in the neighbourhood of joints and in the carpus and tarsus. Splints, using the word in the broadest sense, must be employed to keep the parts at rest. The functional result is more important than the anatomical. So the lines of strain and movements required must be kept in view rather than the anatomy. One must endeavour, if possible, to anticipate disabilities likely to occur after the injury and to preserve the alignment of the bone. This latter point is of importance in the prevention of traumatic osteo-arthritis, which condition was present in 18 per cent. of the cases. He was of opinion that all fractures of the vault of the skull should be operated on. He considered fractures of the long bones under two heads: (1) those in the neighbourhood of joints; and (2) those of the shaft. In the neighbourhood of the shoulder-joint the treatment should be either by axillary pad or by extension with full abduction of the arm; in the elbow-joint region the forearm should be first supinated and then flexed fully. Passive movement should be delayed for two weeks. Active movement can be allowed after the fifth day. Fractures of the shaft of the humerus are best treated by a double wedge splint. Colles's fracture should always be disimpacted either by manipulation, wrench, or operation. The treatment of fracture of the femur up to 14 years, judging by results, is satisfactory. After this age the question of operation should be seriously considered. Fractures in the neighbourhood of the hip-joint are more common than supposed, giving rise to various degrees of coxa vara. In the neighbourhood of the knee-joint the results following treatment by extension are the best. Spiral fractures of the tibia must be operated on to get good results. In a Pott's fracture the backward displacement must be especially corrected. Details as to the average time in hospital and off work were given.—Mr. F. A. Hadley alluded to the danger of disasters occurring due entirely to the method of treatment, when cases had to be dealt with under unfavourable circumstances, as at

distances in the country. Irretrievable damage might occur to a limb in less than 24 hours which had been put up in complete flexion. Under such conditions some of the older methods were the safest. In operative cases he referred to the difficulty the surgeon often encountered after reaching the bone, in doing anything useful. The greatest value of open operation lay in the removal of bone fragments and blood clot from the soft tissues. Very often simple suturing of the periosteum was all that was required. Plates so often had to be removed that he preferred to do without them unless they were absolutely necessary. The reason that osteotomy was so successful was that the fracture was made whilst the muscles were relaxed.—Dr. D. Gray Newton showed a new truss for moveable kidney. It is designed and made on the cross action principle. The body spring exerts a pressure upwards, backwards, and slightly inwards. The front pad is made of thin metal plates connected by springs. The back pad lies on the opposite side of the body at a higher level, and consists of a thin metal plate to which a ball-and-socket joint mount is attached.

BRIGHTON AND SUSSEX MEDICO-CHIRURGICAL SOCIETY.—A meeting of this society was held at the dispensary on March 7th, Mr. T. H. Ionides, the President, being in the chair.—The following cases, &c., were shown. Mr. H. H. Taylor: Two men on whom he had performed Tre. phining of the Sclera for Glaucoma, with satisfactory results. —Mr. G. Morgan: A girl, 6 years of age, who showed a Great Enlargement of the External Malleolus of the Right Fibula. Shortly after birth it was noticed that the right fibula at its lower end was larger than the left, but this had not been seen to make any progress till about six months ago. The swelling was not painful or tender, and there was no sense of yielding on pressure. The X rays showed a complete hypertrophy of the whole malleolus, and not an overgrowth of any one part, as in an exostosis. The general opinion was that an exploratory incision should be made to ascertain its nature.—Mr. A. G. Bate: A Uterus removed for Inveterate Prolapse. The interest of the specimen centred round the fact that 15 years ago a double oöphorectomy had been performed for fibroid growth. The organ showed a complete atrophy of the fibroid tissue.—Mr. H. G. Mallam: A Parenchymatous Goitre in a man of 60, which had commenced at about 40 years of age, had gradually increased till five years ago, since when it had remained stationary. It was not causing any symptoms. The treatment had consisted in the administration of thyroid extract and painting with iodine, with no result.—Dr. C. F. Bailey read a paper on Stereoscopic Radiography, which was illustrated by photographs and lantern slides of various bone and visceral lesions.

WEST LONDON MEDICO-CHIRURGICAL SOCIETY.—A meeting of this society was held on March 1st in the rooms of the Post-Graduate College of the West London Hospital, Mr. W. McAdam Eccles, the President, being in the chair.—Clinical cases were shown by the President and Mr. N. Bishop Harman.—At the commencement of the proceedings the President referred to the death of Lord Lister. Their society had a particular interest in recording the greatness of the work of the man who had gone from amongst them, for he was one of their members. A motion to convey the expression of the meeting to the relatives of Lord Lister was proposed by the President, the members standing to signify their agreement.—Mr. F. L. Provis read a paper entitled "Pain in Women in the Iliac Region and in its Immediate Neighbourhood." He classified the causes of such symptoms as arising from: (1) Certain general disorders; (2) disorders of the nervous system; (3) from abdominal disorders; (4) disorders of the generative organs. The range of the causes of this symptom necessitated a limitation of their review, and he proposed to limit it to the last group. Displacement of the uterus was the most common cause. Palliative measures failed to relieve these cases; surgical treatment was necessary so as to prevent involvement of the appendages. Ventrifixation he thought the best operation. Dysmenorrhœa other than spasmodic was either congestive or inflammatory. Referred pain to the ilium was common. Frequently no alteration of the ovary could be found except tenderness; in such cases there was probably an ovaritis or ovarian neuralgia. It was a neurosis or neurasthenic condition. The fact that in many a slight enlargement of the Fallopian tube could be made out pointed to a possibly inflammatory origin; cases should be treated as such. In a very few cases only was removal of the ovary justifiable. He next considered alterations in the position and relations of the broad ligaments whereby they tended to obstruct the entrance of the pelvis, or became adherent to the gut and obstructed the passage of fæces. It was a true proptosis, and he considered it of fairly frequent occurrence. It necessitated operative interference with subsequent abdominal massage.—The President said that pain in the iliac region was so common that all of them, whatever their particular range of work, would be grateful for the paper of Mr. Provis. It should not be forgotten that it occasionally was found in middle-aged stout males as an indication of digestive troubles. In young women it was not infrequently seen with spinal curvature; the patient often significantly placed the fingers of the hand over the right iliac fossa and the thumb towards the right sacro-iliac synchondrosis. In these cases he thought the scoliosis secondary to some pelvic trouble.—Dr. J. A. Mansell Moullin said the particular conditions spoken of by Mr. Provis were well known and capable of exact diagnosis. The difficulty began when none of these conditions was present. Yet the patient might be a confirmed sufferer, her life rendered almost intolerable by constant aching pain, and they wanted to know the cause of it. He had little doubt that pain was ovarian; it only occurred during reproductive life. He considered it possibly due to the development, growth, and enlargement of the Graafian follicle and its final rupture—pain analogous to that associated with the eruption of a tooth.—Mr. Rickard W. Lloyd and Mr. Herbert W. Chambers joined in the discussion, and Mr. Provis replied.

Reviews and Notices of Books.

The Mechanism of the Heart Beat, with Especial Reference to its Clinical Pathology. By THOMAS LEWIS, M.D. Lond., M.R.C.P. Lond., D Sc., Lecturer in Cardiac Pathology, University College Hospital Medical School; Physician to Out-patients, City of London Hospital for Diseases of the Chest. With 5 Plates. London: Shaw and Sons. 1911. Pp. 295. Price 16*s.* 6*d.*

THIS important monograph, which while containing much new work affords also a review of the most important recent observations upon the cycle of the heart's action in health and disease, is a valuable contribution to cardiac physiology and pathology. Dr. Lewis wisely starts from the beginning and does not assume a knowledge of the methods of investigation on the part of his readers. Although the matters of which he treats are not infrequently complex and involved, and the analysis of some of the records shown is intricate, he writes of them clearly and simply, and explains as he proceeds. The observations upon which the book is based comprise a large number of clinical records and experimental studies. Dr. Lewis has endeavoured to elucidate the abnormal actions of the heart in disease by comparison with similar disturbances artificially produced under experimental conditions. The conclusions arrived at and the suggestions offered in explanation of the commoner forms of cardiac irregularity are based upon graphic records, chiefly polygraphic and electro-cardiographic tracings, with which the book is copiously illustrated. In the preface a high meed of praise is accorded to the results of the graphic method in the investigation of cardiac conditions.

The book opens with a short but clear and well-illustrated account of the recent anatomical discoveries in connexion with the heart. The sino-auricular node and the junctional or conducting tissues with their relations to the network of Purkinje are described, and the current views as to their functions are stated. Intra-auricular pressure curves are discussed and compared with the venous records obtained by the Mackenzie polygraph. This instrument is described and the forms of the normal tracings obtained by its use figured and analysed. The various positive and negative

waves are indicated by the letters a, x, c, x′, v, and y. The incidents occurring in the cardiac cycle simultaneously with each of them are discussed in relation to the production of these waves. Einthoven's string galvanometer is then described, and its application to the record of the heart's cycle is fully explained. The forms of curve obtained with different leads from the body are illustrated, and the variations in the curves are referred to the corresponding occurrences in the cardiac cycle. An interesting chapter is devoted to the presentation of new evidence that the "pacemaker" of the mammalian heart is localised in the immediate neighbourhood of the sino-auricular node. The methods of analysis of arterial pulse curves, of polygraphic and electro-cardiographic records are then described in detail. The production of heart-block experimentally in the mammal forms the subject of a chapter introductory to a full discussion of heart-block as observed clinically. The occurrence of heart-block as a result of experimental interference with the auriculo-ventricular bundle is established by reference to the work of Erlanger, and Cohn and Trendelenburg. In connexion with heart-block in man, the clinical signs and the tracings obtained are reviewed, and then the post-mortem findings in the recorded cases are tabulated and discussed. The conclusions arrived at are that auriculo-ventricular heart-block, as it has been observed clinically, has been due in the great majority of cases, if not in all, to structural alteration in the auriculo-ventricular bundle, and that digitalis and vagal heart-block have been usually the outcome of the action of the drug or the nerve upon tissues already deficient in the power of conduction.

In classifying and analysing other disturbances of the cardiac rhythm Dr. Lewis finds that the five cardiac functions of rhythmicity, excitability, contractility, conductivity, and tonicity, which have been used by many other writers as the basis of classification, are not satisfactory for that purpose. He therefore substitutes a scheme by which the beats observed are divided into two classes—homogenetic and heterogenetic, the former being of spontaneous origin in areas of muscle unaffected by extraneous impulses, the latter being exclusively of pathological character and presenting well-defined time relations, differentiating them from normal beats. The so-called idio-ventricular rhythm is given as an example of a homogenetic rhythm, certain premature ventricular beats, or "extra systoles," as instances of heterogenetic contractions.

The characters of heterogenetic contractions originating in various parts of the heart are then described, and the methods by which they can be referred to their source of origin are explained. Various heterogenetic rhythms of ventricular and auricular origin are then discussed, and examples are given both of experimental and clinical varieties of each. Upon the basis of these observations the obscure condition of paroxysmal tachycardia is analysed. A classification of tachycardias in general is given, homogenetic and heterogenetic varieties being separated. The latter are subdivided, various grades being separated, according to the situation of origin of the ectopic rhythm up to the extreme form of auricular fibrillation. The evidence upon which the conception of auricular fibrillation is based is then presented. Its occurrence as a clinical entity, both in man and the horse, is established, and its application to the explanation of cases of complete and permanent irregularity is discussed in an exhaustive and interesting fashion. Other conditions examined in connexion with the heart beat are bigeminy, the vagus, the Adams-Stokes syndrome, and alternation.

Dr. Lewis dedicates his book to James Mackenzie and Willem Einthoven, and expresses his indebtedness to the Beit Memorial Research Fund for the leisure in which to write. His book constitutes an important addition to our knowledge of the cardiac action, and we have read it with great interest.

Prevention of Disease and Inefficiency, with special reference to Indian Frontier Warfare. By Lieutenant-Colonel PATRICK HEHIR, I.M.S. Second edition. Allahabad: Pioneer Press. 1911. Pp. 656.

THIS volume is a full and comprehensive treatise on hygiene and preventive medicine as applied to India, and especially with reference to military conditions and requirements. After an introduction dealing with elementary notions as to the physical geography and climate of the country, and the importance of health preservation from the public service point of view, the author deals in Part I. with the physical training and development of the soldier; in Part II. water-supply, air and ventilation, food and dieting, the construction and sanitation of barracks, and the proper management of camps and cantonments are considered; Part III. treats of personal hygiene; and in Part IV. the prevention of disease in peace and war, and the causation and prevention of the principal tropical diseases individually are somewhat fully discussed. Parts V. and VI. deal shortly with statistics and Indian frontier sanitation in warfare. It is seen that the scope of the work is considerably more extensive than its title would lead one to expect. It is a manual of hygiene with special reference to Indian conditions, as to which Lieutenant-Colonel Hehir's experience and previous published work entitle him to speak with authority.

In regard to acclimatisation, the author alludes to the European soldier as being transferred suddenly from the United Kingdom, with an average temperature of 51° F., to India, with an average of 82°. The "average" temperature for these islands has some hygienic significance, but one might as well speak of the average temperature of Europe as of that of India; even the word "climate" is used by Mr. H. F. Blanford in the plural when applied to India; still less can any idea be attached to "average temperature" when referring to such a vast and varied extent of the earth's surface. The advice given as to the mode of life and precautions to be taken for the preservation of health is excellent. The description of water-supplies and of the risks to which they are exposed is also comprehensive and judicious. As to the examination of water, perhaps more importance is attached to chemical analysis than would now be generally admitted, but the bacteriological examination is so delicate in its technique as to be almost impossible of attainment under ordinary conditions of military service in India. As to filtration, it is said that there is little to choose between the Chamberland and Berkefeld forms. If arrest of germs is the object sought for, there is a good deal of difference between them, as the work during recent years of Bulloch and others has shown; whether either of these, or any other bougie form, is suitable for ordinary Indian use is a matter of doubt; the closest and most constant supervision is necessary. Colonel Hehir does not mention the recent work of Haldane and others on ventilation, and still considers carbon dioxide and organic effluvia to be the chief harmful factors. It is the temperature and the humidity that are now recognised as being more important.

The subject of food and dieting is comprehensively treated, the author being acquainted with most of the varied conditions obtaining in India. In regard to British troops, he makes the excellent recommendation that their principal meal should be served in the evening, a light lunch only being taken in the middle of the day. This has been suggested before, but a deeply rooted conservatism has hitherto resisted any change; in time it will probably come about (note that the old-fashioned heavy "tiffin" has now been generally given up), and people

will wonder why it was not done before; as the author says, "from a physiological and hygienic standpoint the change has all in its favour." Colonel Hehir is very temperate in dealing with the alcohol question; abstinence is to be encouraged, but the men are not to be coerced into *total* abstinence. The detailed information as to sanitation of barracks, camps, and cantonments is very useful. The author has done excellent service in gathering together and clearly setting down the experience of old residents in the tropics for the benefit of military and civil officers newly arrived in the country. "At the risk of being considered old-fashioned," he strongly recommends the so-called cholera belt as an indispensable article of kit, though "many British officers consider it a fad." A full account is given of the necessary measures in all the important preventable diseases that occur in India, Malta fever and sandfly fever not being overlooked. In the concluding pages some points of organisation in regard to frontier campaigns are dealt with, and a few statistical data as to disease prevalence in such warfare are detailed; in the next edition the author might usefully enlarge on this part of his subject.

We have indicated the scope of Colonel Hehir's treatise, which will be of great use to all medical men in India. The Commander-in-Chief (to whom the book is dedicated) contributes a short preface, and refers to the increasing interest in disease prevention that has been awakened in India during recent years. Sir O'Moore Creagh is known himself to be well acquainted with military sanitary arrangements; his commendation of the present work will doubtless lead to a wider diffusion of knowledge on the subject throughout the country.

Annual Report of the Proceedings of the Diseases of Animals Acts of the Board of Agriculture and Fisheries for the Year 1910. London: Wyman and Sons.

THIS brochure embodies the report of the Chief Veterinary Officer of the Board of Agriculture, Mr. S. Stockman, M.R.C.V.S., and the Assistant Secretary of the Animals' Division, Mr. A. W. Anstruther, and is particularly interesting this year because of the recent foot and mouth outbreaks amongst cattle. The Board, and especially the Veterinary Department, deserve great credit for the success which has attended their recent efforts against this highly contagious disease which periodically devastates the herds of cattle in certain European countries, and which once played such havoc and caused such loss amongst the dairy cows of Great Britain. The "stamping-out" method may be drastic, but it is undoubtedly effective, and for a country like Great Britain, which is surrounded by water, there is no doubt that it is the best prophylactic measure to adopt.

At the laboratory 3782 specimens were received and were reported upon from animals which were suspected of swine fever, anthrax, sheep-scab, glanders, rabies, epizootic lymphangitis, and pleuro-pneumonia. It is gratifying to note that in none of the specimens suspected of the three latter diseases was the diagnosis confirmed, and so England is still free of these scourges. Experiments are being continued upon epizootic abortion of cattle. A new variety of trypanosome has been discovered, the first to be reported in British cattle which have never been out of this country. The hypoderma bovis and its pupa stage (the warble), also sundry varieties of ticks found on sheep and cattle, have been the subject of a series of observations of great interest to medical entomology, and the notes are worth perusal by scientists engaged in like pursuit. Sixteen valuable pedigree cattle were immunised against red-water before being shipped to the colonies, a new departure, for the carrying out of which Mr. Stockman's experience in the Transvaal, before he became chief of the veterinary staff of the Board of Agriculture, renders him particularly fitted.

The Assistant Secretary of the Board, Mr. Anstruther, in the portion of the report which emanates from his pen, deals ably with the rules and regulations which have been so effectually carried out by his staff, and the two sections (the veterinary and the lay inspectors) have worked loyally together.

In its many-sided capacities, and dealing, as it of necessity does, with all classes of animal, the officers of the department have their hands very full, and the tabular statistics at the end of the report give ample evidence of the enormous mass of work which comes under their control. There is no country in the world where the work is carried out in a better fashion, and by the presence of an efficient department of this kind the agricultural community is saved many hundreds of thousands of pounds annually.

Meine Präparationsmethode des Operationsfeldes mittels Iodtinktur. Von Kgl. Rat Dr. ANTONIO GROSSICH, Primarchirurg am Ospidale civico in Fiume. Berlin and Vienna: Urban and Schwarzenberg. 1911. Pp. 80. Price 3 marks.

THE employment of a solution of iodine was introduced in the spring of the year 1907 by Dr. Grossich, who in this volume gives a full account of his method. It is too often believed that the use of solutions of iodine in surgery is recent. Several surgeons, however, used iodine in various ways in surgery at least as long ago as 1880, but it is certain that the publication by Dr. Grossich of his use of iodine has led to a very wide employment of it all over the world. This volume contains an account of the mode of using iodine in wounds, in aseptic operations, and in septic operations, and the results obtained are described. The author discusses the various harmful complications that have been said to follow its use, and shows that for the most part no harmful effects occur. It is important for the reader of this book to bear in mind that the tincture of iodine employed by Dr. Grossich is a 10 per cent. solution, and that it is four times as strong as the tincture of the British Pharmacopœia. The author, of course, lays great stress on the importance of not washing the skin before the iodine is applied. The volume contains also reprints of three papers already published by the author on the subject, and he gives abstracts of a large number of the articles written by other surgeons on the same subject. These abstracts occupy more than half the book.

The Significance of Existence. By I. HARRIS, M.D. Koenigsberg. London: Longmans, Green, and Co. 1911. Pp. 324. Price 6*s.* net.

IN his preface Dr. Harris almost disarms criticism by saying "much in this book is incomplete, and some of its statements are sure to call forth criticism"; but should the critic ask why, then, was the book written? he is answered in the next sentence, "I hope that the general conclusions arrived at will not thereby materially suffer." The first chapter is entitled "Infinite and Finite" and its obscurities are seen to depend on the author's puzzling interpretation of the meaning of words. For instance, on p. 26 we read, "Finite and infinite do not exclude each other, they do not possess antagonistic characteristics, but their relation to each other is really corresponding to that subsisting between the adjective round and the noun blue." On p. 28 are two conclusions which materially suffer from the same cause. The following are the quotations: "We must conclude, therefore, that existence possesses the following attributes, eternity, infinity, and causelessness. But in the same existence *finity* (*sic*) must

be included"; and "we conclude, then, that finity stands in the same relation to infinity as eternity stands to infinity—namely, that they are attributes of existence in exactly the same sense." A printer's error on p. 47, "a thousandth of which compose an atom of hydrogen," makes one hope that the obscurity of the quoted sentences may in part be due to printers' errors; but whatever words are substituted, the meaning in many places eludes the reader. On p. 289 it is stated that "the very essence of harmony is to produce an alternate state of activity and repose." Why of harmony? There might be some conceivable meaning by substituting for it the expression "a drum tattoo." Most of us understand by harmony the combination of certain simultaneous notes. What has this to do with an alternation of activity and repose? In the last chapter, headed "Recapitulations and Conclusions," occurs the following: "There is hardly a conclusion of graver importance to humanity and resting on a less secure foundation than the generally accepted notion of the existence of an aim in life (p. 314) ..... the whole idea of purpose and aim in life, based as it is on erroneous conclusions, has, since the dawn of civilisation, proved itself the most potent factor in retarding and stunting humanity" (p. 317). The final conclusion is reached on p. 322: "Man will only become himself again when all values are swept out of existence, moral or otherwise ..... every faculty should be studied according to its peculiar nature ..... without aiming at any ulterior purpose. ..... Whither the activities of our impulses lead us is no business of ours to inquire ..... we are even unable to say that progress, for instance, is a more desirable state of existence than retrogression" (p. 323). For those who hold such views the book may be of interest.

JOURNALS AND MAGAZINES.

Quarterly Journal of Microscopical Science. Edited by Sir E. RAY LANKESTER, K.C.B., F.R.S., with the coöperation of ADAM SEDGWICK, M.A., F.R.S., SYDNEY J. HICKSON, M.A., F.R.S., E. A. MINCHIN, M.A., F.R.S., and GILBERT C. BOURNE, M.A., F.R.S. February, 1912. London: J. and A. Churchill. Price 10*s.* net.—The opening article of this number is on the Condition of the Epidermal Fibrils in Epithelioma, by Mr. George Arnold, M.Sc., from the Cancer Research Laboratory, University of Liverpool. His observations were made in the course of some experiments which were carried out with the object of demonstrating chondriosomes in malignant tissues. In the course of a synopsis of previous writings on the subject of epidermal fibrils and chondriosomes from those of Ranvier in 1879, to those of Meves in 1911, he states that the following nomenclature is now in general use: (1) Mitochondria, granules which may be arranged in chains or scattered through the cytoplasm; (2) chondriokonts, rod-like bodies or threads which may sometimes arise from the fusion of rows of mitochondria; and (3) chondriosomes, a general term to include all cytoplasmic structures which are of the nature of mitochondria or chondriokonts. Mr. Arnold's observations throw some light on the origin of the well-known "cell nests" occurring in epitheliomata, and also go to support the view of Rosenstadt that protoplasmic bridges between one prickle-cell and another do not exist. The material used was cut from the central portion of an epithelioma of the tongue tangentially to its free surface. Immediately after removal it was fixed in Flemming's solution, modified according to the formula of Meves for the specific staining of chondriosomes. The sections (5μ thick) were stained with Heidenhain's iron-alum hæmatoxylin and counter-stained with orange G. The microscopic appearances are minutely described in the memoir and figured in a coloured plate. The general conclusions are summed up as follows. The malignant cells composing an epitheliomatous growth undergo a gradual degeneration which may take two paths. 1. When the cell obtains an excess over the normal of fibrillar material the fibrils form a mantle round the nucleus which atrophies, and this is followed by the death of the cell. Such cells usually collect into groups and form the epithelial pearls or cell-nests. 2. In the other form of degeneration cells from which the fibrils have been withdrawn are brought to an end by the breaking down of the nuclear membrane, the dissolution of the contents into the cytoplasm, and finally by the fragmentation of the whole cell. Mr. G. R. Mines contributes a note on the Mechanism of Discharge of the Cuvierian Organs of Holothuria Nigra. It is well known that when this creature, the large sea-cucumber common at Plymouth, is irritated it responds by emitting a number of white conical bodies. These, the Cuvierian organs, rapidly elongate, shooting through the water while remaining attached at their bases to the animal, to form long, intensely sticky tubes. Mr. Mines found that by introducing a fine glass cannula or a hypodermic needle into the base of an undischarged organ and injecting fluid, the tube is shot out in precisely the same way as in a normal discharge by the living animal. The pressure needed to cause elongation of the tubes is about 20 or 30 centimetres of water. He also found experimentally that there was a rise of internal pressure in holothuria on irritation, and he believes that the discharge of the Cuvierian organs is due to forcible injection of the tubes with water. Freda Bage describes the Histological Structure of the Retina of the Lateral Eyes of Sphenodon Punctatus, with special reference to the sense-cells. The observations were made in the Zoological Department of King's College, London. After an exposition of the methods of preparation and a general account of the various layers of the retina, it is stated with regard to the sense-cells that sphenodon appears to form no exception to the rule that cones only are present, to the exclusion of rods, in the reptilian retina. It is generally admitted that oil globules do not occur in rods, but they are present in nearly all the visual cells in sphenodon. In this memoir the retinal cones of sphenodon are classified as (1) ordinary single cones; (2) small single cones; and (3) double cones subdivided into (*a*) near cones, and (*b*) far cones. The longest of the memoirs in the present volume is on the Problem of Sex Determination in Dinophilus Gyrociliatus, by Mr. Cresswell Shearer. In the conclusion of his paper, which is illustrated by a profusion of coloured plates, he states that the most singular feature of the phenomena observed was the peculiar manner of early fertilisation and the subsequent division of the sperm in the oögonial cells. This would seem to be without parallel, although something similar possibly takes place among the rotifers.

Journal of Pathology and Bacteriology. (Official Organ of the Pathological Society of Great Britain and Ireland.) Vol. XVI., No. 3. Published from the Department of Pathology, University of Cambridge. Price 7*s.* 6*d.* Yearly subscription, £1 1*s.*—Dr. Ernest E. Glynn and Dr. G. Lissant Cox, of Liverpool, in Further Observations upon Certain Sources of Error in the Opsonic Technique, record the results of an investigation into the effect of rotation of the opsonic pipette during incubation; rotation once every two minutes has the same effect on phagocytosis and experimental error as keeping the pipette stationary; a rotation once every half minute or less increases the error. If the leucocytes are allowed to stand in normal saline solution at room temperature for two hours the error is increased and there is diminution of the phagocytic capacity. An emulsion of staphylococcus in normal saline solution does not settle appreciably in two hours. Dr. J. F. Gaskell,

who carried out his investigations in Freiburg, describes the Changes in Glomeruli and Arteries in Inflammatory and Arterio-sclerotic Kidney Disease, and attempts to reconcile the pathological conditions found in various forms of contracted kidney with the clinical manifestations. The changes dealt with are divided into two groups: 1. Those accompanying and consecutive to inflammation of the kidney, in which lasting inflammatory changes are always due to true glomerulo-tubular nephritis. Interstitial and tubular inflammation alone does not lead to chronic changes. He distinguishes three stages: (*a*) the acute stage —acute parenchymatous nephritis; (*b*) the stage of repair—the large white kidney, in which death may or may not be due to the renal condition; (*c*) the sclerotic stage—the secondary contracted kidney, which usually causes death by uræmia at an early age. He also describes embolic focal nephritis, the ulcerative endocarditis type where the clinical picture is that of the cardiac condition. 2. Those primarily vascular in origin: (*a*) the senile arterio-sclerotic cases found in old people, where the vascular degeneration spreads from the large arteries to the renal vessels, and there being no hypertrophy of the heart, death is due to intercurrent disease; (*b*) the genuine *Schrumpfniere* cases with widespread vascular changes, especially in the brain, and marked hypertrophy of the heart. In this class death is usually due to cerebral hæmorrhage. The author claims that the microscopic picture is different in all these types of renal disease, and the paper is accompanied by plates giving examples typical of each condition. Dr. J. W. McLeod, of Glasgow, writing on the hæmolysin produced by pathogenic streptococci and on the existence of anti-hæmolysin in the sera of normal and immunised animals, says that by growing certain strains of pathogenic streptococci on bouillon containing from 15 to 20 per cent. of horse serum, previously heated for one hour at 56° C. and slightly alkaline to litmus, he is able to obtain actively hæmolytic cultures. The hæmolysin is not entirely endotoxin, and the filtrate obtained by using a Maassen or Doulton filter is actively hæmolytic, though to a less degree than the original culture. The streptolysin is greatly weakened by heating at 49° C. for 30 minutes and destroyed by heating at 55° C. for the same period; its power is unimpaired by placing it in the ice-chest for from eight to ten hours. The impairment which takes place under the above conditions is not due to formation of streptolysoid, but to the formation of a number of more feeble hæmolytic molecules, and partly also to the complete destruction of another portion of the molecules. In man, horse, rabbit, and guinea-pig an anti-hæmolysin is normally present in the serum—in equal amounts in the sera of different animals of the same species; it is not an albuminoid globulin, but is probably lipoid in character. Injection of the streptolysin into the ordinary laboratory animals fails to produce an immune anti-hæmolysin, nor is any such body to be found in the sera of men who have suffered from prolonged streptococcal infections. No hæmolysis follows the injection of the streptolysin into living animals. From an examination of many strains of streptococci from various sources, the author concludes that virulence and hæmolytic power are closely associated among the pathogenic streptococci. Dr. H. H. Dale and Mr. P. P. Laidlaw, of London, describe a Simple Coagulometer in the form of a narrow glass tube containing a small shot. The time of coagulation is that at which the shot fails to fall, when the tube, filled with blood, is held in a vertical position. The operation takes place in a water bath between 35° and 40° C. Sources of error are discussed and tables of results given. Dr. J. O. Wakelin Barratt, of Liverpool, in a paper on the Incomplete Fixation of Complement and Amboceptor, gives the results of an investigation into the extent to which complement and amboceptor contained in serum are withdrawn by the addition of small amounts of antigen, furnished by red blood cells. He concludes that the hæmolytic power of serum is unaltered by varying the proportions of amboceptor and complement present, provided that increase in the one is accompanied by diminution in the other. If complement and amboceptor are withdrawn from normal serum, by the addition of rabbits' red cells as antigen, the amounts withdrawn are proportional to the amounts present in normal serum. If the bodies are present in serum in proportions differing from those obtaining in normal serum the addition of antigen withdraws them in unequal amounts; if complement is present in excess, more complement than amboceptor is withdrawn, but if complement is present in subnormal proportions, the amount withdrawn is proportionately small. An obituary notice of Professor Henri Stilling, of Lausanne, is contributed by Dr. Marullaz. Abstracts of the Proceedings of the Liverpool Meeting of the Pathological Society of Great Britain and Ireland occupy 25 pages of the journal.

Jahreskurse für Aerztliche Fortbildung. Munich: Lehmann. Price 16 marks yearly.—As usual, the January number is given up to a review of general biology and pathology. Professor Johannes Müller contributes an article on the Nature of the Chemical Processes in the tissues, and Professor Lubarsch writes on the Pathological Significance of the Thyroid, Thymus, and Pituitary Glands. The first contribution discusses in considerable detail the essential nature of the chemical processes that take place in the cells of the body generally, with only passing reference to a few diseases, such as diabetes. The modern doctrine is expounded and illustrated that the protoplasm of the cell is in a state of high chemical instability, subject to the reactions of intracellular ferments which are reversible in their action (as Croft Hill was the first to point out). Certain of these ferments are well recognised, such as those bringing about autolysis, and the diastatic and lipolytic enzymes of the tissues. The synthesis of the complicated molecules in protoplasm is due to the reversed action of the same ferments, energy being supplied by the absorption of heat, whereas when these substances are resolved into simpler components heat is evolved. Professor Lubarsch describes briefly the effects of removing the thyroid gland in man and animals, and gives a description of the parathyroid glands, which are believed to regulate the calcium metabolism of the body. Changes have been described in them in cases of tetany, osteomalacia, puerperal eclampsia, and other diseases in man. Just as the parathyroids regulate the calcium metabolism, so the thyroid deals with the iodine and phosphorus compounds of the body. An account is given of the changes in the various organs in cretinism. With regard to the causation of goitre, it is pointed out that after heating the water of the famous Kropfbrunnen (goitre-wells) to 80° C., it will no longer induce the disease in animals. But passing it through a Berkefeld filter does not alter it in this respect (Wilms, Birscher, Kolle), which is evidence against a bacteriological causation of endemic goitre. The pathology of Graves's disease and its relation to iodine are discussed at length, also the "thyroid heart" and the various somatic and visceral abnormalities. The review closes with an excellent account of the relation of the thymus to disease, and especially to sudden death; followed by a few words on acromegaly and splanchnomegaly in association with lesions of the pituitary gland.

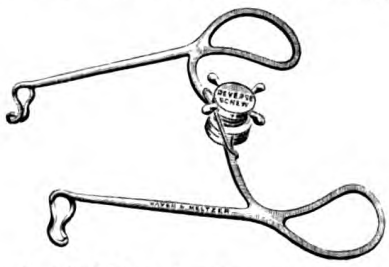
The February number contains an article by A. Hoffmann on Cardiac Weakness, and another by R. Staehelin on the Causation and Treatment of Bronchial Asthma. Hoffmann points out that we no longer rely, as we once did, principally on the occurrence of murmurs or on enlargement of the area of cardiac dulness to make a diagnosis of impairment of the heart's action; the latter,

in some circumstances, may even be a favourable sign Later came a time when irregularity of the pulse-rate was regarded as of grave significance, but now we know that it may persist for years. Attention has more recently been directed to the blood pressure and to observation of the electro-cardiogram. He discusses heart weakness under the headings of Absolute Cardiac Insufficiency, in which the heart is unable to do its ordinary work without disturbance, and Relative Cardiac Insufficiency, in which it can respond to ordinary, but not to extraordinary, demands upon it. It is much easier to diagnose the first than the second, which includes those cases in which the heart falls under the influence of anæsthetics, operations, confinements, and so on. Warning may be given by such signs as dyspnœa or cyanosis. Blood-pressure measurements, plethysmography, Sahli's sphygmobolometer, or electrocardiography may also be of assistance. The treatment of both conditions is discussed, reference being made to exercises, baths of various sorts, and drug treatment by digitalis, camphor, caffeine, and other well-known substances. There is a brief summary of recent researches on the heart, in which the work of Lewis, Keith, and other English observers is mentioned as well as that of a number of Germans. Staehelin passes in review the various theories of the causation of bronchial asthma, the diaphragmatic cramp theory, the bronchial spasm theory depending on vagus impulses, the secretion theory based on the occurrence of Curschmann's spirals, Charcot-Leyden crystals, spangle-epithelium, and eosinophile cells, and the theory of swelling of the bronchial mucous membrane. He thinks it probable that the underlying factor is a vagus impulse leading to all three of these changes. With regard to treatment of the attack, the psychological factor has to be considered, also various methods for altering the rhythm of the breathing. Of drugs, morphia is given the first place. Atropine and adrenalin are also discussed. Between the attacks, potassium iodide may be given, and measures taken to deal with nasal polypi, pharyngitis, or constipation, all of which may provoke the spasms. Preparations of atropine are recommended, and so are the various nasal inhalations, which may be combined with cocaine. The breathing of asthmatics must be disciplined, and suggestion and hypnosis sometimes have a place in the treatment.

New Inventions.

RETRACTOR FORCEPS FOR MINOR SURGERY WOUNDS.

THE forceps illustrated below owes its efficacy to two points: the eccentric arms increase the working gap or degree of excursion; and the pivot, provided with a reverse screw, stops the inward thrust of the arms when extending the sides



of the wound. The kidney-shaped handles give a better hold, and, when the instrument has been fully extended, they overlap or occupy less space. My design has been carried out by Messrs. Mayer and Meltzer, Great Portland-street, London, W.

H. ELLIOT-BLAKE,
Bognor. M.R.C.S. Eng., L.R.C.P. Lond., L.S.A.

BRITISH MEDICAL BENEVOLENT FUND.

AT the February meeting of the committee 28 cases were considered and grants amounting to £281 made to 27 of the applicants. Appended is an abstract of the cases relieved:—

Daughters, aged 50 and 48, of M.D. Aberd. Means very slender and health indifferent. Voted £2, and application to be reconsidered.

Widow, aged 45, of M.D. Edin. Has been in very poor health since the death of her husband last year, and asks for a little help to meet unavoidable expenses. Voted £5.

Widow, aged 50, of L.R.C.P. Practically unprovided for at husband's recent death after a long illness, but hopes to maintain herself and her children by taking boarders. Voted £10.

L.R.C.P., L.R.C.S. Edin., aged 55. Asks for a little help to tide over difficulties, which are quite expected to be temporary. Voted £10.

Widow, aged 46, of M.B., C.M. Aberd. Husband's savings quite exhausted by a long illness ending in death, and although temporarily earning sufficient to support herself, has incurred heavy expenses owing to the ill-health of a daughter recently deceased. Voted £10.

M.R.C.S., aged 55. Has had bad health for the last ten years, and has recently been incapacitated for several months, during which his practice has almost disappeared and unavoidable debts have been incurred. Proposes to make a fresh start in the colonies. Voted £10 towards passage money if emigration is decided on.

Widow, aged 41, of M.B., C.M. Edin. No income; has recently lost her husband after a two years' illness, and has five children to support. Voted £12.

M.R.C.S., aged 84. Only income a small Poor-law pension. Relieved twice, £24. Voted £12.

Daughter, aged 55, of late M.R.C.S. No income, and through failing eyesight is unable to earn more than a few shillings a week, which goes to support not only the applicant but two sisters who are quite unable to earn their living. Relieved twice, £36. Voted £18.

Daughter, aged 60, of late M.R.C.S. No income, and unable to earn a living on account of a painful deformity. Voted £12.

Widow, aged 56, of L.R.C.P. Edin. No income and practically dependent on a daughter earning only a few shillings a week. Relieved twice, £20. Voted £12.

Widow, aged 42, of M.R.C.S., L.R.C.P. Since husband's death, three years ago, has been endeavouring to establish a boarding-house, but has now exhausted her small capital. Three children, aged 13 to 6. Relieved twice, £24. Voted £10.

Widow, aged 52, of L.R.C.S. Edin. No income; endeavours to support herself by nursing, but has no certificate. Children unable to help. Voted £12.

Daughter, aged 63, of late M.R.C.S., L.S.A. Supplements a small pension from a charitable society by taking boarders, but finds increasing difficulty in meeting her expenses Relieved once, £10. Voted £10.

Widow, aged 67, of L.R.C.P., L.R.C.S. Edin. No income and unable to obtain employment; no children. Relieved four times, £34. Voted £12.

Daughter, aged 37, of late M.R.C.S. Is a nurse by profession, but unable to support herself as such owing to incurable deafness, and is consequently dependent upon uncertain earnings from needlework, &c. Relieved seven times £63. Voted £10.

M.R.C.S., aged 77. Was appointed doctor to a Medical Aid Association 18 months ago but has found it impossible to obtain his salary. Relieved once, £18. Voted £6.

Widow, aged 63, of M.R.C.S. Had a little capital at husband's death some years ago, but lost it in the attempt to establish a boarding house and is now quite without means. Relieved once, £12. Voted £12.

Daughters, aged 71 and 64, of late M.R.C.S. Were fairly provided for at father's death but have lost practically everything through unfortunate investments and are now living together in a bed-sitting room. Relieved once, £18. Voted £18.

Widow, aged 70, of M.R.C.S. Nursed and supported her husband for several years and is now dependent for a home on a son-in-law who can ill-afford to help. Relieved twice, £20. Voted £10.

Widow, aged 67, of L.F.P.S. Glasg. Has supported herself with occasional grants from this fund, since her husband's death 38 years ago, but is now dependent on a daughter earning £1 a week as a cashier. Relieved seven times, £72. Voted £12.

Widow, aged 67, of M.R.C.S. Only income a small pension from another charity, and is frequently laid up for some months together owing to a chronic affliction. Relieved seven times, £64. Voted £5.

Daughter, aged 61, of late L.S.A. Has supported herself for several years by letting lodgings, but finds increasing difficulties owing to ill-health and competition. Relieved three times, £36. Voted £12.

Widow, aged 62, of M.R.C.S. Quite unprovided for at husband's death five years ago, and endeavours to maintain herself by receiving boarders. Children only just self-supporting. Relieved once, £12. Voted £10.

Widow, aged 62, of M.R.C.S. Quite unprovided for at husband's death, and dependent on a married son earning a small weekly wage as a shop assistant. Relieved eight times, £94. Voted £12.

Widow, aged 62, of M.R.C.S. No income, and health indifferent; children only able to give slight assistance. Relieved 13 times, £147. Voted £12.

Widow, aged 53, of M.R.C.S. Since husband's death has tried to support herself by taking boarders, and is now in difficulties which she hopes will be temporary. Relieved twice, £22. Voted £5.

Contributions may be sent to the honorary treasurer, Dr. Samuel West, 15, Wimpole-street, W.

A CONFERENCE ON DIET IN SCHOOLS.—The National Food Reform Association is making arrangements for a conference on diet in public secondary and private schools to be held at the Guildhall, London, on Monday, May 13th. The Lord Mayor will preside at the opening session.

THE LANCET.

LONDON: SATURDAY, MARCH 16, 1912.

The Report of the Royal Commission on Vivisection.

THE report of the Royal Commission on Vivisection has at last been completed and published; and we are happy to be able to speak favourably of its recommendations, which throw only a single small sop to unreason, and in the main both satisfy the minimal requirements of the medical profession and protect the public against any dangerous interference with that prosecution of research which is necessary both for the continued improvement of the art of healing and for the attainment of increased power to prevent the occurrence of disease. The opponents of experimentation upon animals have very generally endeavoured to confuse the public mind by representing that experiments are performed in the interests of the medical profession alone, and that it is the duty of enlightened persons to protect the lower animals against cruelties which are perpetrated for the mere gratification of curiosity. The truth is, as everyone knows who has given a moment's impartial consideration to the subject, that an increased knowledge either of the causes or of the means of cure of disease is a direct and actual gain to the public, and is in some degree a loss to the medical profession, whose services are less in demand when the occurrence of disease is prevented, or when its course is curtailed by effective remedies, than when neither of these conditions is fulfilled. We have a crucial example in the case of rabies in the dog, with its necessary complement of hydrophobia in the human subject. The nature of the disease and the channels of its diffusion were made known by experiment; and this knowledge having been applied in practice by the sagacity of Mr. WALTER LONG, without regard to the clamour of ignorance, the disease has disappeared from this country, and need never be permitted to return. Its absence cannot be said to have been of any special advantage to the medical profession, whose chances of infection were comparatively small, and whose aggregate remuneration must to some extent have been diminished; while it is noteworthy that the experiments by which the nature of hydrophobia was elucidated have also served to throw much light upon other obscure maladies of the cerebro-spinal system, such as epidemic meningitis and poliomyelitis. The fact is that, with improved methods and instruments of research, fresh questions are daily offering themselves for solution, and that these questions can only be solved by experiment. There has been no other method of discovering truth in the past, and it is certain that, so far as can be foreseen, no other is likely to present itself in the future.

The profession has borne with exemplary patience the accusations of wanton cruelty which have been brought against medical men of the highest distinction, and have probably thought that the personal peculiarities of the accusers furnished a sufficient refutation of them. They will none the less be gratified that these accusations have been carefully examined and tested by the Commissioners, and that the verdict based upon personal knowledge has been absolutely ratified by systematic inquiry. The stock agitators are dismissed with a few brief words, the Commissioners declaring that the existing Act has been administered by successive Home Secretaries and their subordinates "with good faith and with careful consideration of its terms," and that the holders of licences and certificates, with rare exceptions, "have endeavoured with loyalty and good faith to conform to the provisions of the law." It is further said that those who came before the Commission to give testimony in support of charges of cruelty "have either misapprehended or inaccurately described the facts of the experiments," and it is courteously contended that the witness must have been mistaken who described the results of an operation which had never been performed. This was the case of the marmot, which was for the time in a state of partial paralysis as a consequence of imperfect recovery from its natural hibernation, and which was said by Miss LIND-AF-HAGEBY to have had its spinal cord divided. As a matter of fact, nothing had ever been done to it, and it lived for two years after the alleged operation in perfect health. After dealing with such cases the Commissioners go on to warn the public against the falsehoods contained in circulars and advertisements which are freely distributed through various channels, and which they describe as calculated to mislead the public by suggesting that the animals in question were not under an anæsthetic. To represent that animals subjected to experiments in this country are wantonly tortured would, in the opinion of the Commissioners, be "absolutely false." They are, nevertheless, solicitous on the subject of pain which may be produced as an after consequence of experiment, as, for instance, of an inoculation which causes disease, and they desire the framing and enforcement of regulations under which animals thus suffering should be destroyed immediately, whether the object of the experiment had or had not been attained. It is mainly upon this point that Colonel LOCKWOOD and Sir WILLIAM COLLINS have added a memorandum to their signature of the general report, a memorandum in which they ask for more stringent regulations on this point than those with which the majority of their colleagues would be satisfied. Dr. GEORGE WILSON adds his signature both to the general report and to the memorandum, and appends also a long memorandum of his own, which is critical of the results obtained by vivisection. It seems obvious that a cast-iron rule to destroy every animal that was, or that to some inspector might appear to be, in pain after an experiment, even although the object with which the experiment was performed had not been attained, would in the long run defeat itself, and would be certain to multiply similar experiments in the hope that manifestations of pain might be avoided. The Commissioners rightly call attention to the fact that public opinion sanctions the infliction of

pain for the purposes of sport, for such operations as castration and spaying, and for the destruction of vermin by traps or painful poisons; and it is manifestly absurd that what is permitted on these grounds should be absolutely prohibited when the attainment of useful knowledge is at stake.

The Act under which experiments on animals are now conducted was passed in 1876, and every one of the intervening years has afforded fresh evidence of its value. In the interval the two great English Schools of Tropical Medicine, the London and the Liverpool, have come into existence, and have justified the wisdom of their founders by the continued discovery of new truths concerning the nature and causation of maladies by which extensive portions of the earth's surface have been closed to civilised man, or were only penetrated at the cost of almost certain death. The interval covers practically the whole attainment of the knowledge of the present day concerning the conveyance of disease by blood-sucking insects—a knowledge which promises eventually to open up the greater portion of the African continent to colonisation and industry. It has shown that the flea is an active cause of the diffusion of a malady which is even now destroying thousands of lives annually, and it has cast grave suspicion upon the bug as a possible means of communication of leprosy, the bacilli of which are said to have been discovered unharmed in the alimentary tract of the insect some considerable time after they had been ingested. The great home question of tuberculosis has been only sufficiently elucidated by experiment to show the directions in which further research is required; and the institution and conduct of such research is one of the most pressing medical necessities of our day. It is a great relief to all right-thinking people to know that the splendid work of the recent past will be continued with the added prestige conferred upon it by this report. The recommendations of the report, which we shall later deal with in some detail, contain nothing which should hamper the progress of science, while the document is a remarkable reply to the malignant abuse under which much of that progress has been made.

A "Mental Defect Bill."

THE statements made in the House of Commons by both the Prime Minister and the Home Secretary that it was the intention of the Government to introduce during the present session a measure for the care and control of the feeble-minded must have been received with satisfaction by the many persons who are interested in this pressing social reform. It is now four years since the Royal Commission appointed to investigate this subject, after a like period of exhaustive inquiry, made its report, which included a long series of recommendations as to the needed legislation. These recommendations comprised a well-considered scheme covering the whole ground, based on the broad fact that mental defect which renders an individual unable to control himself or his affairs is widely met with amongst individuals who at present enjoy full liberty, and who need legalised protection. For whilst there is statutory provision for the care of the insane and the idiot, there is none for the mental weakling or the wastrel, whose unrestricted freedom is quite as harmful to the well-being of the community. These classes contribute largely to the multiplication of the unfit, and are themselves exposed to dangers and hardships by reason of their own unfitness. Unable to earn a livelihood they swell the ranks of pauperism, whilst their lack of mental and moral control leads to their contributing no small share to the records of crime, intemperance, and immorality. The Royal Commission did a great service in revealing the extent of the evil resulting from the lack of supervision over this large and increasing degenerate section. That the revelations have not hitherto engaged the attention of Parliament cannot surely be due to non-recognition of their importance, but rather to the absorption of political activities in other directions. It may be that the delay in dealing with the question has not been without advantage, since it has allowed time for the public to be fully enlightened by much able propagandism, so that few can now be wholly ignorant of the urgency of the problem, and the means of dealing with it. And since so to deal with it adequately must needs involve a large expenditure of public money, it is perhaps as well that the bearing of legislative interference on the promotion of the national health and efficiency should be thoroughly and widely realised.

As if in anticipation of early legislation on the subject there has opportunely been published the draft of a Bill styled "The Mental Defect Bill," which has been prepared on the lines of the report of the Royal Commission under the auspices of a highly influential and experienced committee. The Bill[1] consists of 259 clauses grouped under 14 headings, and is mainly framed on the Lunacy Act, 1890, of which the material parts are retained or redrafted, the term "mentally defective" replacing that of "lunatic," and "hospital" being substituted for "asylum." The arrangement of the clauses is decidedly better than obtains in the existing Act, and there are skilfully embodied in them many of the recommendations of the Royal Commission. There are many points in regard to which experience of the working of the Lunacy Act has shown the necessity for amendment, and these may have to be considered before a Bill replacing that Act is finally framed; but there can be no doubt as to the general scope and bearing of this draft. For it shows the possibility of dealing with every class of the mentally defective on the same lines as those of existing legislation for "persons of unsound mind." Those who need care and control by reason of mental incapacity of the simplest as well as of the gravest form will, under such a measure, be subjected to practically identical disabilities and restrictions, be detained and segregated under the same legal procedure, and be able to enjoy the same benefit in regard to the protection of their property. There must be some difference in detail, but in principle all mental defectives would be controlled by similar means. Should this principle be generally recognised one step would have been taken towards dispelling what is called the

[1] Copies of this Bill are to be obtained at P. S. King and Co., Smith-street, Westminster, or 296, Vauxhall Bridge-road, S.W. Price 6d.

"stigma" of insanity, and so removing the popular dread of certification. Although it would hardly be desirable at this juncture to enter into a minute discussion of the details of a "Bill" which is rather of the nature of a *ballon d'essai* than of a measure introduced into Parliament, it may yet be useful briefly to indicate some of its novel provisions, especially as regards our profession. For it may, we think, be taken for granted that whatever be the legislation ultimately proposed it must be more or less on the same lines as this draft if not of the same scope.

Following the recommendation of the Royal Commission, no new authority is to be set up, but the central body for the care and control of the feeble-minded is to be a Board of Control consisting of Commissioners, including the existing Commissioners, Masters, and Chancery Visitors, together with such additional Commissioners as may be necessary, the appointments being made by the Secretary of State. Those eligible shall be a certain proportion of legal and medical practitioners or others specially qualified from their knowledge and experience of the care of mental defectives, and at least one of the Commissioners must be a woman. There would also be Honorary Commissioners and eight Assistant District Commissioners, who would be medical men, and whose duties would be confined to the eight districts into which the country would be divided. It may be noted in passing that if the Bill introduced by the Lord Chancellor last session had been passed in its original form a step would have been taken towards the formation of such a Board of Control, by the amalgamation of the two existing lunacy boards. In the next place, each local authority (the county or borough council) will act through a statutory committee, the "Mental Defect Committee," which would take over the duties at present performed by the Visiting Committee of Asylums, and part of those of the Education Committee, and on this committee at least one woman would have a seat. It would be the duty of the local authority to appoint a whole-time medical officer (or, if need be, more than one) to assist in carrying out the provisions of the Act; and also to appoint certifying medical practitioners in districts within the area, subject to the approval of the Board of Control.

Amongst other new proposals which are very desirable is that of the provision by the local authority of receiving houses and reception wards for the temporary treatment of mentally defective persons, whose admission therein is subject to the discretion of the medical officer of the house or ward, and if admitted such persons will have to be visited by the medical officer of the local authority or by a certifying medical practitioner, on whom will devolve the duty of reporting on the mental state of the person. Apparently there would be no change in the existing procedure of reception orders on petition or of summary reception orders, except that in certain contingencies the local authority may call on their medical officer to act as petitioner. The regulations bearing on care and treatment would be unaltered, but fresh powers would be given to local authorities in respect of the discharge of a mentally defective person, "not being a person of unsound mind." The local authority will have to deal with the education of mentally defective children, the term "education" being held to include any manual, industrial, or other training, and the phrase "mentally defective child" being a child who is either an idiot, an imbecile, feeble-minded, or a moral imbecile. There are also clauses dealing with the guardianship and supervision of those who are under the age of 21. A register of all notified mentally defective persons is to be kept by the Board of Control, and the requirements as to visitation and inspection are to be much as now obtain for the insane, with the not unimportant modification that these duties in any instance may be made by a single Commissioner. The reintroduction of licensing of houses and institutions, which was abrogated by the Act of 1890, is obviously necessary, since the need for new establishments will be very great.

The foregoing forms but a small part of the provisions of this bulky measure, which has evidently been compiled with the careful intention to bring new legislation into harmony with old. It shows how this can be done without any departure from the spirit and intention of the existing lunacy law, and so far it merits approbation. It is of value, too, as consolidating and bringing to a focus the conclusions arrived at by a Royal Commission of exceptional strength after a thorough survey of the problem they were empowered to determine. It may be too much to expect that so great a step as is here foreshadowed can be taken by Parliament at once, but it shows the way in which the subject could be dealt with in its entirety. If it be only practicable to proceed by piecemeal legislation, whatever is done now should be done with the general scheme in view as the ultimate goal. Perhaps the one striking feature of the whole plan is that it would extend the range of legalised restriction of liberty of individuals, in the interest of themselves and of the rest of the community, to fully twice its present limit. And in the case of the congenitally feeble-minded this restriction must be life-long, and therefore will apparently involve for them a greater hardship than is now endured by many of the insane. All the more reason then that the conditions under which they would have to pass their lives should be made as pleasant and as free as is compatible with their segregation and protection. We may feel sure that humanitarian instincts may be trusted to find the best solution to this problem. And we are equally confident that under the new conditions that will soon prevail the medical profession would be willing and competent to undertake the very responsible duties devolving upon them.

KING EDWARD'S HOSPITAL FUND FOR LONDON.—Hospitals in the County of London or within nine miles of Charing Cross desiring to participate in the grants made by this Fund for the year 1912 must make application before March 30th to the honorary secretaries, 7, Walbrook, E.C. Applications will also be considered from convalescent homes which are situated within the above boundaries or which, being situated outside, take a large proportion of patients from London. Applications will also be considered from sanatoriums for consumption which take patients from London or which are prepared to place beds at the disposal of the Fund for the use of patients from London hospitals.

Annotations.

"Ne quid nimis."

SENIOR HOSPITAL APPOINTMENTS AND DISPENSING.

OWING to local circumstances of a rather unusual kind the question of the senior hospital staff and dispensing has lately been revived at Portsmouth. Like several other large provincial hospitals the Royal Portsmouth Hospital has a rule prohibiting the honorary senior physicians and surgeons from dispensing or contracting in any way for the supply of medicines. As it happens, the neighbourhood of Portsmouth and Southsea is sharply divided so far as medical practice is concerned into two distinct parts—all the medical men south of a certain street refrain from dispensing and are eligible for senior staff posts, while all those practising north of this line dispense and are debarred from promotion to the senior honorary staff. The death of one of the senior physicians to the hospital recently created a vacancy which, had he been eligible, would naturally have been filled by the promotion of a much respected junior honorary physician. He, however, dispensed, and owing to the effect of the Insurance Act upon the transfer of such practices he had been unable to dispose of this part of his work; therefore his election to the senior staff was prevented by the rule in question. This was very generally felt to be a hard case, and the governors of the hospital decided, not without some discussion, to propose that the words which forbade dispensing should be struck out. At the annual meeting, however, the case for retaining this prohibition was ably presented by Mr. Henry Rundle, a valued member of the consulting staff, who supported his argument with the opinions of Sir Clifford Allbutt, Professor Howard Marsh, Dr. J. Mitchell Bruce, and Mr. D'Arcy Power. He urged the meeting not to alter the rule for all time, and so lower the standard of qualification required of the senior staff, but to empower the governors merely to suspend operation of the rule for a period, so that the present difficulty might be overcome without prejudice to the future. Mr. Rundle's views carried much weight, and his amendment was passed by a very large majority. The essential thing, of course, is to secure for the service of the hospital the most scientific representatives of medicine and surgery available in the community, and any regulation which aims at this should be treated with respect, and not cancelled without good cause being shown. The question whether the senior members of the visiting staff should be allowed to dispense is not often likely to become a very acute one, because in the nature of things the senior practitioners of a large town by the time they are eligible for such posts have already ceased to dispense, or are in a position to do so if they wish. It is obvious that in ordinary circumstances a medical man whose practice is so dependent upon the supply of medicines that he cannot afford to abandon dispensing would be unlikely to have sufficient time to devote to the honorary service of a hospital; but where special conditions arise, as at Portsmouth, it may be wise to relax a good rule to avoid injustice. It would have been unfortunate if a rule framed in the best interests of the hospital and of the community had been abolished because its operation in exceptional circumstances might give it the air of class legislation. Mr. Rundle showed that the position could not well arise again at Portsmouth for 15 years, since none of the present assistant honorary staff dispense. Such being the case his amendment offered a middle course which appealed to the good sense of the meeting, and will, we hope, satisfy all parties.

THE SURVIVAL OF ANCIENT PATHOLOGY AMONG THE LAITY.

THE history of medicine shows that many pathological theories, like most other subjects of human interest, after claiming attention for a shorter or longer time, pass ultimately into the limbo of the forgotten. As a rule, each new doctrine finds its earliest adherents within the boundaries of the profession, and spreads but slowly among the laity. By the time it is incorporated in the stock ideas of the common people, those who originally set it up have tested it, and have reason on their side if they find it wanting. The longer the doctrine maintains its hold over the intellectual centre, the more likely it is to reach the understanding of the people, and as a rule the more likely is it to be defensible, in some aspects at any rate, on scientific grounds. The ancient humoral pathology, which reigned supreme for 2000 years, and had ample opportunity to permeate all levels of society, incorporated in its imagining many isolated truths. Its main ideas are reflected time and again, as Mr. P. A. Robin [1] has pointed out, in the literature of the ages. Even at the present day our language still shows traces of this ancient pathology. For example, Hippocrates' notion of the four humours of the body survives in the expressions "choleric," "sanguine," "melancholic," and "phlegmatic"; while the words "good humour" and "ill-humour" spring from the same remote source, and the word "spleen" owes one of its special meanings to its rôle in the humoral pathology as the producer of black bile. It would be strange if in the daily talk of average men and women nothing now remained of beliefs that dominated the medical world for so many centuries, especially as very few people even among educated classes have any clear idea of what they mean by a "disease"; in the minds of most it has something of the concrete about it, which the "constitution" can throw off or eject. Thus, most people regard a cold as a something that can be sweated out through the pores of the skin, and the rash of a specific fever as "the disease coming to the surface"; without the rash the disease would "strike inwardly" or be "suppressed." Similarly, a skin affection is to them a "breaking out"—a term expressing something pent up within the system. When a farm hand, admitted to a hospital for a broken-down gumma, which under the iodides is healing rapidly, insists on leaving the hospital in consequence of his conviction that the disappearance of the discharge implies the driving of the disease inward again, he is merely giving expression to the beliefs of our not very remote professional ancestors. So late as the seventeenth century the enlightened Sydenham believed, with Hippocrates, that a disease passed through a stage of "coction," in which it was prepared for elimination, to a stage of "crisis," in which it was expelled. He speaks of "inflamed particles" falling on the pleura and lighting up pleurisy; of withdrawing "febrile matter" from the blood by purging. In ague, he says, "sensible morbid matter" accumulates between the attacks and is cleared off in the sweating stage of the next fit. He recognised "depurating" fevers—fevers which cleansed the fluids of the body—and he made a free use of bleeding in order to remove the particles of disease. This medical conception still hovers at the back of the minds of many, not only of the lower classes, showing itself in their narratives of "breakings-out" and "suppressed" diseases; the determination of the out-patient mother who will be no party to the direful act of stopping the discharge from her child's ear is an expression of belated wisdom, though so foolish. Popular notions of disease, when looked at from the historical standpoint, appears as the fruit of the seed

[1] Old Physiology in English Literature, by P. A. Robin.

scattered by our professional predecessors, all of whom helped in moulding the lay opinion of their day. When we have to listen to a nineteenth century exponent of sixteenth century pathology it behoves us to remember that, in spite of the brilliant advance of modern medical science, a large proportion of our fellows have not yet freed themselves from the pathological doctrines of the ancients which were instilled into them by our professional forebears.

THE FATE OF MEDICAL CASE-BOOKS.

A FEW weeks ago we chronicled the munificent bequest of over £100,000 for the foundation of local almshouses by the late Dr. Charles Alfred Lee, of Hull. Dr. Lee's will contains precise instructions for the carrying out of his wishes. Among other instances of his foresight and generosity is a direction to his executors to cancel all his medical book debts and to burn all his day-books, cash-books, ledgers, and so forth, kept in connexion with his practice. This instruction no doubt covers any medical note-books and case-histories which may have been kept by the deceased practitioner during his 63 years of professional life. If this was part of Dr. Lee's intention when he made his will we may suppose that he had in mind not only the pockets of his patients, but also their feelings and the sanctity of his relations with them. He may well have considered that it was part of a medical man's duty to have all such intimate records of his patients and their families destroyed at his death for fear, among other things, lest they should pass into undesirable hands. The possible fate of old case-books after their owner's death is, indeed, too seldom borne in mind by medical men. The hard-worked general practitioner, it is true, often has time for little more than a brief record even of unusual cases, but many consultants keep full notes of every private patient, and the disposal of such elaborate case-histories should not be left to the whim of an executor. The death of a popular physician, whose practice has for many years brought him into close touch with the secrets and the troubles of well-known people, may place in lay hands a shelf-full of case-books of the greatest interest and scientific value, which, if allowed to drift about, might cause infinite pain. In such instances clear directions for the destruction or the sealing-up for a number of years of all professional documents would relieve executors of an embarrassing responsibility.

THE NERVOUS COMPLICATIONS OF DIABETES.

Dr. R. T. Williamson, of Manchester, contributes to the *Festschrift* in honour of Professor Raphael Lépine, of Bordeaux, an interesting paper on those nervous complications of diabetes which are associated with changes in the peripheral spinal nerves and spinal cord. Such nervous symptoms occur in the course of many cases of diabetes mellitus, mainly, though by no means entirely, in the milder forms of diabetes of long standing. As a rule they are confined to the sensory side of the nervous mechanism, revealing themselves by pains, paræsthesiæ, or tenderness, loss of the tendo-Achillis reflexes, and loss of the sensation of vibration, or pallanæsthesia. Sometimes only one or other of these is present, sometimes all; occasionally additional symptoms develop, such as marked hyperalgesia, loss of knee-jerks, slight anæsthesia, and even paresis or paralysis of the leg muscles. Dr. Williamson found the Achillis jerks absent in 19 out of 50 consecutive cases of the disease. In a series of 100 cases, chiefly among hospital patients, the knee-jerks were both lost in 49, one lost and one present in six, both present in 45. The Achillis jerks are usually lost before the knee-jerks. Of 100 consecutive cases of diabetes the sensation of vibration in the lower extremities was absent in 18. Dr. Williamson quotes from Verneuil the interesting observation that in cases of fracture in diabetic patients the ends of the bone are remarkably insensitive. The pains of diabetes are commonly described as dull, aching, gnawing, or burning; they are practically never of a darting, stabbing, neuralgic type. Pains and loss of the tendon reflexes constitute the main indications of "diabetic neuritis," so-called. Associated with the pains are often cramps in the muscles and general hyperæsthesia of the limbs. Sometimes a degree of ataxia is present, in which case the symptoms form a clinical picture not unlike locomotor ataxia, distinguished as "pseudo-tabes." As a rule the arms escape, and psychical symptoms are never observed. Very occasionally perforating ulcers are seen in diabetic patients on the soles of the feet. It is a curious fact that the symptoms of diabetic neuritis are sometimes localised to the distribution of the anterior crural and obturator nerves of one or both sides. Dr. Williamson holds strongly that whenever neuritic symptoms are localised to the distribution of the lumbar plexus the urine should always be examined for sugar. There should be little difficulty in distinguishing diabetic neuritis from alcoholic neuritis. It seems, for instance, to be the case that in the former condition the arms and the legs are never affected together, whereas the converse holds good for alcoholic neuritis. Nor should it be difficult to separate diabetic neuritis from tabes. It is a good rule always to examine for sugar when there are severe pains in the legs, when the knee or Achillis jerks are absent, or when the patient suffers from sciatica, or perforating ulcer, or from symptoms of peripheral neuritis. As for the pathology of diabetic neuritis, there are usually changes in the peripheral nerves or in the spinal cord. As far as the former are concerned, the changes are such as are found in any neuritis, alcoholic, diphtheritic, or otherwise. In other cases, however, more especially where the tendon reflexes have been awanting, degenerative changes have been found in the posterior columns of the spinal cord, affecting mainly the posterior root fibres in their intramedullary course. Dr. Williamson has found that these changes commence directly the nerve fibres have penetrated the pia and are entering the cord. The degeneration in the posterior columns is secondary to this root degeneration. The diseased areas can be easily traced by Marchi's method. They are best seen in the lumbar and cervical regions. The possibility of the nervous symptoms being due in part, at least in some cases, to alcohol is worthy of consideration. It has been pointed out that peripheral neuritis is specially apt to occur when two poisons act simultaneously on the nervous system. Dr. Williamson recalls the fact that in the epidemic of peripheral neuritis in Manchester some years ago the quantity of arsenic in the beer consumed was by itself insufficient to have produced the symptoms, and so was the quantity of alcohol, but the combination of the two proved an adequate cause for the development of neuritis.

CULTIVATION OF THE LEPROSY BACILLUS.

IT is satisfactory to find that the most refractory organisms are gradually yielding to the seductions of the bacteriologist, and submitting to cultivation in the laboratory. For a long time failure attended all attempts to grow the bacillus of leprosy on artificial media, but recently several successful cultures have been recorded. One of the most notable of these was effected by Clegg,[1] who grew the organisms along with amœbæ and cholera vibrios. This method has recently been successfully applied by Hollmann[2] to the bacillus of

[1] Philippine Journal of Science, 1909, sec. B., vol. iv., p. 403.
[2] Public Health Reports, Washington, Jan. 19th, 1912, vol. xxvii., No. 3, p. 69.

rat leprosy, which has been supposed to be identical with the bacillus found in the human disease. This identification is, to some extent, supported by the susceptibility of the two organisms to the same mode of culture. Reinoculation of Hollmann's cultures into healthy rats did not, however, produce any visible lesions, though acid-fast bacilli were found after death in the tissues of the animals, and in view of the ubiquity of acid-fast organisms it is difficult to be sure of the identity of any grown in a mixed culture. If the bacillus of rat leprosy is really the B. lepræ, the interesting question arises as to the possibility of transmission of the disease to man by these rodents. So far no evidence of such transmission appears to exist, and it is difficult to imagine a condition of sufficiently close contact between man and rat to lead to infection with the causal agent of so chronic and slightly contagious an infection. An intermediary, such as the flea, is, of course, possible, and it is important to ascertain whether fleas can carry infection from rat to rat. In any case we are justified in feeling that light is beginning to dawn on the causation of leprosy and in anticipating further discoveries of importance in the immediate future.

CRUELTY TO POULTRY.

THE Society for the Prevention of Cruelty to Animals has lately prosecuted a railway company because some sheep and pigs were so overcrowded in trucks that three died and many were injured before they reached their destination. On such a charge, if proved, a private trader could easily be condemned, but it is a more difficult matter to prosecute so impersonal an organisation as a large company. In any case, there is undoubtedly much unnecessary cruelty practised in effecting the transport of living animals intended for human food. Some of this could be stopped through the Protection of Animals Act, but there are many cases which do not come within the scope of the law. According to the Act in question, birds are not animals. If a horse, a cow, a pig, a dog, or a cat is ill-treated the person responsible can be prosecuted, but that same person may ill-treat a fowl or a turkey without interference. The result is that living poultry are packed and distributed all over the country in a manner that is a disgrace to our humanity. Heavy and light birds, geese and chickens, are crowded together in the same crates. The basket or crate is often so badly constructed that when the birds it contains are thrown against the sides they may be badly injured. In many instances there are projecting nails or splinters that inflict desperate wounds, while weaker birds are often smothered by the heavier birds and many limbs are broken. Of course, there should be partitions in the crates so that the birds could be separated according to their size. Then on long journeys the birds should be taken out, fed, and watered. There is no justification for the suffering caused. A law of nature compels us to kill in order to live, but there is no necessity for cruelty. In some countries there are especially constructed railway wagons for carrying poultry. These are well aired, and the wood is smooth and flat so as to avoid injury to the birds, while there are troughs for water and food that can be replenished from the outside. A large proportion of the poultry that is tortured for want of proper means of transport comes from Ireland. Some of the dealers do take good care of the birds, but they are in the minority. These humane and conscientious men are consequently placed at a disadvantage when competing with less scrupulous and more callous dealers. It would be an act of justice as well as mercy if the Act for the Prevention of Cruelty to Animals were extended to include birds. This reform would prevent much unnecessary and wasteful suffering in the animal world. Birds which have been injured, frightened, and exhausted by a long painful journey are less suitable for human food. Big cattle after a long railway journey, though not injured and much better cared for during transit, are generally given some three days in which to recover before they are slaughtered. If this is not done the quality of the meat is impaired. Why should not similar care be taken of live poultry?

INTRACRANIAL CEREBRAL HÆMORRHAGE IN THE NEWBORN RELIEVED BY OPERATION.

INTRACRANIAL cerebral hæmorrhage in the newborn, if it does not kill the patient forthwith, is acknowledged to be one of the common causes of congenital spastic paraplegia or Little's disease. In an analysis of 74 necropsies on infants still-born or dying in the first few days of life, Archibald found subdural hæmorrhage in 32 and extradural hæmorrhage in 5. It was the probable cause of death in most of these cases. Sometimes, as Löri has shown, minute multiple hæmorrhages (cortical and otherwise) occur, and for cases of this description little can be done by way of active interference. In the first group, however, surgical treatment has been tried in a fair number with varying success. In the *Boston Medical and Surgical Journal* (Jan. 11th, 1912), Dr. Channing C. Simmons, surgeon to the Massachusetts General Hospital, reports two cases successfully operated on. It is probable that more cases are operated on than are reported, for Dr. Simmons can find a record of only 14, with four recoveries—the latter cases operated on by Cushing, of Baltimore, and published by him. This seems a small proportion of successful cases, for which various causes may be advanced by way of explanation. The diagnosis ought to present no difficulties, at least in the majority of cases. As a rule, there is a history of prolonged and difficult labour, usually in a primipara. A few hours after birth the infant becomes stupid, has attacks of vomiting, may be unable to take the breast, and frequently begins to show symptoms of cortical irritation, with convulsive involuntary movements and possibly some stiffness of the limbs. In Dr. Simmons's first case the fontanelles were tense and bulging, and did not pulsate, while lumbar puncture was followed by the escape of blood-stained cerebro-spinal fluid. In this instance the technique was as follows. Wrapped in blankets, and surrounded by hot water bottles, the infant was given the merest whiff of ether, and then a short curved incision was made over the anterior fontanelle, which was bulging and bluish in colour. The coronal suture and underlying dura were then incised by a cut, about ¾ in. long, 1½ in. to the right of the median line. An ounce of dark blood at once escaped. The same procedure was carried out on the other side, when more dark blood came away. Thereafter the fontanelles became soft and commenced to pulsate normally. The infant made a good recovery, and 13 months later bade fair to develop into a normal, healthy child. It appears that in cases of this description the hæmorrhage usually occurs from one of the veins running upwards over the cortex to empty into the superior longitudinal sinus in the neighbourhood of the anterior fontanelle. If there is overlapping of the bones in a difficult labour one or other of these veins may be torn, when the blood will be extravasated, usually more or less over the motor area, and will gradually diffuse itself over the entire hemispheres. Should the motor area not be involved there may be no localising symptoms, but a history of difficult labour, and symptoms of cerebral compression in the shape of accelerated pulse, bulging fontanelles, shallow respiration, dilated pupils, and inability to take the breast ought to be a sufficient guide to the condition. Lumbar puncture is of great value as an aid to

diagnosis. Dr. Simmons attributes his good results to the simplicity of his procedure, and does not think an osteoplastic operation in the parietal region is called for unless the hæmorrhage is very large and has extended to the tentorium. It may be necessary to operate more than once, especially since organisation of an incompletely removed clot may give rise to irritative symptoms later in life. If the infant is moribund or in a critical condition Dr. Simmons's procedure should be tried without delay, and if it prove unsatisfactory an osteoplastic operation might follow. With the good results obtained by Cushing and by Dr. Simmons in view, it is incumbent on the obstetrician to recognise the condition and to seek surgical aid at the earliest possible moment, for otherwise there can be, in all probability, only one or other unfortunate ending—either the infant dies or he suffers from infantile hemiplegia, Jacksonian epilepsy, or spastic paraplegia in later years.

THE PHYSICIAN AND THE PATHOLOGIST ON HEART FAILURE.

AN interesting debate by the Chelsea Clinical Society on Disorders of the Circulatory System was opened on March 12th with a paper by Sir T. Clifford Allbutt, entitled "The Physician and the Pathologist on Heart Failure." Professor Allbutt showed how the two aspects of cardiac failure, the clinical and the pathological, are lacking at present in correlation, and he suggested that if the workers in these fields would coöperate more the complications and uncertainties of the subject might be cleared up. He dwelt on the misleading nature of various physical signs in heart failure unassociated with valvular disease; nevertheless, persistent alteration of pulse-rate and the phenomenon of pulsus alternans are, in his view, each very suggestive of myocardial damage, although neither is an absolute criterion. Professor Allbutt in particular surveyed the problem of sudden death without previous signs of illness in the man who does not suspect that he is ill. His interesting and thoughtful paper was followed by remarks from Sir Lauder Brunton and Dr. Samuel West, who both inclined to the view that the explanation of such cases is a toxic one, and the debate was continued by Dr. Hector Mackenzie, Dr. C. C. Gibbes, and others. We hope to publish an account of the discussion in our next issue. On March 19th the clinical debate will be continued at the Physiological Laboratory of the University of London, Imperial Institute, S.W., when Professor Wilhelm Einthoven, M.D., of Leyden, will read a paper on "The Various Forms of the Human Electrocardiogram and their Significance." The meeting is open to the whole of the medical profession.

THE DEVELOPMENT OF THE PARASITE OF INDIAN KALA-AZAR IN CIMEX ROTUNDATUS AND CIMEX LECTULARIUS.

Captain W. S. Patton, I.M.S., who has been deputed by the Government of Madras to carry out further investigations into the etiology of kala-azar, has been able by feeding Cimex rotundatus and Cimex lectularius on a case of kala-azar, in whose blood there were a large number of parasites, to discover its complete development. This discovery was foreshadowed in a telegram published in these columns on Feb. 17th last. The parasite has been followed from its unchanged state in a leucocyte through the flagellate stage up to the rounding-up of the parasite into its post-flagellate form, as was predicted in 1907.[1] The further important discovery was made that if bugs which already contained the developmental forms were again fed on another case of kala-azar in a monkey (Macacus sinicus) the flagellating forms were completely destroyed within 24 hours; whereas if the bugs were not fed again the development goes on and is completed by the tenth, eleventh, and twelfth day after the single feed. This discovery at once explains why in all the previous experiments he was never able to obtain massive infection of the bug or to get its complete life-history, for the simple reason that the bugs were then repeatedly fed on the case and not kept long enough after their last feed.[2] It further suggests an explanation why the disease does not readily spread outside the endemic area, as this material obstacle prevents many bugs from becoming infective. These recent observations clearly demonstrate that in Cimex lectularius, the European bed-bug, the parasite goes through its complete development as readily as in Cimex rotundatus, and that by the seventh, eighth, and ninth day this bug swarms with flagellate stages in masses of rosettes. It is very probable then that the parasite of infantile kala-azar known now to occur along the Mediterranean littoral also undergoes its development in Cimex lectularius. Captain Patton has further found that in Conorrhinus rubrofasciatus, the bug suspected by Donovan, which was bred from the eggs and fed on the case, the parasite degenerates and never flagellates; this finally proves that this bug has nothing whatever to do with the transmission of kala-azar. All the bugs used in these experiments were bred in the laboratory and had their first feed on the case. Cimex lectularius was obtained from the slums of London, and like Cimex rotundatus it never contains a natural flagellate. A memoir describing the observations particularly of the post-flagellate stage will shortly be published.

[1] Vide Annual Report, King Institute, 1907.

THE LESION CAUSED BY JUDICIAL HANGING.

IT is an old saying that there are more ways of killing than by hanging; but perhaps it is not so well known that there are many different ways of killing by hanging. When a criminal is hanged he dies a practically instantaneous death, but his death may be brought about in a strange variety of ways. From the medico-legal point of view more attention has been paid to the results produced by the methods of the suicide than to the actual state of affairs which brings about the death of a man executed in the interests of justice. And yet, since hanging is the accepted English method of despatching the criminal, any evidence of the processes by which death is brought about cannot be unimportant. It must be admitted at once that the term "hanging" is not at all a good one to express the mode of death in a modern execution. Hanging suggests the passive suspension at the end of a rope, and seems to connote a throttling of the victim by the drawing tight of the noose. Suicides do literally hang themselves, and in olden days men were hanged when executed, death from apoplexy or asphyxia being caused by the constriction of the neck. But something more than this comes into play in a modern execution, for the jerk of the drop, and not the running taut of the noose, is the factor which in most cases brings about an instantaneous death. The criminal is not throttled to death, but a sudden jerk imparted to the base of his skull kills him with a surprising suddenness. Exactly what this jerk does depends on many things, such as the length of the drop and the position of the knot, and totally different results are found in different cases. At times no injury to the bones of the neck can be found after death, and in these cases it is probable that a general stretching of the ligaments has permitted a fatal injury to the cord without producing any bony lesion; it is even possible that some of the more subtle causes of death, which are seen in the suicide,

[2] Vide Memoirs Nos. 27 and 31.

come into play. It has been thought that the odontoid process became torn from its ligaments, and so crushed the cord; it has even been said that some executioners could produce this result at will by giving a rotary motion to the falling body. Still, although this is a common belief concerning hanging (and certainly one case of damage to the odontoid is recorded), it is probably a somewhat rare accident for death to be brought about by injury of the cord due to a fractured, or liberated, odontoid process. Almost any degree of injury to the cervical region of the spine may be produced. The third cervical vertebra is the one most commonly fractured, but the extent of injury may range from a mere tearing of the ligaments, or a slight fracture of the bone, up to a complete severance of all the tissues of the neck. Complete decapitation has been produced by a drop of no more than 9 feet. Apart altogether from this lesion of the cervical vertebræ a strange injury to the skull has been described, and it seems certain that an executed man may die as the result of extensive cranial injuries, whilst his cervical vertebræ remain intact. The anatomists engaged in the archæological survey of Nubia had the opportunity of examining the bodies of over a hundred men, all of whom had been executed in Roman times, and some of whom still carried round their necks the ropes with which they were hanged. These men showed no lesion of their cervical vertebræ, but the sutures of their skulls were torn open in such a manner as to lead Dr. F. Wood Jones to suppose that the knot, catching on the angle of the jaw, had tended to pull one temporal bone and the facial part of the skull bodily upwards from the occipital and the base of the skull. These lesions were remarkably constant in the Nubian series, although the skulls of several men known to have been hanged, which are lodged in various museums, did not show any such injury. Quite recently the demolition of the old buildings in Jail-square, Glasgow, has provided Dr. G. H. Edington with the opportunity of examining and describing[1] the skull of Dr. Pritchard who was hanged for his crimes on July 28th, 1865, before a crowd of 100,000 onlookers. The circumstances of Pritchard's hanging are fairly well known: Calcraft, the advocate of the Scottish "short-drop" method, was the executioner, and a fall of between three and four feet was allowed. This drop does not appear to have been sufficient, for it "was only after Calcraft went below and pulled the legs that the body was brought to stillness." The degree of force used by Calcraft is, of course, a matter for conjecture, but the interest of it lies in the fact that the lesion produced by this added pull is exactly similar to that found in the skulls of the Nubian natives executed by the Romans. Pritchard had his right temporal bone disrupted from the skull, and, although there is no external evidence on the point, it is probable that the knot of the rope was on the right side of the neck. Different executioners place the knot in different positions, and it seems certain that with the knot under the chin a lesion of the cervical vertebræ is likely to be produced; while with the knot under one ear a cranial lesion may well result, and such a lesion is but a very exaggerated form of the boxer's "knock-out blow." It is not at all impossible that this exaggerated knock-out blow may prove to be *the* cause of death in modern judicial hangings in which the knot is placed under the ear.

WE are glad to announce that the Lord Mayor of London, Sir Thomas Crosby, M.D., after an investigation made by himself personally, has reported to the Council of the Metropolitan Hospital Sunday Fund that the amount expended by St. George's Hospital upon the bacteriological and pathological departments was not excessive, and was properly taken from the general funds of the charity, being for the direct treatment of the patients. Presumably the usual grant to St. George's Hospital from the Fund will be forthcoming.

THE relatives of the late Lord Lister wish through us to offer their sincere thanks for the many letters and messages of sympathy which they have received from public bodies and from private individuals in this country and abroad, and to express their appreciation of the honour which has thus been rendered to his memory. They make this acknowledgment, fearing that some of these messages may inadvertently remain without particular answers.

Lord Esher has announced to the Vice-Chancellor of the University of Cambridge that an anonymous benefactor has placed in his hands £20,000 for the endowment of a professorship at Cambridge in connexion with the experimental study of heredity and of development by descent. The donor stipulates that the new chair shall be called "the Balfour Professorship of Genetics" in honour of Francis Balfour, and that the first appointment shall be made jointly by the Prime Minister and Mr. Arthur Balfour.

Dr. H. R. D. Spitta, assistant bacteriologist to St. George's Hospital, has made a report, at the request of the Postmaster-General, upon the possibility of the communication of tuberculosis through the use of telephones, and finds the danger to be non-existent.

ON the occasion of the opening of the University of Hong-Kong on March 11th, the King signified his intention of conferring the honour of knighthood upon Dr. Ho Kai, C.M.G., who has taken a prominent part in the movement for the establishment of the University.

THE Lumleian lectures on "Some Moot Points in the Pathology and Clinical History of Pneumonia," which were to be delivered by Dr. Percy Kidd on March 21st, 26th, and 28th, before the Royal College of Physicians of London, are unavoidably postponed until May 30th and June 4th and 6th.

WE regret to announce the death, on March 12th, of Sir Richard Brayn, Home Office Expert in Lunacy and formerly medical superintendent of Broadmoor Asylum.

ASSOCIATION OF CERTIFICATED DISPENSERS.—The sixth annual meeting of this association was held at the Apothecaries' Hall, Blackfriars, London, E.C., on March 7th, Mr. Montagu Smith, Lewisham Infirmary, presiding over the largest gathering that has yet assembled for the annual convention. The annual report showed a steady increase in the membership, large numbers having joined for protection against the unsettling tendencies of the National Insurance Act. The constant care of the committee and honorary secretary (Mr. A. Howell, Dalton Dispensary) had been to see that the interests, rights, and privileges of the members were secured in the Act. Every member of the House of Commons had been circularised. Deputations had been received by influential members of the Government, resulting in a special clause being added to the dispensing clauses for the benefit of holders of the Hall certificate. A petition had been forwarded to the Privy Council with reference to powers given to the Pharmaceutical Society under Section 4, Sub-Clause B, of the Poisons and Pharmacy Act, 1908, and a Bill proposed by the Society of Apothecaries with the object of bringing the certified dispenser into line with modern requirements will be submitted to Parliament at an early date.

[1] Glasgow Medical Journal, February, 1912.

ANNUAL REPORT OF THE PRESIDENT OF THE LOCAL GOVERNMENT BOARD.[1]

COMPARATIVELY slight acquaintance with the recent progress of preventive medicine will serve to correct the erroneous impression that this science is exclusively concerned with the study of infectious disease. Nevertheless, the history of past epidemics conclusively shows that very much of the suffering and loss of health, as well as of the poverty and distress endured by the poor of this country, has been caused by the ravages of one or other of these pestilences. Argument is not needed to show that it is by investigation of the causes of these conditions, by which means alone the best methods for their suppression can be discovered, that the study of this particular branch of preventive science is likely to prove serviceable to the State.

These remarks are suggested by the perusal of Part II. of Mr. John Burns's recently issued presidential report, the first part of which we have already reviewed.[2]

Some Historical Remarks.

Before commenting on the volume before us we may usefully observe that under the Act of 1871 the Local Government Board first became responsible for the discharge of the few sanitary functions which had previously been performed by the Privy Council Office, for which purpose Sir John (then Mr.) Simon was transferred to the Board from the staff of the Privy Council office, under the title of principal medical officer. In the course of the last 40 years many other administrative duties have been allotted to the Board, which has, therefore, become the controlling State authority for the public health service of the country.

Not until many years after the establishment of civil registration in 1837 was serious attempt anywhere made to ascertain the actual amount of damage done by infectious disease in this country beyond what could be gathered inferentially from the mortality caused thereby. In the course of the second half of last century certain of the more enlightened municipalities obtained powers under local Acts for the compulsory reporting of such diseases, although the information so obtained was restricted to local purposes. Nothing of the nature of interchange of this information among protected towns was attempted until early in the "eighties," when a provincial medical officer of health started the experiment of collecting returns of infectious sickness from notification towns and distributing weekly lists of the former among the collaborating authorities. The success of this experiment having been established, the Local Government Board was eventually persuaded to undertake the publication of the returns, which were daily becoming more valuable as the policy of protection became more general among the municipal authorities. Since the passing of the Infectious Diseases Notification (Extension) Act, which made notification generally compulsory, the registration of infectious sickness has become gradually more complete, and for several years past the tabulation and circulation of the returns have been carried out periodically by the Local Government Board, as all who have read our columns regularly know.

Case Mortality of Infectious Diseases.

In the supplement to this report, already noticed in THE LANCET of Nov. 25th, 1911, Dr. Newsholme dealt with notification from the medical standpoint; here the President treats of it mainly from an administrative aspect. Attempts are sometimes made to ascertain the "fatality" or case mortality of infectious attacks by comparing the registered deaths with the reported cases in a given area; but in other than exceptional circumstances this practice may lead to erroneous conclusions. By comparing the cases and deaths from particular diseases in the country as a whole the danger of error is of course reduced; and a table appears in this report showing the ratio of deaths to notified attacks in the year 1910. From this it appears that out of nearly 72,000 notified cases of scarlet fever in England and Wales only 2·3 per cent. died. Among nearly 7000 cases of enteric fever the fatality was 17·8 per cent., whilst among 25,000 cases of diphtheria it was 10·2 per cent. The sanitary authorities both in London and in the provinces are now empowered to distribute diphtheria antitoxin gratuitously for the treatment of their poorer inhabitants, and, whether or not this has been helpful, it is satisfactory reading that ever since the year 1906 diphtheria in this country has steadily declined.

Pulmonary Tuberculosis.

The temporary powers granted to four large towns for including tuberculous phthisis among notifiable diseases expired in 1910. Mr. Burns now expresses the opinion that "the addition of phthisis to the list of diseases notifiable under the general Act carries with it certain disabilities to persons suffering from the disease which should not be attached to all persons suffering from phthisis." Nevertheless, in view of the fact that the principal disabilities have been removed, the Board has extended the operation of these powers in the cases referred to for a further period of ten years. By the Local Government Order of 1908 tuberculosis was made compulsorily notifiable in all Poor-law institutions, and in 1910 the system was extended to patients in hospitals and dispensaries. In November, 1911, a further extension was made so as to secure the general notification of phthisis. In more than 280 districts a system of voluntary notification of tuberculosis is in operation, and that system is rapidly spreading, perhaps in connexion with the tuberculosis regulations of 1908 above referred to. For the accommodation of phthisical patients some authorities make provision in sanatoriums. Certain dispensaries also render useful aid by undertaking the diagnosis of disease and the selection of cases for sanatorium treatment. Moreover, the Board is disposed to sanction the provision by local authorities of open-air shelters for the care and treatment of sufferers from this disease. The appearance of the section in the recent National Insurance Act may be thus accounted for.

Exotic Disease.

Under the head of Exotic Disease it is stated that the Local Government Board has continued to give advice and information concerning questions of infectious diseases in the colonies and in foreign countries. Pneumonic plague is reported to have occurred in four instances during September, 1910, in East Suffolk, the circumstances of which were investigated by the late Dr. Bulstrode.[3] With these exceptions no suspected cases of human plague occurred during the year. A report has recently been issued by the Board containing an account of the investigations undertaken in connexion with the plague epizootic. These investigations are still proceeding. Asiatic cholera prevailed extensively during the year 1910 in parts of Russia, and the riparian sanitary authorities trading with Russia were warned to be on their guard against importation of infection into their districts by vessels coming from possibly infected places. Fortunately, no cases of the disease are known to have occurred in this country during the year.

Order relating to Medical Officers of Health.

In the present volume certain important changes are foreshadowed in public health procedure which, in the aggregate, amount to a new departure. Considerations of space compel us to limit our review to changes having definite interest for our profession. The Board has issued a new Order, which came into force at the beginning of 1911, and which was accompanied by a memorandum specifying, *inter alia*, the particulars in which the duties of medical officers of health are affected by the Order. Whilst recognising the value of the work of many health officers engaged in private practice, the Board is of opinion that the holding of such appointments by practising medical men is now undesirable. The President suggests the expedient of combining several small districts under the care of a highly qualified medical man who should be debarred from private practice, as are the county medical officers recently appointed, but who may advantageously hold such an appointment as that of education medical officer, isolation hospital superintendent, certifying factory surgeon, police surgeon, or public vaccinator.

In regard to tenure of office by medical officers of health

[1] Fortieth Annual Report of the Local Government Board, 1910-11, Part II. Wyman and Sons. Price 1s. 10d.

[2] THE LANCET, March 2nd, 1912, p. 601.

[3] THE LANCET, Sept. 2nd, 1911, p. 697.

the Order makes certain alterations which, in some respects, appear to be improvements. In addition to the duties prescribed by the Board's Order of 1891, every medical officer of health is now required to despatch weekly to the Local Government Board, and to the medical officer of the county, a return of the cases of infectious disease notified in his district during the previous week. From these returns a statement is compiled at Whitehall, which is circulated to every medical officer of health in England and Wales, and which shows the number of infectious cases notified in each district during the preceding week. This change is associated with, and is made practicable by, a corresponding change in the form in which the Registrar-General will present the vital statistics of the kingdom from the year 1911 onwards. In our issue of Jan. 13th, 1912, p. 106, we referred to this salutary rearrangement, which involves the substitution of sanitary for Poor-law districts, so that the data collected by the local authorities will in future correspond nearly to those published by the Registrar-General.

Milk-supply.

Cow's milk is still very frequently found to be the medium of dissemination of enteric fever and other infectious diseases; and for this reason the arrangements locally in vogue for its distribution demand the constant vigilance of sanitary authorities and their officers. In England and Wales there are still 144 sanitary authorities that have not adopted the Board's regulations for securing the purity of the milk-supply. The amount of adulteration detected in milk samples analysed during the year is given in a table, and varies considerably in different districts. Of the total of 47,895 samples examined 11·1 per cent. were found to be adulterated. The favourite substance used for the preservation of milk and cream appears to be boric acid. More than 160 local authorities have already made arrangements for the veterinary inspection of milch cows in their districts, and many other authorities have obtained power under local Acts to stop the supply in their districts of milk from a dairy outside their district in which there has been detected a cow with tuberculous disease of the udder. Having regard to the latest pronouncement of the Royal Commission on Tuberculosis it is of the first importance that similar powers should be conferred by general legislation on all sanitary authorities, who should be held responsible for the due enforcement of those powers.

Water-supply.

The maintenance of the public health so greatly depends on the purity of the water-supply that its constant supervision by the medical officer of health is made a special duty under the Board's recent Order. Thus, he is required to report "as to the sufficiency and quality of the water-supply of his district and of its several parts; and in areas where the supply is from waterworks, as to whether the supply is constant or intermittent." Moreover, he is required to furnish a report as to the pollution of rivers and streams in his district. In view of the fact that many river waters are liable to serious pollution, especially after heavy rain, the latter requirement is vitally important. In the course of the year the Board corresponded with several local authorities in consequence of complaints of defective water-supplies, insisting, in certain cases, on the removal of dangerous conditions.

Inspection of Meat.

In connexion with the supervision of the foreign meat-supply in the interests of the public health at home, the Board's attention was drawn during the year to the presence of a parasitic worm in the frozen quarters of meat arriving here from Australia, the resulting pathological condition being known as onchocerciasis.[4] In order to deal effectively with onchocerciasis in Australia the Commonwealth Government has made satisfactory arrangements for inspection of meat before export to this country. Chinese pork is now imported here in increasing amount; large consignments of Chinese pigs imported at Liverpool were examined during the year, and were found to comply with the official regulations, and as regards the Chinese farms in which the pigs are reared, Dr. R. A. Farrar reports, as the result of personal inspection, that their condition is generally satisfactory. The preservative treatment of imported meat by means of formaldehyde was made the subject of investigation during the year. The question of the suitability of this chemical for preservative purposes is dealt with in a report issued by the Board in 1909.[5]

Canal Boats.

Only a few years ago the influence of the canal-boat population as disseminators of infectious disease was generally considered dangerous to the communities dwelling on the canal banks. But in recent years the canal traffic has been steadily declining, the number of inhabited boats in use having consequently decreased. The dwellers in these boats are kept under better supervision than formerly, and a recent report speaks appreciatively of the coöperation for this purpose of the sanitary authorities concerned. Nevertheless, in some places canal-boat inspection is still perfunctory, the boats being simply observed from the canal banks or the numbers copied from the entries of previous years. Only 26 cases of infectious disease have been reported on board the 9121 boats used as dwellings during the year—viz., 8 of diphtheria, 5 of scarlet fever, 3 of erysipelas, 9 of enteric fever, and 1 of puerperal fever.

[4] THE LANCET, Feb. 4th, 1911, p. 317.

[5] Foods Report, No. 9, by Dr. Buchanan and Dr. Schryver.

THE RADIO-ACTIVE PROPERTIES OF THE WATERS OF BATH.

IT was suggested in an article in THE LANCET of Jan. 30th, 1904, that the fact that the Bath waters were found to be radio-active might lead to a more satisfactory explanation of the favourable action of natural mineral waters in hydrotherapeutic practice, and further inquiry has shown that the suggestion was a sound one. The presence, at all events, of salts which are of common occurrence, such, for example, as the sulphates and carbonates of calcium and sodium and chloride of sodium in small quantities, can hardly be referred to as accounting for the reputation of many natural waters in the treatment of disease.

At a meeting held in the Grand Pump Room at Bath on March 11th Sir William Ramsay gave an interesting and lucid account of his recent investigations into the characteristics of Bath waters before an audience composed chiefly of local medical men, with the Mayor, Mr. Alderman T. Forder Plowman, J.P., in the chair, supported by the city councillors. Referring to the analyses of the Bath waters made in 1899 in THE LANCET Laboratory, Sir William Ramsay said that there are undoubtedly mineral waters which owe their curative power to what may be termed ordinary chemical ingredients. Such were, for instance, sulphur waters, ferruginous waters, arsenical waters, and possibly lithium waters; but the recorded analyses of the Bath waters show, in the main, merely ordinary constituents, most of which are present in many drinking waters. "Sulphates of calcium, of sodium, of potassium, carbonates of calcium and magnesium, are all common substances, and the only unusual constituents of Bath waters, so far as the analysis made at THE LANCET Laboratory shows, are small quantities of strontium, of lithium, and a trace of bromine." The fact, however, that many mineral waters all over Europe have for ages been used for curative purposes, combined with our present knowledge that such waters, while not remarkable in "chemical" composition all agree in yielding helium, the product of decay of radium, makes it of particular interest to examine these waters for niton, the radium emanation, as well as for radium itself. Investigation, he continued, showed that the Bath waters are relatively rich in niton, showing an effect equal to the activity of 1·73 milligrammes of radium in a million litres. The gases evolved, moreover, contain also a relatively enormous amount of neon.

It is quite clear from these experiments that the Bath waters must possess marked radio-active properties, and a very simple observation, only recently interpreted rightly, in our opinion confirms this view. For a very long time it has been noticed that in the drinking glasses in which the Bath mineral waters have been served a uniform discolouration of the glass sooner or later takes place. In fact, when the water is left in contact with the glass for merely a few weeks the discolouration is very marked, the vessel becoming of a greenish-yellow hue. This was thought to be a deposit of iron on the glass, but it is now

shown to be due to the action of radio-active substances, just as some windows facing to the south assume an amethyst tint by the action of the rays of the sun. In the former case the greenish-yellow colour is probably due to some separation of lead, while in the latter the amethyst tint is due to traces of manganese in the glass.

Sir William Ramsay further pointed out that in conjunction with Dr. A. C. Stevenson at University College, he had conducted experiments in which mice were fed with bread and cheese soaked in a solution of niton and in which kittens were injected with a similar solution, as well as fed with it. In this way it was shown that the niton is got rid of chiefly by the lungs, and that in about three hours. After 12 hours all traces have disappeared. It may be that when a patient takes a bath the skin absorbs some niton; and some undoubtedly enters the lungs, for it is continually being given off from the surface of the hot water. Assuming this to be the case, he asked whether there is any means of increasing the dose taken by each of these methods of absorption. Skin absorption could be increased by placing the patient in the electric bath, connecting him with the negative pole of a battery and placing the positive electrode in the water. Since niton in disintegrating is continuously discharging electrons, or, in the older phraseology, losing negative electricity and becoming positively charged, the emanation would be attracted by a negatively charged body, and the niton would thus rapidly reach the skin. It would most likely, indeed, enter the system by ionisation. Experiments on these lines would require to be made with caution, but it is not probable that a dangerous dose would accrue when the waters of Bath were employed, since the amount of niton in an ordinary bath-full of water would be small. If desirable, Sir William Ramsay suggested, much larger doses of niton could be administered by using the gases together with spray directly against the skin, and it is conceivable that such an administration might prove efficacious in the treatment of local rheumatism. Care would have to be exercised in using this mixture as a spray in breathing, as absorption by the lungs would no doubt be very rapid.

At the termination of the address, which was followed with the greatest interest, a vote of thanks to Sir William Ramsay was proposed by Alderman C. Bryan Oliver, J.P., chairman of the Hot Mineral Baths Committee, who said that Sir William Ramsay had undertaken the investigation voluntarily and purely from a scientific point of view. Dr. R. J. H. Scott seconded the proposal, which was supported by Sir James Mackenzie Davidson, who referred to researches which had shown that treatment by radio-active mineral waters appeared to diminish uric acid production and had been used with distinct relief in rheumatic cases. He regarded, however, the whole question as being in the melting-pot, further investigations being needed if the method was to escape the reproach of empiricism.

We understand that the results of Sir William Ramsay's investigation are considered by the members of the corporation to be of such far-reaching importance as to justify them in making fresh financial proposals in order to develop the facilities for treatment by the thermal waters of Bath in the direction indicated.

PRESENTATION TO MR. F. T. PAUL.—A dinner will take place at the Exchange Hotel, Liverpool, on Wednesday, March 27th, at which it has been arranged to present to Mr. F. T. Paul his portrait, painted by Mr. Hall Neale. This has been subscribed for by Mr. Paul's friends and colleagues on his retirement from the active surgical staff of the Royal Infirmary. Those desirous of being present at the dinner are requested to communicate with one of the honorary secretaries—Mr. T. C. Litler Jones, 1, Abercromby-square, and Dr. Hubert Armstrong, 7, Rodney-street, Liverpool.

MEDICAL MAN FINED IN AN X RAY CASE.—A Bavarian practitioner has been fined £4 for causing bodily damage to a patient whom he was treating by means of Roentgen rays. It seems that he left the room for a few moments, previously enjoining the woman to lie quite still and not to move. Disobeying him, however, she shifted her position and received slight burns on the tip of the nose, the chin, and the chest. The court decided that the medical man was to blame for having absented himself without turning off the current.

MEDICAL AND SANITARY ADMINISTRATION IN THE GERMAN COLONIES DURING 1909-1910.[1]

THE annual medical reports upon the German colonies increase in interest and importance, while the amount of material comprised in them grows larger year by year. The report for the fiscal year beginning April 1st, 1909, and ending March 31st, 1910, has now been issued and contains twice as much printed matter as that issued four years ago. It is regrettable that the report should be so belated, though valuable lessons may be drawn from it none the less.

Germany's possessions outside Europe are divided into two groups—(1) those situated in Africa and (2) those in Oceania; the former include the colonies of German East Africa, the Cameroons, Togoland, and German South-West Africa, while the second group consists of German New Guinea, the Caroline Islands, the Marshall Islands, the Marianne or Ladrone Islands, and Samoa. A medical report on each of these colonies is included in the volume for 1909–10, with the exception of South-West Africa, as to which, for some unexplained reason, no report is given on the present occasion.

German East Africa.

The most important of Germany's extra-European possessions is the colony of East Africa, which has an estimated population of 7½ millions, the report upon it filling 246 pages out of the total 649 comprised in the present annual volume. The details contained in it may therefore be taken as a sample of the other reports, which, however, are naturally not quite as full of detail. The medical staff employed in East Africa is about 100, but even this number was reduced by a fifth during the year owing to home leave and other causes; moreover, the routine medical work was further interfered with by some members of the staff being detailed for special duty in connexion with measures directed against prevalent diseases such as small-pox, plague, malaria, ankylostomiasis, and sleeping sickness.

Vaccination and Small-pox.

The value of vaccination is now recognised by the natives of East Africa, who gladly accept the protection offered by it. Small-pox was prevalent during the year, particularly in the proximity of the new railway line now in process of construction. The cases officially reported numbered 860, and of these 234 died, giving a case-mortality of 27·2 per cent. It is probable that other cases were not reported, especially in localities where no medical officer or official was stationed. Nearly 900,000 vaccinations were performed during the year, about 81,000 of which were revaccinations, the successful results being about 73 per cent. of the whole.

Hitherto vaccine lymph has been obtained from Hamburg, and although this, owing to certain precautions taken during the voyage, was found quite active on its arrival, it rapidly deteriorated during transit into the interior. The plan now followed is to vaccinate calves with the Hamburg lymph as soon as it reaches the Port of Daressalam, the fresh calf lymph thus obtained being dispatched up country to the various stations, where again other calves are inoculated with the Daressalam lymph, and from these latter calves a supply is produced for vaccination of the natives of each district. In this way some 13 lymph producing stations in addition to that at Daressalam are now able to afford a copious supply of fresh and active lymph at a comparatively small cost. It is well known that local strains of vaccine lymph tend to lose their virulence in time; in order, therefore, to start a new strain calves at two stations (and also a sheep) were successfully inoculated with human variolous matter. At one station where goats had similarly been inoculated it was found, however, that calves could not be successfully vaccinated from them. Question also arose as to the identity of African and European small-pox, and whether vaccination by European lymph conferred protection against African small-pox or *vice versâ*. After due investigation by members of the staff it was decided that the disease, as it appears in Europe

[1] Medizinal-Berichte über die Deutschen Schutzgebiete, für das Jahr 1909–10 (Medical Reports upon the German Colonies for the year 1909–10), edited by the Imperial Colonial Office. Published by Ernst Siegfried Mittler und Sohn, Berlin. 1911. Pp. 649, with 45 illustrations in the text and 13 reproduced photographs. Price 11 marks bound, and 10 marks unbound.

and Africa, is identical, and that vaccination with African lymph conferred protection in either case. It is worth mention that vaccine lymph is purchased from the German Institute at Daressalam by the British authorities at Zanzibar for use in that territory.

Plague.

Though plague was prevalent in the previous year at Daressalam, it did not recur during 1909–10; nevertheless, measures were continued with a view to prevent its spread. Over 28,000 rats were destroyed, and of these 10,192 were examined in the laboratory without any infected animal being found. The experiment was tried of keeping domestic cats, but the native cat takes no trouble to hunt for rats, nor was the substitution of Egyptian cats attended with any better success. The best arrangement was found to be the employment of skilled rat-catchers giving their whole time to the work. Up country plague appeared in two districts, Muanza and Kondoa-Irangi, in both of which places a simultaneous epizootic among rats was observed. Over 132 persons were reported as attacked by plague, the infection having, it is alleged, been introduced from Port Florence (in British territory) into Kondoa-Irangi, though it is admitted that plague has been endemic in Muanza for many years.

Malaria and Blackwater Fever.—Ankylostomiasis.

Malaria and blackwater fever are responsible in East Africa for a third of all reported sickness and deaths. Anti-mosquito measures, more especially in the coast towns, were actively carried out, and search was made to discover carriers of the parasite. In Tanga alone 13,704 persons were specially examined, and in the blood of 5837 of them the malarial parasites were found; and of 560 Europeans, none of whom had obvious illness, 66 were discovered with parasites in their circulation. As regards children with splenic enlargement, 787 out of 1130 examined were positive—that is, 70 per cent. An increased rainfall was associated with greater prevalence of malaria during the year. In towns—such as Daressalam—the number of dwellings in which the doors and windows are screened with wire gauze is becoming larger each year, and in the native huts the use of mosquito nets at night is getting more general. On the other hand, it cannot be denied that the number of Europeans who habitually neglect quinine prophylaxis is on the increase.

Ankylostomiasis has considerable influence upon the sickness and mortality among the natives of the colony, and on economical grounds its suppression is very desirable. In two districts the respective medical officers examined the stools of altogether 10,150 persons, and of these 4188 were found infected. The campaign against ankylostomiasis includes the distribution gratuitously of leaflets in German and Swaheli, giving a short account of the way the disease is spread and how it can be prevented. Regulations for providing proper and sufficient latrine accommodation are enforced, as also measures for protection of domestic water-supplies. The stools of all suspected cases are microscopically examined, and appropriate treatment is given to all found to be infected.

Sleeping Sickness.

Sleeping sickness is prevalent in two parts of the colony, on the shores of the Victoria Nyanza and along the banks of Lake Tanganyika. A sum of rather more than £12,000 was expended in the campaign against the disease during the year. The plan of interning all persons suffering from sleeping sickness in camps was not pressed on account of the grave objections made to it by the natives, but steps were taken, where practicable, to remove the threatened population from the fly-infected regions to other fly-free areas, as has been done in Uganda by the British authorities. Efforts were made also to cut down bush and undergrowth near water where the glossina palpalis makes its haunts and breeding places. The drugs used in the treatment of the sleeping sickness cases were atoxyl, arsenophenylglycin, arsacetin, mercury, &c., alone or in combination, the two first-named giving, perhaps, the best results.

It is evident from the extracts we have quoted that in East Africa, as well as in the other colonies of Germany, the treatment and prevention of disease are carried out by the most modern methods. The economic development of these possessions, rapidly progressing, notwithstanding all the hindrances arising from endemic tropical disease, need not therefore surprise us.

SEVENTEENTH INTERNATIONAL CONGRESS OF MEDICINE.

CANADIAN REPRESENTATIVES.

THE following nominations have been received from the Canadian National Committee in response to the invitation sent them by the Organising Committee:—

Executive Committee.—Dr. Alexander McPhedran, Toronto; Dr. W. H. B. Aikins, Secretary of the Canadian Committee, Toronto.

Organising Committee.—Dr. George Armstrong, Montreal, President of the Canadian Medical Association; Dr. C. K. Clarke, Dean of the Medical Faculty, University of Toronto; Dr. J. C. Connell, Dean of the Medical Faculty, Queen's University, Kingston; Dr. H. H. Chown, Dean of the Medical Faculty, University of Manitoba, Winnipeg; Dr. E. P. Lachapelle, Dean of the Medical Faculty, Laval University, Montreal; Dr. F. J. Shepherd, Dean of the Medical Faculty, McGill University, Montreal.

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Council.—James Playfair McMurrich, M.A., Ph.D., Professor of Anatomy, University of Toronto.

Section II.—Physiology.

Vice-President.—Thomas Gregor Brodie, M.D., F.R.S., Professor of Physiology, University of Toronto.

Council.—Archibald Byron Macallum, M.A., M.B., Ph.D., Sc.D., LL.D., F.R.S., F.R.S.Can., Professor of Bio-Chemistry, University of Toronto; Swale Vincent, M.D., D.Sc., F.R.S. Can., Professor of Physiology, Manitoba University.

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Council.—John Joseph Mackenzie, B.A., M.D., Professer of Pathology and Bacteriology, University of Toronto.

Section III. (a).—Chemical Pathology.

Council.—John Beresford Leathes, B.A., M.B., B.Ch., F.R.C.S., Professor of Chemical Pathology, University of Toronto.

Section IV.—Bacteriology and Immunity.

Council.—Alfred H. Caulfield, M.B., Director of the Pathological Department, National Sanatorium Association, Gravenhurst, Ontario; Gordon Bell, M.D., Bacteriologist for Manitoba, Professor of Bacteriology, Manitoba University.

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Section VII. (b).—Anæsthetics.

Council.—Robert A. Stevenson, M.D., Toronto; Samuel Johnston, B.A., M.D., C.M., Demonstrator in Anæsthesia, University of Toronto.

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Council.—Lieutenant-Colonel J. T. Fotheringham, M.D., Army Medical Corps, Toronto.

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Council.—J. L. Todd, B.A., M.D., B.Sc., Associate Professor of Parasitology, McGill University.

Section XXII.—Radiology.

Council.—F. C. Harrison, B.A., M.B., Assistant in Pharmacology, University of Toronto, Physician, Toronto Hospital for Incurables.

A GLIMPSE AT OLD-TIME CAMBRIDGESHIRE DOCTORS.

THE kind of history that consists merely of recounting a number of isolated facts is of little profit. It is safe to say that reconstructive works, such as Becker's "*Gallus*" and his "*Charicles*," convey a better concrete idea of the actual daily life in classical times than any amount of the kind of classical reading which we do as schoolboys. We must learn to view archæological remains with the mind's eye as part of the reconstructed whole. We are led to these reflections by the perusal of a pamphlet by Dr. W. M. Palmer on "Cambridgeshire Doctors in the Olden Time,"[1] wherein we are shown these worthies, not as curiosities in a museum, but as human beings, living their lives as professional men in an environment superficially so totally unlike, and yet in its fundamentals so essentially the same as our own.

Some Interesting Details.

Dr. Palmer's paper deals chiefly with the sixteenth and seventeenth centuries. He brings the dry bones to life by giving us, after a preliminary excursus on his sources of information, the regulations of early medical practice, and the various grades of medical practitioners, an interesting and humorous sketch of two village practitioners, respectively of the sixteenth and seventeenth centuries, as well as equally interesting records of certain Cambridge doctors—viz., Walter Lemster, physician (? 1440)–1487; John Thomas, surgeon (? 1490)–1545; Robert Pickering, physician (a contemporary of Thomas); John Hatcher, M.D. (? 1512)–1587; Thomas Lockyn, M.D., 1528–1591; and William Butler, 1536–1618.

The first important Medical Act, passed in 1511, required, as regarded country doctors, that no person should practise as a physician or surgeon in any diocese until he had been examined and approved by the Bishop, aided by such expert persons in those faculties as were convenient. The penalty was £5, or £50 of our money, for each month in which he practised without such licence. A search through the Bishop's Court books discovered 15 medical practitioners in the diocese of Ely in 1640, of whom four were in Cambridge and the rest at Brinckley, Chatteris, Chesterton, Coton, Cottenham, Ely, Ickleton, Melbourn, Meldreth, Shudy Camps, and Wisbech, though this list is probably not complete. There were also 33 midwives in the county and Isle of Ely. The six recognised grades of practitioners appear to have been physicians, surgeons, barber-surgeons, apothecaries, midwives, and bone-setters, of whom the first four had either to take a degree or licence at one of the universities or to pass through an apprenticeship.

Dr. Palmer appears to doubt the truth of the general opinion as to the low status of the surgeon of those days, for he says: "Most of the writers on the history of medicine have been physicians, and they have invariably put the position of the surgeon as a low one."

A Country Practitioner at the End of the Sixteenth Century.

Speaking of the real country practitioner, the doctor living in a country village, with no colleague within several miles, Dr. Palmer tells all he has been able to find out about one Mr. John Stacey, a predecessor of his own in Linton, who first came under his notice through the records of a medico-legal case of 1581. A woman having been indicted before the Bishop's Court "for incontinency and contingent offences," called in her defence her doctor, Robert Widdows, of Cambridge, but "either Dr. Widdows had scruples about divulging professional secrets, even in the spiritual court, or did not want to be cross-examined, or Mrs. Horner hadn't paid her bill—anyway he wouldn't give evidence." So she fell back on her husband's doctor, Mr. John Stacey, of Linton, who attended and gave evidence in support of her character. What the issue of the trial was we are not told, but we learn of Stacey that he was at one time a trusted member of Sir Phillip Paris's household, who left him the keeping of his house in Linton during the nonage of his son Robert. On Robert's death before attaining his majority, Stacey bought a house in Linton and settled in practice. He seems to have been successful, for in 1592 he paid the fifth highest amount of taxes in Linton.

Another Country Doctor (1685).

The house of another country doctor, Mr. John Longworthy, a practitioner in physic and surgery, West Wrattling, a small country village, in 1685, is described as follows:—

> The house consisted of hall, great and little parlours, closet for drugs and surgical instruments, kitchen, pantry, and cellar, with five bedrooms and a garret which was used as a granary. A building with two gables and a connecting hall, such as still exist in this county, would fit this description. On entering the hall you would have seen two gate-legged tables, five joined stools, a grandfather's clock, and a corner cupboard. The hearth contained a fire grate, but the floor was carpetless. In the little parlour was an oval table and six painted chairs. No carpet and an open hearth. In the great parlour was the only carpet in the house; an oval table, probably of walnut, six leather and two panelled chairs and an open hearth with large cobirons. As regards the bedrooms, the hall chamber and the great parlour chamber contained fireplaces, which were also open hearths. In the former was a four-poster bed, a carved oak hutch, three chairs, and a pair of bellows. In the great parlour bedroom, evidently the best bedroom, was another four-poster with curtains, a chest of drawers, and a looking-glass, altogether valued at £10, the most expensively furnished room in the house. The other bedrooms were meanly furnished and without fireplaces. One of them is called the manservant's room, so the doctor's groom slept in the house. In the kitchen was a table, with four chairs and a screen. The value, including roasting apparatus, brass and pewter, was £6 10*s*. The only eating utensils mentioned besides this pewter are a case of knives in the pantry and some earthenware.

Of linen there was goodly store, 12 pairs of sheets and five dozen table napkins (forks were not then in general use in England so that the fingers required constant wiping); and this, Dr. Palmer reminds us, was linen that did not wear out and was often bequeathed in wills. In the cellar were four half-hogsheads of beer and smaller barrels, and there was a cider press in the brewhouse. "His instruments and utensils for physic and chirurgery, two stills, one mortar, and a few old books, £4," were of exactly the same value as his linen. Dr. Palmer depicts his subject as probably spending many hours "grinding dried roots to powder in his mortar, with one eye and ear on the bubbling of the fluid in his still," and shrewdly remarks: "A man who spent hours in the preparation of his physic had more faith in it than some have nowadays." Mr. Longworthy was also a farmer, as many country doctors are to some extent to-day, and his agricultural goods amounted to £65 out of a total of £121.

Much quaint information has been collected by Dr. Palmer

[1] Cambridgeshire Doctors in the Olden Times, 1466–1827. By W. M. Palmer, M.D. Durh. From the Cambridge Antiquarian Society's Communications, vol. xv., 1911.

about the drugs used by a country doctor of the eighteenth century. Occasionally possessions to be found in the inventories suggest the spoil of churches. For instance, Dr. Hatcher, of Cambridge (? 1512–1587), possessed, among other things, "a cope of tissue upon green velvet, with a cape and border of images of needlework," valued at 35*s.*, and "an auter cloth of purple velvet with branches 3¾ yards, 25*s.*"

The Case of a Cambridgeshire Vicar.

Dr. Palmer concludes his very interesting paper with "a sad account of a Cambridgeshire vicar of the fifteenth century who was dissatisfied with local skill and went to London for further advice," which he sought from John Brown, warden of the Barber-Surgeons in 1494. The latter undertook to "do his cure" on the parson, who on his part undertook to pay £10 (half a year's stipend of his vicarage), half when he could walk without a crutch and hold up his arms so that he might say mass, the other half 13 weeks after he was completely whole. But he committed the mistake, poor simple soul, of signing an obligation of £20 to compel him to fulfil his bargain when cured. After he had been more than six months in the city at great expense to himself, the surgeon asked for his fee and was met with the objection, "But I am in like case as I was when first you took me in cure and no better." He refused to pay and the surgeon ceased to attend.

The poor vicar's expostulation, however, was fruitless, for the surgeon commenced an action for debt by means of the obligation against the vicar in the Sheriff's Court, to which the vicar put in surety and was prepared to answer. But the wily surgeon knew a trick worth two of letting the case come to trial, for, in Vicar Dobson's own words, "Brown now proceedeth no further in the action, but lets it depend in the court, to thentente that Dobson should lie styll in London to his grete costs and charges unto such tyme as by that means he shulde be fain to pay Brown £5, that he demandeth for his labour." No more is known about the case, but as the next appointment to the vicarage of Melbourn occurred in 1503, the vicar probably lived until then. Dr. Palmer closes his paper with the pithy remark, "The fame of London specialists must have been dim in that village for many years to come."

THE LONDON COUNTY COUNCIL AND MEDICAL AFFAIRS.

Proposed Extension of the Present System of Medical Treatment.

THE Children's Care Committee reported to the Education Committee of the London County Council on March 6th that it had approved certain variations in the number of cases dealt with at the treatment centres controlled by committees of medical practitioners in Islington, St. Pancras, and Hackney. An offer had been considered from a voluntary committee, not wholly composed of medical practitioners, to establish an additional centre in Poplar for treatment on five afternoons a week upon the conditions proposed in respect of other centres. The committee had approved of arrangements with this local committee for twelve months, the number of children to be dealt with being 880 suffering from eye defects and 1320 suffering from ear, nose, and throat ailments. The Metropolitan Hospital, Kingsland-road, was prepared to undertake the treatment of 500 eye cases and 500 ear, nose, and throat cases a year upon the terms usually offered by the Council, and the Care Committee had agreed to the inclusion of this hospital in the medical treatment scheme as likely to be of assistance in meeting the needs of Haggerston and South Islington. The Committee had also accepted an offer by the authorities of St. Cecilia's Home, Commercial-road, Stepney, to arrange for the cleansing of verminous children and for the medical treatment of ailing children. Treatment would be provided for 440 cases and it would be given in two inter-communicating rooms. A doctor would attend on one half day a week; his salary would be paid by the Council. The cost if 440 cases were treated for ear, nose, and throat ailments not requiring operations and for external eye diseases would be £104 a year.

In connexion with the foregoing the Care Committee drew attention to the steps taken by the Council since the autumn of 1911 (in accordance with the promise to the Board of Education), with a view to coördinating medical inspection and treatment, and to securing the efficiency of the treatment centres. Under newly proposed arrangements the following provisions were included: (1) The local committees had agreed that the doctors themselves who performed the work (instead of as heretofore their qualifications only) should be subject to the approval of the Council; (2) arrangements for the attendance of a lay officer or a nurse to supply information to school care committees as to the nature of treatment ordered by the doctors were now in operation at all the existing centres, and it was proposed to extend them to suggested centres; (3) the school doctors and the doctors at the centres would exchange information; and (4) the adoption of the proposals now made would give the Council experience of providing treatment at three types of centre—namely, at hospitals, at centres established by local practitioners, and at centres provided by committees which were not composed of medical practitioners. The committee felt that the Board of Education should be informed of these points, and also of the experiment approved at the end of 1911 and put into force on March 1st this year, in the East-end of London, in carrying out medical inspection by full-time officers under the supervision of a divisional medical officer, who would work in close coöperation with the Council's officers at the treatment centres. The Board should be asked to sanction the establishment of the proposed additional centres as a matter of urgency, inasmuch as there was special need for the treatment of children in the districts which would be served by the centres. A comprehensive report on the work of medical treatment in London generally would be submitted in October next. The total expenditure involved in the present proposals was £3565 a year for treatment and £475 in the first year for apparatus.

The Education Committee directed that a letter in these terms be sent to the Board of Education.

Playground Classes.

The Board of Education, while commenting favourably on the improved arrangements for medical supervision recently introduced into playground classes, has made certain suggestions to the London County Council with a view to bringing about further improvements. These were submitted to the Council on Feb. 20th. In classes in which all the children are definitely chosen on the ground of delicacy of health the Board thought it was desirable that every child should be subjected to systematic medical inspection as early in the session as practicable, and that all initial and subsequent records made by medical officers should be dated. In classes in which the influences needed were mainly preventive the Board thought that the medical examination should be conducted on more uniform lines than at present. While some examinations were thorough, others appeared to omit such important details as the chest and lungs, others again included merely such items as could be gathered from simply looking at the child, while in some of the schools medical supervision of every kind was omitted. That there was need for inspection of the more thorough kind was obvious from the serious cases of defect that occurred in certain of the classes, the scholars of which had been subjected to medical inspection. It was important that the results of routine medical inspection should be re-entered on playground class records (as was done in some cases) in order that the open-air class might be better utilised as a means of following up those cases most likely to benefit under its influence. "Control" measurements might be more generally instituted in classes of the kind referred to, and they should have special reference to height, weight, and hæmoglobin content. The Board pointed out that the open-air class was an experiment likely to yield results useful to the whole country, and it was important, therefore, that its usefulness should rest on scientific bases of the kind to be obtained by means of "control" measurements.

The Council decided to ask the medical officer to meet the suggestions of the Board as far as possible.

The Council also resolved to ask the Board of Education to approve the formal appointment of Dr. W. H. Hamer for the purpose of certifying defective or epileptic children within the meaning of Section 1 of the Elementary Education (Defective and Epileptic Children) Act, 1899.

Medical Inspection of Secondary Scholars.

The Education Committee reported that the governors of Lewisham Grammar School had asked whether it would be possible for the Council's medical officer, in examining the scholarship holders at the school, also to examine other pupils at a fixed fee per pupil to be paid by the pupil's parents. The committee pointed out that the Council had already decided to examine all pupils, whether fee-paying or scholarship holders, in its own secondary schools, and so had accepted the principle that medical examination of all pupils was desirable. The cost of the examination of the fee-paying pupils would not exceed 2*s.* a year per pupil, and the committee recommended that the governors' request should be granted on this basis.

Principle of Open-air Schools Approved.

The Education Committee of the London County Council has had under consideration the policy to be pursued with regard to open-air schools, and has decided that, having now passed the experimental stage, they should be placed on a permanent basis. The first open-air school was held at Bostall Woods in 1907, and in view of the great improvement in the health of the children who attended it was decided to extend the experiment to three schools for 1908. In 1911 the schools were continued a greater number of weeks than in previous years—in one case the school was held during the whole year. The favourable medical reports upon the open-air schools held during the year 1908 had been confirmed in successive years. It was evident, the Special Schools Committee stated, that children suffering from debility, anæmia, &c., and consequently unable to benefit from the instruction in ordinary schools, could be restored to take their places in their classes. The physical and intellectual improvement shown was very remarkable, and the committee had come to the conclusion that these results were due in a large measure to the course of instruction given under open-air conditions. In regard to the extension of open-air schools, playground classes would have a material effect in reducing the number of children who required the *régime* of the open-air school. The medical officer, however, stated that there was a large number of children in London elementary schools suffering from some specific condition requiring such treatment, and presumably there would always remain an appreciable number of these.

At the same time the committee pointed out there were two great difficulties in the way of any considerable extension of the system of open-air schools: one was the extreme difficulty of obtaining sites, and the second the cost, which was very high as compared with that of ordinary schools. The average cost per head of attendance for nine months at open-air schools was £14 7*s.*, and at ordinary schools £1 9*s.* Having regard to these circumstances, while the principle of holding a limited number of open-air schools should be approved, any extension of the system should be very gradual. When the playground classes were in fuller operation, and more use was made of existing opportunities of open-air work, it would be possible to gauge the amount of special provision still necessary.

LITERARY INTELLIGENCE.—We have received from Messrs. John Wright and Sons, Limited, of Bristol, an unbound and incomplete copy of "An Index of Differential Diagnosis of Main Symptoms," by Dr. Herbert French, with the explanation that now that their own work is practically over—as evidenced by the book before us—there seems likely to be a still further delay in binding owing to the coal strike. This is, of course, the more regrettable as the publishers admit that already they have had to keep their subscribers waiting an unconscionable time after the probable date of publication owing to the difficulty in construction of the general index, which turned out a formidable task greatly exceeding their expectations.—Messrs. J. and A. Churchill announce the following for immediate publication: "Diseases of the Eye, a Manual for Students and Practitioners," by Mr. J. H. Parsons. A new feature in this, the second, edition will be the inclusion of a colour test card in wools. The same firm is publishing a seventh edition of "A Simple Method of Water Analysis," by Dr. J. C. Thresh; and a second edition of "The National Standard Dispensatory," edited by H. A. Hare, B.Sc., M.D., Charles Caspari, and H. R. Rusby, M.D.

MEDICINE AND THE LAW.

The Constituents of Butter.

AT the Tower Bridge police court recently a summons against the Central Creamery Company, Limited, which had been dismissed upon a technical point and sent back for re-hearing after an appeal, was heard by Mr. Rose and dismissed, with £40 costs, against the Board of Agriculture, which was responsible for the prosecution. The prosecution sought to show that the presence of certain milk powder found upon the premises of the defendant company constituted an offence against Section 3 of the Butter and Margarine Act, 1907, and it was also alleged that the high percentage of lactose contained in butter found upon the defendants' premises showed that milk powder had been used in its preparation. It had been stated that the powder was the property of a director of the company and was stored upon its premises pending its sale to private customers. Mr. Otto Hehner, giving evidence for the defence, said that the blending, reworking, and renovating of butter was necessary for the production of an article of uniform quality such as was required in such a business as the defendants'; that milk powder was largely used in connexion with such renovation; and that any person using modern methods would so employ sterile milk powder. He also deposed that whereas butter usually contained 0·4 per cent. of lactose, he had found in samples as much as 1·2 per cent., whereas 1·5 was the amount shown by the sample taken on the defendants' premises. He assured the magistrate that it would have no harmful effect, and stated that he always accepted as butter an article containing 80 per cent. of butter-fat. Further evidence given by analysts showed that all the constituents of milk powder were found in all butter, and that it had a high nutritive value. It was agreed as to the standard of 80 per cent. of butter-fat being sufficient, and as to the good quality of the defendants' butter. Mr. Rose found that the milk powder was not intended to be used for the adulteration of butter, and dismissed the summons as stated above.

Excessive Use of Thyroid Extract.

At the Westminster Bridge police court recently Mr. Horace Smith had before him, upon a charge of stealing from the Army and Navy Stores, the wife of a colonel in the army, who had taken a number of articles exposed for sale, and while purchasing in the drug department a large quantity of thyroid extract had also abstracted two boxes of throat pastilles. Evidence was given by Mr. T. L. Archer, divisional surgeon of police, which left no doubt that when he was called to attend the prisoner at the police station she was in a highly nervous and excited condition, and that this was due to her having been deprived, while in custody, of the thyroid extract which she had bought and of which drug she had been in the habit of consuming large quantities. Mr. Archer was of the opinion that her mental condition, due to the abuse of the drug, would fully account for her committal of the acts with which she was charged. Dr. J. D. Cree, who had treated the prisoner for some months, deposed that she was suffering from Graves's disease, for which he had prescribed thyroid extract. He had increased the dose from 3 to 11 grains a day between September and Jan. 3rd, when he last saw her, and he was not aware then that she was exceeding the latter amount. By her own admission, however, she had taken recently as much as 35 or 40 grains daily, an excessive amount which would account for her condition and acts. He considered that the effect would be to destroy her mental balance, and that on Jan. 9th when she was arrested, she was not accountable for her actions. Mr. Horace Smith accepted the view expressed by the two medical witnesses, and said that it was unnecessary to hear further evidence to the same effect, which was tendered. In the course of his evidence Mr. Archer had called attention to the ease with which such a drug as thyroid extract might be purchased, Mr. P. Conway, the lady's solicitor, also making observations upon the subject. The magistrate declined to comment upon this aspect of the matter, remarking that it was not part of his duty to do so, as he was not a legislator, but the case will be noted as illustrating the danger which arises, even assuming a prescription to be in

the hands of a purchaser, owing to the existence of no legal limitation as to the frequency or continuance of its use.

General Practitioners and their Locum-tenents.

A case of considerable interest to general practitioners, arising out of the engagement of a locum-tenent, was heard at the Clerkenwell county court on March 5th. The action was brought by Mr. Henry Bazett against Dr. Thomas G. Hockridge of Lloyd-square, W.C., for £26 8*s.* in respect of damages arising out of an alleged breach of contract. The material question at issue was that of the length of notice which a locum-tenent was entitled to receive in termination of his engagement. The plaintiff stated that the defendant had made a contract with him to act as locum-tenent from Nov. 30th, 1911, to Jan. 16th, 1912, at the rate of 4 guineas per week, and board and lodging. On Dec. 15th, the plaintiff, through illness, had to leave the defendant's house for temporary rest and on his recovery he was refused permission to continue his duties. The claim was for £19 4*s.*, salary for four weeks and four days, and £7 4*s.* as an equivalent to board and lodging for the same period. The defendant called evidence of a custom in the profession of 48 hours' notice to terminate such an engagement. The plaintiff denied this, and contended that each medical man had his own rules, and that these varied. In the case of illness of a doctor a locum-tenent was engaged for an indefinite period; if the engagement was by the day payment was at the rate of 1 guinea per day. The defence was that a principal could dismiss a locum-tenent at practically a moment's notice. It was only a temporary engagement, though payment was usually made weekly for the sake of convenience. The defendant cited 38 years' experience of such engagements which were always subject to 48 hours' notice. The plaintiff, in addressing the bench, submitted that the relation between principal and locum-tenent was that of master and servant, and that it would be an exceedingly hard and serious thing for the locum-tenent to be placed outside that law and, because of illness, have to bear the brunt of it all. In giving judgment his honour said that the plaintiff fell ill and had to be replaced by another locum-tenent. The plaintiff took up the position that "although you have to pay somebody else you must pay me as well." It seemed to him impossible to accept that conclusion. The principal of the law of master and servant did not apply in this instance and judgment must be for defendant with costs. The plaintiff asked whether he had the right to appeal, to which his honour replied in the affirmative.

An Interesting Case under the Workmen's Compensation Act.

Recently at the Weston-super-Mare county court, before his Honour Judge Austen, the widow of a chef at a local hotel claimed £300 under the Workmen's Compensation Act for the death of her husband. The deceased man, whilst dressing in his room in the hotel, slipped over a mat, and complaining of great pain went home and sent for a medical man. The medical attendant stated that deceased had abdominal pains, and a post-mortem examination showed that death was caused by hæmorrhage from a ruptured right renal artery. He added that although he had never known or read of a renal artery being ruptured by a violent twist, he considered in this case that that had occurred and caused death. The medical man was not allowed to state what the deceased had told him of the accident—viz., that he had slipped whilst dressing and violently twisted himself—his Honour holding that the statement would not be evidence. Judge Austen, in deciding against the claim, said he was not satisfied that an accident had taken place, or that it arose out of, and in the course, of the deceased man's employment.

Libel Action brought by a Dentist.

A most righteous verdict was given on Tuesday last by a King's Bench jury, when Mr. F. R. Moser was awarded £600 damages for libel, the defendants, Mr. George Smith, a Camberwell builder, and his wife having accused him of improper behaviour towards the female defendant while she was his patient. The accusations were obviously and utterly untruthful.

THE Princess Henry of Battenberg has consented to become a vice-patron of the Chelsea Hospital for Women.

Public Health.

REPORTS OF INSPECTORS IN THE MEDICAL DEPARTMENT OF THE LOCAL GOVERNMENT BOARD.

On an Outbreak of Enteric Fever at Oakenshaw, in the Urban District of Willington, by Dr. T. CARNWATH.—Oakenshaw is a mining village with a population of some 1280 persons, about seven miles to the south-west of the city of Durham. It is included in the urban district of Willington, in which enteric fever has been endemic for many years. Before 1909 Oakenshaw itself was relatively free from the disease, but in that year sporadic cases began to occur in the village with unusual frequency, and this continued on into 1910, finally culminating in a severe outbreak in April and May, which was practically confined to the village, and did not extend to other parts of the Willington district. Systematic application of the Widal test at the time of Dr. Carnwath's inquiry suggested that many cases of illness had occurred which were to be attributed to enteric fever infection, although for one reason or another they had not been notified. Dr. Carnwath concludes that there were altogether 74 cases, 11 of which occurred in 1909 and the remainder in 1910; of these 74 cases 7 were fatal. As many as 33 occurred in the last week of April and in the first week in May, and special attention was directed to the explanation of this striking feature of the outbreak. The latter appeared almost certainly to be due to a milk infection. The milk-supply of the village was obtained mainly from three farms, of which one farm, X, supplied 85 households, or 35·1 per cent. of the total houses in Oakenshaw. Of the 57 invaded households as many as 49 obtained milk from farm X, and there was evidence that the attack of the few persons who were customers of the other farms might be attributed to those farms having had dealings in milk with the X farm. The amount of milk delivered daily to each household was on an average from half a pint to a pint; it was generally found that the member of the family who fell ill was the one who "drank most milk," but even so the quantity consumed in the majority of cases was exceedingly small. A heavy proportional incidence of the disease on females and children gave confirmatory evidence of the infection having been milk-borne. At the farm X only two persons, mother and son, had anything to do with the handling of the milk from the time it left the udder until it was delivered to the customer, and this had been so for 12 years. No history of enteric fever could be obtained in either case, although the son had suffered from a "bad cold" with some affection of the lungs and bowels in 1908. The mother had no history of any sickness save a liability to bilious attacks. Samples of urine and fæces obtained from the son were examined by Dr. J. C. G. Ledingham at the Lister Institute for typhoid bacilli with negative results, but those obtained from the mother in August, 1910, and again in December, contained large numbers of typhoid bacilli. It may reasonably be concluded, therefore, that Mrs. X somehow caused the infection of the milk at intervals during 1909 and 1910, and did so with particular intensity in April of the latter year. The question why this infective ability was not shown, at any rate to any conspicuous extent, before 1909 did not admit of any satisfactory answer.

VITAL STATISTICS.

HEALTH OF ENGLISH TOWNS.

IN the 94 largest English towns having an estimated population of 17,559,219 persons in the middle of this year, 8603 births and 4846 deaths were registered during the week ending March 9th. The annual rate of mortality in these towns, which had steadily decreased from 21·6 to 15·4 per 1000 in the four preceding weeks, further declined to 14·4 per 1000 in the week under notice. During the first ten weeks of the current quarter the mean annual death-rate in these large towns averaged 16·7 per 1000, while in London during the same period the average death-rate did not exceed 15·9 per 1000. The annual death-rates last week in the several towns ranged from 6·0 in Hornsey, 6·3 in Enfield, 6·8 in Gillingham, 7·3 in Walthamstow, and

7·5 in Ilford, to 20·3 in Great Yarmouth, 20·7 in Oldham, 21·0 in Stockton-on-Tees, 24·2 in Salford, and 25·8 in Barrow-in-Furness.

The 4846 deaths from all causes were 348 fewer than the number in the previous week, and included 378 which were referred to the principal epidemic diseases, against 353 and 394 in the two preceding weeks. These 378 deaths from the principal epidemic diseases included 136 from whooping-cough, 101 from measles, 53 from infantile diarrhœal diseases, 49 from diphtheria, 25 from scarlet fever, and 14 from enteric fever, but not one from small-pox. The mean annual death-rate from these diseases last week was equal to 1·1 per 1000, against 1·0 and 1·2 in the two preceding weeks. The deaths attributed to whooping-cough, which had decreased from 186 to 142 in the four preceding weeks, further declined to 136 last week, and caused the highest annual death-rates of 1·7 in Southampton and in Walsall, 1·8 in Great Yarmouth, 2·4 in Barrow-in-Furness, and 2·5 in Merthyr Tydfil. The deaths referred to measles, which had increased from 69 to 109 in the three previous weeks, slightly declined to 101 last week; the highest annual death-rates from this disease were 1·3 in Swansea, 1·4 in Oldham, 1·9 in York, 2·0 in Southport, 3·6 in Warrington, and 4·3 in Salford. The fatal cases of infantile diarrhœa, which had been 58, 39, and 49 in the three preceding weeks, were 53 last week, and included 17 in London, 7 in Liverpool, 4 in Stoke-on-Trent, 4 in Sheffield, and 3 in Birmingham. The deaths attributed to diphtheria, which had increased from 43 to 53 in the three previous weeks, were 49 last week; 14 deaths were recorded in London and its suburban districts, 4 in Portsmouth, 4 in Manchester, and 3 in Leeds. The deaths referred to scarlet fever, which had been 28, 17, and 21 in the three preceding weeks, rose to 25 last week, and included 5 in London, 4 in Manchester, and 3 in Leeds. Of the 14 fatal cases of enteric fever, which were 5 less than the average in the three preceding weeks, 3 were registered in London, 2 in Manchester, and 2 in Rotherham.

The number of scarlet fever patients under treatment in the Metropolitan Asylums and in the London Fever Hospital, which had decreased from 1512 to 1392 during the four preceding weeks, had further declined to 1358 on Saturday last; 161 new cases of this disease were admitted to these hospitals during the week, against 154, 181, and 160 in the three previous weeks. These hospitals also contained on Saturday last 1113 cases of diphtheria, 478 of whooping-cough, 231 of measles, and 58 of enteric fever, but not one of small-pox. The 1152 deaths from all causes recorded in London were 76 fewer than the number in the previous week, and were equal to an annual death-rate of 13·3 per 1000. The deaths referred to diseases of the respiratory system, which had steadily declined from 545 to 295 during the four preceding weeks, further fell to 259 last week, and were 69 below the number registered in the corresponding week of last year.

Of the 4846 deaths from all causes in the 94 large towns, 169 resulted from different forms of violence, and 358 were the subject of coroners' inquests. The causes of 39, or 0·8 per cent., of the deaths registered last week were not certified either by a registered medical practitioner or by a coroner after inquest. All the causes of death were duly certified in Leeds, Bristol, West Ham, Bradford, Hull, Newcastle-on-Tyne, Nottingham, Portsmouth, and in 66 other smaller towns. The 39 uncertified causes of death last week included 9 in Liverpool, 8 in Birmingham, 3 in Preston, 2 in Salford, and 2 in South Shields.

HEALTH OF SCOTCH TOWNS.

In the 18 largest Scotch towns, having an estimated population of 2,182,400 persons in the middle of this year, 1138 births and 731 deaths were registered during the week ending March 9th. The annual rate of mortality in these towns, which had been 18·5 and 18·7 per 1000 in the two preceding weeks, declined to 17·5 per 1000 in the week under notice. During the first ten weeks of the current quarter the mean annual rate of mortality in these towns averaged 18·9 per 1000, and was 2·2 per 1000 in excess of the mean rate recorded during the same period in the 94 large English towns. The annual death-rates in the several Scotch towns last week ranged from 4·6 in Partick, 7·6 in Falkirk, and 9·0 in Clydebank, to 22·0 in Greenock, 22·5 in Kilmarnock, and 23·1 in Perth.

The 731 deaths from all causes were 53 fewer than the number in the previous week, and included 76 which were referred to the principal epidemic diseases, against 120 and 93 in the two preceding weeks. Of these 76 deaths, 39 resulted from measles, 10 from scarlet fever, 8 from whooping-cough, 8 from diphtheria, 8 from infantile diarrhœa, and 3 from enteric fever, but not one from small-pox. These 76 deaths from the principal epidemic diseases were equal to an annual death-rate of 1·8 per 1000, or 0·7 per 1000 above that recorded in the 94 large English towns. The deaths attributed to measles, which had decreased from 63 to 56 in the three preceding weeks, further declined to 39 last week, and included 21 in Glasgow, 6 in Edinburgh, 4 in Greenock, and 3 in Leith. The deaths referred to scarlet fever, which had been 2, 3, and 6 in the three preceding weeks, further rose to 10 last week, and comprised 5 in Glasgow, 3 in Greenock, and 2 in Aberdeen. The fatal cases of whooping-cough, which had been 14 18, and 16 in the three preceding weeks, fell to 8 last week, and included 3 in Glasgow and 2 in Edinburgh. The deaths referred to diphtheria, which had been 6, 22 and 9 in the three previous weeks, were 8 last week, of which number 5 occurred in Glasgow. The deaths of infants under two years of age from diarrhœal diseases numbered 8, against numbers declining from 14 to 5 in the three preceding weeks; 2 deaths were recorded in Glasgow, in Dundee, and in Paisley. The 3 fatal cases of enteric fever were registered in Glasgow.

The deaths referred to diseases of the respiratory system in the 18 towns, which had decreased from 220 to 138 in the four preceding weeks, further declined to 136 in the week under notice, and 29 deaths were attributed to different forms of violence.

HEALTH OF IRISH TOWNS.

In the 22 town districts of Ireland, having a population of 1,157,014 persons in the middle of this year, 622 births and 512 deaths were registered during the week ending March 9th. The annual rate of mortality in these towns, which had steadily declined from 31·0 to 22·1 per 1000 in the four preceding weeks, rose to 23·1 per 1000 in the week under notice. During the first ten weeks of the current quarter the mean annual death-rate in these Irish towns averaged 23·5 per 1000; in the 94 large English towns the mean annual death-rate during the same period did not exceed 16·7 per 1000, while in the 18 Scotch towns it was equal to 18·9 per 1000. The annual death-rates in the several Irish towns last week were equal to 26·9 in Dublin (against 13·3 in London), 20·3 in Belfast, 24·5 in Cork, 30·6 in Londonderry, 19·0 in Limerick, and 7·6 in Waterford; while in the 16 smallest of these Irish towns the mean annual death-rate last week was equal to 21·3 per 1000.

The 512 deaths from all causes in the 22 Irish towns were 22 in excess of the number in the previous week, and included 41 which were referred to the principal epidemic diseases, against 27 and 36 in the two preceding weeks; of these 41 deaths, 13 resulted from whooping-cough, 13 from infantile diarrhœal diseases, 5 from enteric fever, 5 from diphtheria, 4 from measles, and 1 from scarlet fever, but not one from small-pox. These 41 deaths from the principal epidemic diseases were equal to an annual death-rate of 1·8 per 1000; the death-rate last week from these diseases did not exceed 1·1 per 1000 in the 94 large English towns, while in the 18 Scotch towns it was equal to 1·8. The deaths attributed to whooping cough, which had declined from 25 to 16 in the four preceding weeks, further fell to 13 last week, and included 11 in Belfast. The deaths of infants under two years of age from diarrhœal diseases, which had been 5 and 9 in the two previous weeks, further rose to 13 last week; 6 deaths were registered in Dublin and 4 in Belfast. The 5 fatal cases of enteric fever were in excess of recent weekly numbers, and comprised 2 in Dublin, 2 in Belfast, and 1 in Limerick. The 5 deaths referred to diphtheria were 3 in excess of the average in the three preceding weeks, and included 3 deaths in Dublin. The 4 deaths from measles were recorded in Dublin, and that from scarlet fever in Belfast.

The deaths referred to diseases of the respiratory system, which had steadily declined from 239 to 135 in the four preceding weeks, were again 135 last week. Of the 512

deaths from all causes in the 22 Irish towns, 149, or 29 per cent., occurred in public institutions, and 11 resulted from different forms of violence. The causes of 32, or 6·3 per cent., of the total deaths were not certified either by a registered medical practitioner or by a coroner after inquest; in the 94 large English towns the proportion of uncertified causes of death in the week under notice did not exceed 0·8 per cent.

THE SERVICES.

ROYAL NAVY MEDICAL SERVICE.

THE following appointments have been notified:—Staff Surgeons: A. McCloy to the *Research*, and J. R. A. Clark-Hall to the *Triton*. Surgeons: E. Moxon-Browne to the *Hearty;* D. A. Mitchell to the *Dido* and to the *Alert*, on recommissioning; and J. H. Wright to the *Terrible*, temporary.

ROYAL ARMY MEDICAL CORPS.

Lieutenant Edward S. Calthrop resigns his commission (dated March 9th, 1912).

Surgeon-General G. D. Bourke, C.B., K.H.P., has been appointed on the directing staff of the Irish Command Staff tour to be held from March 25th to the 28th.

Colonel L. E. Anderson has been granted 2½ months combined leave of absence. Colonel H. J. Barratt has taken up duty as Principal Medical Officer of the Allahabad Brigade.

Lieutenant-Colonel S. C. Philson has been selected for the increased rate of pay under Article 317 of the Royal Warrant. Lieutenant-Colonel C. H. Melville has been selected for promotion to the rank of Brevet-Colonel. Lieutenant-Colonel A. L. F. Bate, on return from India, has been posted to the Western Command. Lieutenant-Colonel J. V. Savage has been transferred from Muttra to the station hospital at Secunderabad.

Major J. Cowan, from Woolwich, has embarked for a tour of service in India. Major F. G. Richards has taken up duty in the Cork District. Major P. MacKessack has joined ths Eastern Command headquarters as Specialist Sanitary Officer, vice Major C. H. Stratton, who has embarked for service abroad. Major R. S. H. Fuhr, D.S.O., and Major W. E. Hardy have been permitted by the Director-General to exchange places on the foreign service roster. Major L. Wood has been appointed to the Fourth (Quetta) Division. Major C. W. Reilly has been ordered to join the Irish Command on March 21st and will be posted to the Cork District. Major C. Dalton and Major D. J. Collins have been detailed for duty in connexion with the Irish Command Staff Tour. Major G. S. McLoughlin, D.S.O., has taken up duty at Winchester. Major M. Swabey has been transferred from Wellington to St. Thomas's Mount, Madras.

Captain C. G. Browne has been granted six months' general leave of absence home from India. Captain T. S. Blackwell has been directed to join for duty in the Irish Command on March 21st and will be posted to the Belfast District. Captain G. Baillie has embarked for a tour of service on the West Coast of Africa. Captain M. Keane has been appointed to the Eastern Command. Captain W. R. Galwey has been appointed Specialist Sanitary Officer to the Ninth (Secunderabad) Division, in succession to Major R. W. Clements. The following transfers have been made in India: Captain J. B. Hanafin from the Second (Rawal Pindi) Division to the First (Peshawar) Division; Captain C. D. Caddell from the Fifth (Mhow) Division to Aden; Captain T. S. Eves from the Seventh (Meerut) Division to the Eighth (Lucknow) Division; and Captain D. Coutts from the Eighth (Lucknow) Division to the Seventh (Meerut) Division. Captain A. Dawson has been selected for appointment to hold charge of the Brigade Research Laboratory at Aden. Captain A. H. Bond has been granted six months' general leave of absence home from India. Captain L. L. G. Thorpe has been transferred from the Royal Victoria Hospital, Netley, to Golden Hill. Captain V. T. Carruthers has been posted to the Cork District. Captain C. P. O'Brien Butler has been transferred from Poona to Purandhar. Captain C. T. Edmunds has joined the station hospital, Peshawar, for duty. Captain W. E. C. Lunn has been granted six months' general leave of absence home from India from March 12th. Captain G. A. K. H. Reed has been appointed Company Officer at the Royal Army Medical Corps Depôt, Aldershot. Captain P. C. Douglass, from Weedon, and Captain H. A. Bransbury, from Woolwich, have embarked for a tour of service in India. Captain M. W. Falkener has joined for duty in Bermuda. Captain F. C. Sampson has been transferred to the home establishment from South Africa. Captain W. J. E. Bell has arrived home on duty from Hong-Kong.

INDIAN MEDICAL SERVICE.

Lieutenant-Colonel J. Chaytor White has been granted an extension of three months' leave on medical certificate. Lieutenant-Colonel A. W. Dawson has been appointed to hold Civil Medical Charge at Roorkee. The services of Lieutenant-Colonel A. O. Evans, civil surgeon of Maymyo, Burma, have been placed at the disposal of the Government of India in the Home Department.

Major E. J. O'Meara has been appointed a Civil Surgeon at Agra. Major C. Milne, from Jhansi, has been transferred as Civil Surgeon at Mussooree in succession to Major G. T. Birdwood appointed as a temporary measure to Agra. Major Leonard Rogers, C.I.E., has been appointed a Member of the Committee of Management of the Royal Zoological Gardens at Calcutta. Major C. B. Prall, Bengal Presidency, has arrived home from India. Major R. W. Anthony has been appointed Civil Surgeon at Dharwar. Lieutenant R. I. Binning has taken over Medical Charge at Ahmedabad. Major E. S. Peck has assumed charge of the office of Civil Surgeon at Jullundur, relieving Captain H. C. Keates, transferred. Major J. W. D. Megaw, officiating professor of pathology at the Medical College, Calcutta, has been granted privilege leave, combined with furlough, for 15 months.

The services of Captain J. H. Horne have been placed at the disposal of the Government of India for special duty in connexion with the prevention of malarial fevers in Madras Presidency. Captain H. W. Illius, on return from leave, has been appointed Civil Surgeon at Jhansi. Captain I. M. Macrae, officiating superintendent of the Central Prison at Lucknow, has been confirmed in that appointment. Captain W. Gillitt has arrived home on leave of absence from India. Captain R. T. Wells has taken up duty as Superintendent of the District Jail at Dera Ghazi Khan. Captain D. S. Patton has been appointed to officiate as Director of the King Institute at Guindy. Captain F. V. O. Beit has been appointed to the Civil Medical Charge of the Shwebo District, in place of Captain W. Egan, R.A.M.C. Captain M. L. Puri has passed the lower standard examination in the Baluchi language. Captain M. Corry has been appointed Superintendent of the District Jail at Multan, in succession to Captain W. W. Jeudwine. Captain P. S. Mills, plague medical officer at Delhi, has been transferred to Hoshiarpur. Captain H. C. Buckley, plague medical officer at Rohtak, has been transferred to Sialkot. Captain A. J. H. Russell has been granted an extension of five months of his leave of absence on the recommendation of a medical board. Captain M. MacKelvie, officiating civil surgeon at Darbhanga, has been granted privilege leave combined with furlough for one year. Captain E. C. C. Maunsell has joined the Madras Civil Medical Department. Captain H. E. S. Leathes has been appointed to act as personal assistant to the Surgeon-General with the Government of Bombay during the absence on deputation of Captain J. L. Lunham. Captain R. D. MacGregor has received six months' extension of his leave on medical certificate.

ROYAL NAVAL VOLUNTEER RESERVE.

Surgeon Arthur Robertson Brailey to be Staff-Surgeon (dated Nov. 7th, 1911).

SPECIAL RESERVE OF OFFICERS.

Royal Army Medical Corps.

Lieutenant George H. Usmar to be Captain (dated Feb. 24th, 1912). Lieutenant Harry D. Rollinson is confirmed in his rank.

DEATHS IN THE SERVICES.

Colonel Francis Joseph Lambkin, R.A.M.C., at Bloemfontein, on March 8th, aged 54. He entered the army in 1881, and after serving in India and the West Indies was appointed senior medical officer to Lord Dundonald's brigade during the South African war of 1899–1902. He was present at the relief of Ladysmith and at the action at Colenso, at Spion Kop, and other operations, and in the Orange Free

State and Cape Colony (Queen's medal with five clasps and King's medal with two clasps). He was employed as syphilologist on the headquarter staff of India in 1905, and later became lecturer on syphilology at the Army Medical College in London. In 1907 he went on a special mission to Uganda to inquire into the ravages of syphilis there, and in the following year read his well-known paper on the treatment of syphilis by soamin at the meeting of the British Medical Association at Sheffield.

Owing to insufficient time to fully attend to his duties Sir Frederick Treves has retired from the Army Medical Advisory Board and the Nursing Board of Queen Alexandra's Imperial Military Nursing Service, on both of which he has served since their foundation 11 years ago. He has also signified his intention of resigning the chairmanship of the Executive Committee of the British Red Cross Society.

Correspondence.

"Audi alteram partem."

THE VALUE OF PNEUMOCOCCUS VACCINE IN THE TREATMENT OF PNEUMONIA.

To the Editor of THE LANCET.

SIR,—I have been interested in reading Dr. Nathan Raw's article in THE LANCET of March 9th on the above subject, which is a record of experience still much needed on the use of vaccines in pneumonia. I do not share with Dr. Nathan Raw the regret that an auto-vaccine is not always readily obtainable in early pneumonia. In the first place we may be sure in most cases of pneumonia, even in the influenzal and "typho-pneumonia" cases, that the pneumococcus is the predominant poison-organism present, shall I say the organism of first instance, in the pathology of the disease, and a good stock culture is therefore quite acceptable if required. In the second place, I am doubtful of the value of the vaccine in the first days of the disease when the resistance is overwhelmed by the toxic venom of the first onslaught. Thirdly, although it is true that a vaccine can be obtained within a few hours from exudation directly removed by puncture of the hepatised lung, yet these early punctures can only be obtained at considerable hazard, unless the consolidation has advanced to the surface of the lung with great rapidity. In the first days of really desperate cases I am inclined to think, from an experience, however, of one case only, that a serum—Pane's or Merck's—administered with bactericidal intent may be more valuable than a vaccine. At present I advise the vaccine to be held ready for use nearer the crisis, perhaps about the fourth or sixth day, in those cases in which the pneumonia still shows signs of spreading or involving separate parts of the same, or attacking the other lung. For this purpose a vaccine obtained with due care from the sputum of the first days of the disease has the advantage of securing the coöperation of any complicating organisms that may be present. The disadvantage is the very considerable expense often involved in obtaining an autogenous vaccine. An estimate of the organisms present may, however, be made without proceeding to make a vaccine from them, as a guide to the selection of a stock vaccine.

I cannot say that Dr. Nathan Raw's figures show much in favour of the value of vaccines in acute pneumonia. The mortality in his cases, which included 66 cases below the age of 20 and only 4 above that of 60, was a little over 16 per cent., whereas I take the average death-rate of pneumonia, taking all cases, to be about 17 per cent.; and excluding the intemperate, the mentally afflicted, and those over 65 the mortality is 12·5. I do think, however, that vaccines are of value in some cases and at those periods of the disease which I have specified, and it is desirable for them to be in readiness for use in such cases. It is in cases in which there is a tendency for the crisis to be postponed, and in those many cases in which the crisis is followed by a lingering remittent pyrexia, not due to any purulent collection, that vaccines are of undoubted value.

There is one more point on which I should like to enter a *caveat*—viz, the initial dose of vaccine. A 15 or 20 million dose is a more prudent one to begin with, which can be liberally advanced if necessary with close observation of pulse and temperature. I have recently seen a decided reaction with rigor and temperature rising to 105° from even so moderate a dose as 20 millions.

I am, Sir, yours faithfully,

Portland-place, W., March 11th, 1912. R. DOUGLAS POWELL.

THE NATIONAL INSURANCE ACT AND THE HOSPITALS.

To the Editor of THE LANCET.

SIR,—The position of the London hospitals in reference to the admission of patients when the medical benefits of the Insurance Act come into operation is one which is being, or will shortly be, considered by the governing bodies of the hospitals. Presumably they will desire and be entitled to ask for the opinions and advice of their medical staffs on the subject, and seeing the importance of the issues involved it is to be hoped that the members of the honorary staffs will take measures that their advice may be very carefully considered before being given and that they should endeavour to come to some agreement as to what is desirable. I trust, therefore, you will allow me to submit in your columns some of the points which at no distant date will have to be decided upon.

Although the National Insurance Act gives power to the Commissioners to give grants to hospitals, the Chancellor has stated, "It is not proposed to make provisions for institutional treatment," and for a time, at any rate, there will be no provision under the Act for any kind of treatment for persons under 16, nor for emergencies, nor for women, except a very uncertain number, nor will there be any provision for indoor institutional treatment (except for tuberculosis) for any persons whatever, and the amount and duration of "medical benefits" for "deposit contributors" will be very limited. There is, therefore, no reason why the voluntary hospitals should not continue to receive any of the persons or ailments coming under these categories. But under the Act the whole of the male working-class population over 16 years of age, whatever the amount of their earnings, and a large number of other persons, not manual workers, whatever their incomes, will be insured for treatment for such diseases and injuries as do not require *indoor* institutional treatment.

The voluntary hospitals are established and supported for the benefit of persons who are unable to pay for treatment. The insured persons will not only be able to pay, but will have already paid for, and be able to obtain elsewhere, the outdoor treatment they require, and it would be inconsistent for the voluntary hospitals to supply treatment and medicines to such persons who are not in need of them, while declaring that the effects of the Insurance Act will so reduce the support they receive from the public as to force them to close down beds to the exclusion of patients who require the treatment for which they are not insured.

Again, honorary medical officers should not be expected to give their services to persons who have no claim to gratuitous treatment and whom other doctors have received payment to attend. It may be pointed out that some of these persons will be in affluent circumstances, for though the Act empowers the Commissioners to exclude such persons from unlimited "medical benefits" they will be compelled in such cases to hand over to them the estimated money value of their medical benefits. It is therefore suggested that as soon as the medical benefits come into force hospitals should not accept for out-patient treatment persons who, by their insurance, are entitled to receive such treatment elsewhere. The proposal would not involve any departure from the principles on which the voluntary hospitals have always been conducted—viz, the restriction of their treatment to persons who are not able to afford to pay for it. It would involve that the hospitals should recognise that under the Act a large number of persons now qualified to receive outdoor treatment will under the Act cease to have such claim, being entitled to, and able to, receive the treatment they require elsewhere. No alteration in hospital regulations would be required, but only that the present regulations should be acted upon.

The Chancellor in his speech to a deputation of hospital representatives on July 25th, 1911, pointed out that this was the course the hospitals ought to adopt. He said: "The

hospitals should ask, 'Are you insured?' He says 'Yes'; he has no right to come to hospitals." Among the insured persons there will occur cases of doubt or of difficulty in which special advice may be advisable, and it is suggested that such insured persons shall be accepted as out-patients if sent by a medical man for consultative purposes. It may be pointed out that the "deposit contributors" will not be excluded by the proposal above made whenever their medical benefits under the Act lapse or expire. If the proposal here made is adopted by the hospitals, no hardship would occur. No persons would be excluded from hospital relief except from that form of treatment to which they are entitled and able to get free elsewhere. The present overcrowding of hospital out-patient rooms by a large number of comparatively trivial cases would be to the same extent relieved, greatly to the advantages of the patients with more serious ailments, and it is believed there would still be ample material and much better opportunities for clinical teaching.

A saving would be effected in the out-patients' department and the hospitals would continue to receive only persons unable to pay for the treatment they require. They would not be in the danger they are in at present of losing support from the public, who naturally demur at subscribing towards the treatment of persons for whose treatment they have already been taxed. The suggested restriction might at present be limited to males; to exclude insured females would exclude the large class of domestic servants and others, and this would require further consideration. The question as to asking or receiving subventions from Insurance Committees might also be left open, and it would not affect the present proposals.

I am, Sir, yours faithfully,

London, W., March 8th, 1912. SIDNEY PHILLIPS.

DOES CANCER OCCUR IN VEGETABLES?

To the Editor of THE LANCET.

SIR,—In common, I doubt not, with most students of the cancerous process, I have been much interested in speculations as to whether anything of that nature can be produced in vegetable tissues. It is obvious from the beginning that definitions are absolutely necessary in order that we should understand the subject which we discuss; and I would venture boldly to define what we mean by cancerous action to be some influence which promotes, in the first place, a reproduction of tissues, which more or less resemble those natural to the part affected, and secondarily their more or less rapid death. By some such definition we can distinguish between cancer and most forms of chronic inflammation. I have recently been working upon what is called amongst gardeners and foresters the "canker" of trees, &c. It is known to be produced in different trees by different causes. Thus we have the canker in the apples known often as the American blight, canker of the larch known as the larch disease, and canker as it occurs in the oak and many other trees by no special name. In many of these special causes such as the attacks of named parasites, &c., are well recognised. I have, however, been much impressed by the features of similarity which they possess to one another and to cancer, as it occurs in animal tissues.

My object in addressing this letter to you is not, however, to record any new observations of my own, but to ask the attention of your readers to some remarkable and very valuable contributions to our knowledge which have recently been recorded in America under the name of "The Crown-Gall of Plants: its Cause and Remedy."[1] I have read no paper recently which has caused me to regret more definitely that the New Sydenham Society has ceased its labours, for it is one which ought to be promptly reprinted. If I were to record all my own conclusions I should have to mention as mere guesses much that has now been anticipated and established on carefully collected evidence in this "Bulletin." I must not trespass on your pages with any attempt to summarise its conclusions, but must recommend your readers to procure it and to study it carefully. I had come to the conclusion that between canker in vegetables and cancer in animal tissues there was no really fundamental distinction. The paper to which I refer traces what we know as canker to a polymorphic bacterium, the B. tumefaciens. I regret that the condition has received the misleading, or at any rate not instructive, name of Crown-Gall. The growths to which it refers are very common, and abundant opportunities for investigating them will be afforded to us all during the advancing spring. I may probably be able before long to record some facts in detail respecting them, and make some criticisms, and they have no doubt already attracted the attention of some of our British botanists.—I am, Sir, yours faithfully,

Haslemere, Surrey, March 9th, 1912. JONATHAN HUTCHINSON.

[1] The Crown-Gall of Plants: its Cause and Remedy. By E. F. Smith, N. A. Brown, and C. O. Townsend. Washington: Government Printing Office. 1911. A reference may also be made to a most interesting paper on Bacterial Diseases of Plants communicated by Professor M. C. Potter, Sc.D., M.A., to the Journal of Agricultural Science, January, 1912. Mr. Potter quotes freely from Dr. Smith's paper, but contributes valuable material of his own.

THE INTESTINAL FLORA.

To the Editor of THE LANCET.

SIR,—I was much interested by Dr. Distaso's article on the Intestinal Flora, and not less interested in Dr. Edwin Goodall's criticism.[1] My observations in regard to the bacteriology of the intestinal contents have been chiefly concerned with the conditions found in infants and children. At the Infants Hospital, where some 50 babies are constantly under treatment, a bacteriological examination of the intestinal dejecta is made in every case, and in many cases repeated examinations are made. It appears to me that among infants and children there can be no doubt as to the profound pathological influence exercised in certain circumstances by that group of organisms generally known as the colon group. We have gradually arrived at methods of bacteriological diagnosis which permit of the conditions being precisely appreciated and appropriately treated. In cases of "colon toxæmia" pure cultures which have a powerful influence in rendering the intestinal conditions inimical to the growth or action of the colon organisms are systematically administered. The power of the cultures and their beneficial influence have been demonstrated on many occasions, notably in cases where relapses have followed the suspension of the cultures, while rapid improvement has ensued as a result of their renewed administration. At the present time more than one-half of the infants in the hospital are being treated by pure cultures, the nature and dose of the culture varying according to the organisms attacking the infant and their degree of virulence. In all cases of "enteritis" and allied conditions the importance of arriving at a bacteriological diagnosis is, in my opinion, paramount. I may cite two cases out of many in illustration.

I saw a child, aged 6 years, suffering from acute colitis, at Taunton in consultation with Dr. L. H. C. Birkbeck. The whole of the colon was acutely tender; there was marked hæmorrhage from the large intestine, the blood being bright red and mingled with mucus. The condition was found to be due to the bacillus enteritidis sporogenes. A pure culture of the streptococcus lacticus in an extremely active condition was prepared (the particular strain of this organism employed being the one known in the Infants Hospital Research Laboratory as "No. 52"). Within three days of the first administration all the acute symptoms had ceased, and in a week the child was convalescent. He made a rapid and uninterrupted recovery.

A child, aged 12 months, suffering from severe intestinal toxæmia, was seen by me at Westgate-on-Sea in consultation with Dr. Heaton. The child could not take milk in any form without the gravest intestinal disturbance, and his condition had given rise to much anxiety. In this instance we had to deal with a virulent colon bacillus. The power of the organism was such that it curdled milk (at 38° C.) in five hours with the production of much gas, while in other respects it gave marked evidence of its virulence. To effectively combat the powerful organisms attacking the infant a culture containing several organisms was prepared. This case required careful watching owing to the power of the antagonistic cultures and the necessity of avoiding a too sudden or too great revolution in the intestinal conditions. The result was most satisfactory. The child made a rapid and striking recovery; it was out of danger in a week, and in another week was well able to digest a fairly rich milk mixture.

In both these cases I am satisfied that but for the bacteriological diagnosis and consequent treatment the patients

[1] THE LANCET, Feb. 24th, 1912, p. 496; March 9th, p. 684.

would have done very badly. It was not possible for either of these children to have recovered without, at the best, a prolonged illness, had they not received the immediate and powerful assistance of cultures specially prepared to attack the organisms attacking them.

I would, however, strongly emphasise two points. 1. Each case must be studied on its merits; to treat cases of intestinal toxæmia with stock cultures is worse than useless. It is as dangerous as the proper treatment is beneficial. 2. The administration of the cultures must be adjusted as to dosage, according to the precise requirements of the cases; while as soon as the indications are met the administration should be suspended. As a rule it is better that the suspension should be gradual rather than complete and sudden.

The dosage is the question which is most difficult at the present time. It is therefore necessary to proceed with caution, as up to the present our information in regard to the indications for dosage is very inadequate. In all cases the dietetic treatment is of great importance. The diet commonly provided for infants and young children frequently acts as a direct encouragement of the pathogenic organisms. Some articles of diet act so powerfully in this direction that their administration may go far to neutralise the action of the cultures. I am, Sir, yours faithfully,

Harley-street, W., March 9th, 1912. RALPH VINCENT.

THE CAUSATION AND PREVENTION OF TOXIC SYMPTOMS FOLLOWING THE ADMINISTRATION OF SALVARSAN.

To the Editor of THE LANCET.

SIR,—I have read with interest the paper by Dr. J. McIntosh, Dr. P. Fildes, and Mr. H. Dearden, appearing in THE LANCET of March 9th. I note that their conclusions confirm those obtained by Major T. W. Gibbard, Major Harrison, and Lieutenant Cane, of the Royal Army Medical Corps, published in the *Journal of the Royal Army Medical Corps* for January, 1912. These officers reported that the preparation of the salt solution on the morning of the injection was the most important consideration, and had the greatest effect in reducing the severity of the reaction, and that this was still further enhanced by the fresh distillation of the water, but that the use of chemically pure sodium chloride had no advantage over common salt.

It has always been my custom to prepare and autoclave the salt solution immediately before use. It is made with distilled water, which for the last year I have filtered immediately before the salt is added. The water has only been distilled once a week, and is kept in a large glass jar, from which it is drawn off as required. I have had very few occurrences of toxic symptoms, except in cases of florid secondary syphilis, and out of close on 200 injections I have not recorded rigors in certainly more than ten, vomiting has been only very occasional, and the temperature is rarely raised above 100° F.

For the last two months, in view of the opinion of many trustworthy authorities, I have used only freshly distilled water for the preparation of the saline solution. The result is practically the same, and I have obtained a marked reaction only in cases of florid secondary syphilis. My experience leads me to the conclusion that Schreiber's theory for the occurrence of reaction (viz., the liberation of endotoxins from killed spirochætæ) is true for the great majority of cases. It appears to me that the incidence of mortality as the result of treatment with salvarsan is so small that it is probably due to some rare accident rather than idiosyncrasy in the way of intolerance to the drug. I have on one occasion had to throw away a tube of salvarsan which was cracked and the vacuum destroyed, and the contents of which, therefore, were doubtless partially or completely decomposed and highly toxic. It has occurred to me that some of the reported fatal cases may have been caused by the injection, not of salvarsan, practically non-toxic in present dosage, but of a toxic substance resulting from a crack or fault in the glass ampoule. I give, as a rule, two injections of 0·6 grm. of salvarsan intravenously, with an interval of only 48 hours, and yet have at present met no symptoms of toxicity that can be definitely traced to the drug.

I filtered the distilled water originally not with any idea of getting rid of any bacteria which might be present, but because of the possibility that foreign material might have found its way into the distilled water. I imagined that, as the saline was autoclaved prior to use any bacteria present and toxins produced by them would be destroyed by the process and rendered harmless, and it was for purely mechanical reasons that I filtered the distilled water prior to adding the salt and autoclaving the solution. As it appears to be the dead bodies of the organisms rather than the toxins which they produce which cause the symptoms of toxicity, it would seem that if the distilled water were passed through a filter sufficiently fine to prevent the passage of micro-organisms, this would meet the case and a fresh distillation each day would be unnecessary.

I am, Sir, yours faithfully,

HUGH WANSEY BAYLY,
Pathologist to the London Lock Hospitals, &c.
Upper Berkeley-street, W., March 10th, 1912.

To the Editor of THE LANCET.

SIR,—In THE LANCET of March 9th, pp. 637–640, appears a paper on the causation of the toxic symptoms that may follow the use of salvarsan. This paper is in the main a *résumé* of various theories that we have recently shown to be unsupported by sound evidence. We ask you, therefore, kindly to publish the following statement.

In July, 1911, Wechselmann advanced the theory that salvarsan fever is necessarily due to gross infection of the saline demonstrable at the time of injection. He stated that the accident of fever can be avoided by using solutions made with freshly distilled water, and the truth of this statement he fully proved in 150 cases. His theory, however, of the cause of salvarsan fever was not sound, because, as we showed in December last, fever often follows the injection of water or saline that contain practically no organisms. We showed, on the contrary, that water fever, salt fever, and, in consequence, salvarsan fever, are often due to contamination of the water by a heat-stable filtrable body that bears no relation to the degree of infection capable of demonstration at the time of injection. Salt fever and salvarsan fever are often, as we showed, nothing more or less in fact than water fever. This one of us had already pointed out six months previously at Birmingham, though we did not then know the true cause of water fever to be the heat-stable body we have since described. In January of this year, however, Dr. McIntosh and his colleagues resuscitated Wechselmann's theory to which they had already subscribed four months after its appearance as a result of independent work. In the interval they had found that gross infection of their reagents was demonstrable before the addition of salt instead of afterwards. Hence the theory was modified to this extent. A fortnight ago, at a meeting of the Pathological Section of the Royal Society of Medicine,[1] we again proved to demonstration that neither Wechselmann's theory nor its adaptation by the workers at the London Hospital is sufficient to explain either salt fever or salvarsan fever, and we showed that no adequate controls had been carried out by any of these four observers. We pointed out that the theory rested solely on the assumption that unbroken protein, and suspensions of organisms derived from the air and then grown on water or saline, are necessarily capable of producing fever after single injections. And we gave full and precise technical details of numerous experiments which clearly showed that this assumption can no longer be justified. We also illustrated our points by the exhibition of 13 charts. Dr. McIntosh was actually present during our communication, and took part in the discussion that followed. He then confessed that he had not carried out the control experiments we had shown to be essential. We therefore do not understand him when he says, in referring to our work, that he "awaits the publication of precise technical details." The experiments he now gives in THE LANCET in support of Wechselmann's theory are in no sense control experiments, as we pointed out in the discussion referred to. The practical object of our communication was to show that demonstration of the sterility of any given solution is no guarantee that it does not contain the toxic colloid

[1] THE LANCET, March 2nd, 1912, p. 579.

we described. The frequent part played by this body in producing symptoms of toxæmia after injection of sterile water or saline is an indisputable fact that can be verified at will.

We are, Sir, yours faithfully,

E. C. HORT.
W. J. PENFOLD.

Harley-street, W., March 12th, 1912.

THE SIGNIFICANCE OF THE SYMPTOMS IN CASES OF DUODENAL ULCER.

To the Editor of THE LANCET.

SIR,—Dr. Saundby's criticism of my article in your issue of to-day consists of some uninteresting remarks about myself, to which I shall make no further reference; of a statement in which, as he himself suggests, he misrepresents what I said, quoting a passage to which I did not specially refer; and, lastly, of some experiences of his own which confirm in many particulars what I actually did say.

Dr. Saundby's retort that "it is as unscientific to assume that a thing does exist until it has been seen" sounds clever, but will not stand a moment's investigation. There are many things the existence of which has not only been assumed but proved without their ever having been seen at all.

I am, Sir, yours faithfully,

C. MANSELL MOULLIN.

Wimpole-street, W., March 9th, 1912.

FUNGI FOUND IN TROPICAL BRONCHOMYCOSIS.

To the Editor of THE LANCET

SIR,—Dr. R. Craik, in his letter to THE LANCET of Jan. 13th, applies some courteous criticisms to me for having stated that endomyces albicans liquefies gelatin, and also for having created—in his opinion—some superfluous species; he suggests that endomyces pinoyi and saccharomyces krusei are one and the same organism. As regards the action of endomyces on gelatine it must be noted that some authors (Hewlett, &c.) state that the organism liquefies the medium, others affirm the reverse. The discrepancy is most probably due to the fact that the various observers were dealing with different species. The term endomyces albicans has probably been used to cover a number of species in the same manner that the term B. coli has for years been applied to numbers of different intestinal bacteria when only a few fermentation tests were carried out.

From the reactions given in the table Dr. Craik is justified in suggesting that endomyces pinoyi and saccharomyces krusei are the same organism, as endomyces pinoyi is given in the table as not fermenting maltose. This is a mistake which I much regret crept in in my manuscript in tabulating the results. As a matter of fact endomyces pinoyi always produces acid and gas in maltose, while saccharomyces krusei never ferments this sugar: the two organisms, therefore, cannot be identical.

I am, Sir, yours faithfully,

A. C. E CASTELLANI, M.D. Florence.

Clinic for Tropical Diseases, Colombo, Ceylon, Feb. 10th, 1912.

THE LATE DR. W. R. HUGGARD.

To the Editor of THE LANCET.

SIR,—We desire to give effect to the widely expressed wish that a suitable memorial should be raised to the late Dr. Huggard. The object we have in view is twofold—firstly, to place in the Queen Alexandra Sanatorium (an institution which largely owes its existence to his self-sacrificing philanthropy) a memorial tablet, if possible with a medallion portrait of Dr. Huggard; and secondly, to create a Huggard Benevolent Fund in aid of British invalids at Davos who are in need.

We believe that it is not generally realised how many of the patients who go there fail in their pursuit of health through lack of means. The proposed fund will be invested in the names of trustees, and the income spent under the management of a carefully appointed local committee. It would be administered in close connexion with the institution known as the English Nurses' Home, with which it may, if events prove it to be expedient, be afterwards incorporated and united.

We are confident that a memorial on these lines is not only the most fitting tribute that can be paid to the memory of one who lived so much for others, but it is that which would have given the greatest satisfaction to Dr. Huggard himself.

Subscriptions should be sent to Mr. Edward C. Simmons, 74, Cheapside, E.C., or to the London Joint Stock Bank, 120, High Holborn, W.C., crossed "Huggard Memorial Account."

We are, Sir, yours faithfully,

BALFOUR OF BURLEIGH.
HENRY ANGST (British Consul-General, Zürich).
ARNOLD F. BILL.
J MITCHELL BRUCE.
W. J SCUDAMORE EMERY.
B. HUDSON (British Consul, Davos).
GERALD F. MCGAREL HOGG.
ROBERT W. PERKS.
R. DOUGLAS POWELL.
EDWARD C. SIMMONS.
D. A. F. VESEY.
E. S. WOODS (English Chaplain, Davos).
H. C. WRINCH.

Cheapside, E.C., March 5th, 1912.

THE RECENT OUTBREAK OF POLIOMYELITIS AT STOKE RIVERS.

To the Editor of THE LANCET.

SIR,—Mr. G. Adkins in his letter on March 2nd concerning the recent outbreak of poliomyelitis at Stoke Rivers criticises the statement made in your issue of Feb. 17th, "that among the whole 36 cases there is not a single case of definite poliomyelitis." Mr. Adkins refers to Dr. Reece's paper in the Epidemiological Section of the Royal Society of Medicine for further details. On reference to this other paper I find the statement: "In this community of 119 persons there were 36 attacks of poliomyelitis which were more or less definite, although *only three developed paralysis*, two suffered from facial paralysis, and one, a lad aged 17, remains paralysed in both legs. In addition to the 36 there are nine others who may possibly have suffered in a minor degree." This does not furnish much additional information.

Your article said, "Before accepting this epidemic as one of poliomyelitis far more proof would be required." Possibly Mr. Adkins has this proof, and if so it would be extremely interesting if he would furnish a complete account of the Stoke Rivers epidemic, with a note on the present condition of the patients remaining paralysed.

It is unfortunately not possible to carry out the serum test for poliomyelitis on these patients owing to the absence of experimental animals in this country, though this might be done in France, Germany, or Austria. Such a test would at once decide if the cases above referred to were due to the virus of poliomyelitis.

I am, Sir, yours faithfully,

M.D.

March 4th, 1912.

NATIONAL IDEALS.

To the Editor of THE LANCET.

SIR,—In your review of "New Tracts for the Times" last week you refer to Dr. Horton's discussion of National Ideals. For the main purport of this theme, has at any time the relation of the nation to the Empire been better expressed than by Claudian, in those wonderful lines where he deals with the relation of Rome to her Empire?

> Haec est, in gremium victos quae sola recepit,
> Humanumque genus communi nomine fovit,
> Matris, non dominae ritu; civesque vocavit
> Quos domuit, nexuque pio longinqua revinxit.

"This is she who alone took the vanquished to her bosom and cherished all mankind by one common name, ruling them as mother, not as mistress, who named those whom she conquered citizens, and bound them to her for ever in the bond of righteousness." This, be it remembered, was written by one of the conquered.—I am, Sir, yours faithfully,

OXONIENSIS.

March 11th, 1912.

THE POPLAR MEDICAL UNION.—Dr. C. K. Toland, the secretary of this union, has informed the members by circular that a voluntary committee, not wholly medical, has agreed to provide medical treatment for school children in Poplar under the London County Council scheme, a course that is in opposition to a scheme drawn up by the joint committee of the Metropolitan Division of the British Medical Association. Dr. Toland's circular appeals to the members not to accept service under the voluntary committee.

BRISTOL AND THE WESTERN COUNTIES.

(FROM OUR OWN CORRESPONDENTS.)

The Royal Hospital for Sick Children and Women, Bristol.

THE annual meeting of the subscribers of this institution was held on March 4th under the presidency of the Lord Mayor. The medical report stated that during 1911 the out-patients numbered 4656, and 77 women and 730 children had been admitted as in-patients, an increase compared with 1910. The financial statement showed that the income amounted to £4683, and that the expenditure was £5205. The committee in its report alludes with regret to the death of Dr. John Beddoe, who had been connected with the hospital since 1866, and adds "that the committee was always proud of the connexion between the hospital and one who had made a world-wide reputation."

The Exeter Education Committee.

The school hygiene subcommittee has recommended the Exeter education committee to appoint a surgeon-dentist at a salary of £250 per annum to treat the teeth of school children, and suggested that premises and equipment for his use should be provided at an expenditure of about £60. It further recommended that about £100 should be expended on the treatment of ringworm. At the meeting of the committee held on Feb. 28th it was decided, after some discussion, to adopt the proposal of the subcommittee.

King Edward VII. Memorial Dispensary, Plymouth.

The first annual meeting of the subscribers of the Didworthy Tuberculosis Dispensary, Plymouth, was held last week, under the presidency of Dr. R. Hogarth Clay. The medical report stated that during the year 320 patients had been treated. The medical officer (Dr. C. D. Lindsey) stated "that he had given tuberculin in a small number of cases, and while he was not able to point to any great success so far, he was sure benefit had resulted in a certain number of cases." The financial statement was unsatisfactory, and Mr. Cecil Wills, who presented the figures, said that unless more subscriptions were received the dispensary would have to be closed. It was decided that in future the institution should be called the "King Edward VII. Memorial Dispensary."

The Royal Cornwall Infirmary, Truro.

The late Mr. T. L. Dorrington, of Truro, has bequeathed about £6500 to the Royal Cornwall Infirmary, for the establishment and maintenance of a convalescent home for females at Perranporth. The institution is to be called "The Dorrington Home," and is to be worked on similar lines as the Passmore Edwards Convalescent Home for Men at Perranporth, which is also in connexion with the Royal Cornwall Infirmary.

March 12th.

SCOTLAND.

(FROM OUR OWN CORRESPONDENTS.)

Morison Lectures: Royal College of Physicians, Edinburgh.

THESE lectures were delivered in the hall of the Royal College of Physicians on Feb. 26th and 26th and March 1st. The lecturer this year was Dr. J. J. Graham Brown, who had selected for his theme "Certain Aspects of Aphasia." The subject was dealt with in great detail, and yet most lucidly and interestingly. There was a good and appreciative audience at each of the lectures. The lectures are to be published, and will prove a valuable contribution to the literature of the subject dealt with, for they will be found to bring much scattered knowledge together, carefully sifted, analysed, and arranged, and suitable for practical clinical application.

Professor Simon Flexner in Edinburgh.

Professor Flexner, of the Rockefeller Institute, New York, Cameron Prizeman in Therapeutics of the Edinburgh University, lectured in the M'Ewan Hall of the University on March 4th to a large audience of students, professors, and other members of the profession. The lecturer took for his subject "Specific Local Therapeutics of Infection," dealing mainly with the serum treatment of epidemic cerebro-spinal meningitis. On the following day he delivered a clinical lecture to the combined university and extra-mural students of clinical medicine in the large theatre of the Royal Infirmary. The theatre was crowded. The lecturer discoursed on acute anterior poliomyelitis.

Appointment of Assistant Physician to the Edinburgh Royal Infirmary.

The managers of the Edinburgh Royal Infirmary at their meeting on March 4th appointed Dr. John Eason to be an assistant physician. A vacancy occurred because Dr. Byrom Bramwell's term of office as a full physician has expired. There were seven candidates, and the contest has been a very keen one.

Scottish Medical Insurance Council.

This body was to have had its first meeting on March 15th, but it has had to be indefinitely postponed owing to the disorganisation of the railway service consequent upon the coal strike. Meantime the lull in insurance matters of necessity continues.

Disjunction of Montrose Royal Infirmary from the Royal Asylum.

In view of the disjunction of Montrose Royal Infirmary from Montrose Royal Asylum, owing to the introduction of a new charter for the asylum, the special committee appointed by the asylum and infirmary board represented to the representatives of the district lunacy boards and parish councils of Forfarshire and Kincardineshire that a capital sum of £10,000 would be required to yield a sum of £350, the amount of an annual grant from the asylum to the infirmary. The petitioners for popular representation on the board, however, submitted an offer of £9350 cash down, in lieu of all rights of the infirmary in the corporation, and after conference the special committee recommended yesterday to the managers of the board the acceptance of that sum. The meeting unanimously approved the action of the committee.

Handsome Donation to Brechin Infirmary.

A sum of £5000 has been handed to Brechin Infirmary by the trustees of the late Mr. David Jamie.

Fire at the Aberdeen Royal Asylum.

An alarming outbreak of fire took place at the Aberdeen Royal Asylum last week and did considerable damage to the buildings. About 4 o'clock in the morning the night fireman discovered that part of the woodwork at the rear of the engine room had become ignited. In a few seconds a considerable area of the roof was in a blaze. The asylum horn was blown, calling out the fire brigade in the institution. The hydrants and other extinguishing appliances were brought into operation, and soon an impression was made on the flames. The city fire brigade had also been telephoned for, and the combined action of the brigades soon had the flames completely extinguished. The damage amounts to £200, and fortunately there was no damage done to the engines. From the engine-rooms the asylum is heated, and the means of cooking are also supplied from it, while the electric switchboard is also situated in the buildings. Dr. W. Reid, interviewed after the fire, said that the precautions provided against fire in the Royal Asylum were so complete that it was practically impossible for any outbreak to assume serious dimensions. The demonstration given by the staff in dealing with the outbreak was sufficient evidence of the safeguards provided for the absolute safety of the inmates. There had been no alarm amongst the patients, and few of them knew that anything unusual had happened till several hours after.

Aberdeen Medical Men and the National Insurance Act.

A provisional medical committee has been chosen for the burgh of Aberdeen to deal with contract practice in the city and other matters relative thereto. Dr. J. Munro Moir (Inverness) was nominated for membership of the Advisory Committee, which is to meet the Joint Insurance Commissioners in London.

Aberdeen Royal Infirmary.

The newly elected board of directors of the Aberdeen Royal Infirmary met on Feb. 29th. Mr. George M. Cook was unanimously elected chairman of the board for the ensuing year. Miss Elizabeth Edmonston, matron of the Becket Hospital, Barnsley, Yorkshire, was appointed matron of the infirmary in room of the late Miss Macnaughton. Intimation was given of a legacy of £1000 to the infirmary by the late Mr. David Jamie.

March 11th.

IRELAND.

(FROM OUR OWN CORRESPONDENTS.)

Substitute's Fees in the Poor-law Service.

THE amount of remuneration to be paid to a medical man doing duty as locum-tenent in the Poor-law service gives rise to many wrangles. The difficulty arises from the fact that the onus is put on the relieving officer of providing a substitute when there is necessity, while the Local Government Board does not permit him to make a bargain binding on the guardians. In a recent case Mr. W. R. G. Hamilton, of Edenderry, accepted duty, having been assured of remuneration at the rate of a guinea a day by the relieving officer, but the Local Government Board refuses to sanction payment at that rate.

Professorship of Surgery in the Royal College of Surgeons.

The Council of the Royal College of Surgeons is about to make the appointment of a Professor of Surgery. Like the other professors, his appointment is subject to annual re-election, but with the proviso that he shall not hold office for more than five years.

Medical Man's Life on the Aran Islands.

Probably few medical men in the Kingdom have a more adventurous life than the dispensary medical officer of the Aran Islands, situated in Galway Bay. There are three inhabited islands, and the only means of navigation from one to the other is by the "curragh," or hide-boat, a frame of wood covered by stretched cow-hide or canvas. One afternoon recently, at about 5 o'clock, the medical officer at Kilronan received a wire requesting his services immediately in a maternity case at Innismaan. Although sky and sea looked threatening, he succeeded in procuring a boat's crew, and set out in a curragh to cross the four and a half miles of storm-swept sea. After considerable difficulty Innismaan was reached and the boat was got ashore by the aid of willing islanders. Halfway across on the return journey the storm became a hurricane, and the craft was at the mercy of the waves. The doctor and crew gave themselves up for lost, but happily some trawlers were at anchor, and to these the crew held fast waiting for a lull. From that evening to the following Friday no curragh or steamer called at the island or left it.

Royal Victoria Hospital, Belfast: Resignation of Dr. Walton Browne.

At a meeting of the board of management of the Royal Victoria Hospital, Belfast, held on March 6th, a letter was read from the senior surgeon, Dr. J. Walton Browne, resigning his post. Dr. Browne, who has been surgeon to the institution for a period of over 36 years, was then appointed consulting surgeon to the hospital, a special resolution being passed thanking him for his valuable services and deeply regretting his resignation. Mr. Robert Campbell, assistant surgeon, will, it is believed, be promoted without a contest to the vacant surgeoncy, and for Mr. Campbell's position there is a keen canvass among four of the younger medical men of the Belfast Medical School.

The Newry Hospital.

At a meeting of the committee of this hospital on March 11th, the Earl of Kilmorey, K.P., presiding, a resolution was passed expressing regret at the retirement of Mr. B. Beamish as medical officer, and passing a cordial vote of thanks to him for his valuable services to the hospital during 18 years. The successor to Mr. Beamish is to be paid the same salary, £100, and the election will take place on April 11th.

March 12th.

PARIS.

(FROM OUR OWN CORRESPONDENT.)

Antivenomous Serum in the Treatment of Scorpion Stings in Children.

IN the regions of Ben Gardane and Zarzis scorpion stings often assume a particularly dangerous character. From 1906 to January, 1911, inclusive, Dr. Lefèvre, assistant médecin-major, has collected from the mortality statistics of the Sud six deaths due to this cause. Of the six children two received no attention for their injury; the rest were treated with injections of permanganate, or hypochlorite of sodium, or by cauterisation with zinc chloride. One of them had even received an injection of antivenomous serum. Having personally witnessed two fatal cases and being struck by the inefficiency of the local mode of treatment, Dr. Lefèvre injected 10 c.c. of Calmette's antivenomous serum into all the patients irrespective of their condition. The injection was always made between one hour and three hours after the sting. Not one out of eleven patients thus treated showed any signs of poisoning. This can hardly have been all a matter of coincidence. He concludes that in all cases of scorpion stings in children the injection of antivenomous serum ought always to be practised as soon as possible in association with the local method of treatment by cauterisation. Cauterisation, indeed, is often a matter of difficulty, for the patient is frequently incapable of indicating precisely the part stung, the mark is often imperceptible, and there is thus danger of cauterising the wrong place.

The Horace Wells Prize.

A prize of 500 francs is offered, to be adjudged in 1915, to the author of the best essay dealing with a notable improvement in the present methods of surgical anæsthesia, or to the discoverer of an approved anæsthetic agent or to the inventor of apparatus, procedures, or methods markedly facilitating narcosis. Essays must be addressed to M. Quincerot, president of the Comité Horace Wells, 28, rue de Moscou, Paris. No restriction is placed as to the profession or nationality of the candidates, but all the essays must be written in French and signed with a motto or device, the names and addresses of the authors being enclosed in a sealed envelope bearing the same device as their respective essays.

Aluminium Apparatus for Fractures of the Limbs.

M. Raoul Deslonchamps showed at the Société de Médecine de Paris on Feb. 24th some apparatus in sheet aluminium for the treatment of fractures of the limbs. Since aluminium is permeable to the X rays it is possible to control by radioscopy the exact position of the bony fragments. If they are in bad position the author uses small bags of indiarubber into which air is forced, thus exercising where required a pressure that is easily borne.

Sanitary Measures in Parliament.

A new party has been formed and has opened a provisory bureau in the Chamber of Deputies to aid the struggle against tuberculosis. This body has examined the legislative measures to be undertaken to combat tuberculosis, among others the organisation of instruction on tuberculosis, the establishment of cheap markets, and the necessity for notification. The anti-alcohol party in the Chamber of Deputies has also met under the presidency of M. Joseph Reinach. It urges that the Hygienic Commission should bring before the Chamber at the earliest moment possible a measure for the total suppression of absinthe, and should again present a measure to limit the number of places for the retailing of intoxicants.

The French Committee for the next International Congress of Medicine in London in 1913.

A preparatory meeting of the French committee took place on March 3rd in the great amphitheatre of the Faculty of Medicine of Paris under the presidency of Professor Landouzy, *doyen* of the Faculty of Medicine. Each of the 22 French sections nominated its bureau for the forthcoming congress. The presidents, vice-presidents, and secretaries were appointed and will proceed to prepare the lists of subjects in their respective sections to be presented to the Congress. There was a large attendance at the meeting, giving rise to the hope that the French participants in the congress will be numerous, and will include the greatest names in French medicine. The Bureau of the French Committee of Organisation consists of Professor Landouzy, president; Professor Debove, Professor Hayem, Professor Reclus, and Professor Lucas Championnière, vice-presidents; Dr. Raoul Blondel, secretary-general; and M. Piere Masson, treasurer.

An Army Consultative Sanitary Committee

M. Millerand, the Minister of War, has modified the name and composition of the sanitary committee attached to the Ministry of War. The successive decrees of 1882, 1888, and 1901, not being in absolute accordance, give it an irregular character. Moreover, of the members composing the committee two did not belong to the sanitary service, but were borrowed from other arms or services, and only one member

belonged to the Sanitary Corps of the colonial troops. Henceforth, the Sanitary Committee will revert to its former and true title of Consultative Sanitary Committee and will no longer admit outsiders. The number of medical inspectors of colonial troops on the committee is to be raised from one to two. This measure will provide for the sanitary service of these special troops a representation more in accord with its importance. The committee will thus consist of 11 members, of whom eight at the most will be selected from the medical inspectors general or medical inspectors of the corps of military sanitation, and two at least from those of the sanitary corps of the colonial troops in addition to the pharmacist inspector of the Sanitary Military Corps.

March 11th.

SWITZERLAND.

(FROM OUR OWN CORRESPONDENT.)

The Surgical Treatment of Phthisis.

Professor F. Sauerbruch, who has occupied the chair of surgery at the University of Zürich since the death of Professor A. Krönlein, has published a paper on the Surgical Treatment of Phthisis. The operative treatment of tubercular cavities of the lung has hitherto been anything but encouraging. According to Dr. Tuffier's statistics only 1 patient out of 27 was healed; most of them died rapidly. Runeberg later reported on about 19 fatal cases. In 1888 Quincke and Carl Spengler, independently of each other, proposed mobilising the diseased lung by resection of several ribs. Several cases were successfully operated on by Carl Spengler, Bier, Landerer, Turban, and von Mikulicz. Chondrotomy, a new method proposed by Freund, has been performed only seven times. Forlanini and Murphy introduced operative pneumothorax, with Brauer seconding them.[1] The Davos doctors have reported satisfactorily on the results provided that the other lung was not extensively diseased. Professor Sauerbruch reports on his experiences with thoracoplasty as introduced by Friedreich in advanced cases of phthisis. Rapidity and operation *à deux temps* are absolutely necessary in view of the feeble condition of the patients and the danger of fatal collapse. Professor Sauerbruch has performed 50 operations on 32 patients, of whom only 1 succumbed to the operation; 8 were suffering from bronchiectasis, and 24 from phthisis. Two patients died respectively four and nine months after operation; 2 were cured, 2 almost cured, the rest improved more or less. The method recommends itself for very severe cases with one-sided localisation where climatic, dietetic, and medicinal treatment cannot effect a cure.

Severe Hæmorrhage from an Ovarian Cyst.

Dr. Tschudy, surgeon to the Theodosianum Hospital at Zürich, reports a case of severe hæmorrhage from an ovarian cyst, which simulated appendicitis. He has previously read a paper on two similar cases before the Zürich Medical Society in 1910. A patient, aged 32, was seized with severe abdominal pain at 9 A.M. on Sept. 23rd, 1911, which disappeared after a couple of hours. Acute return at 3 and 8 P.M. On admission to the hospital at 9 P.M. the pain was still acute and localised above the symphysis pubis. Temperature 37·2° C. (99° F.), pulse 64. Pregnancy and a tubal hæmorrhage being excluded, the diagnosis of appendicitis seemed the most probable. Laparotomy revealed a considerable amount of blood in the abdomen and oozing from an ovarian cyst of the size of an apple. The adiposity of the patient had prevented this tumour being felt on examination. There were about 3 pints of blood in the abdomen. Uneventful recovery ensued and the patient was dismissed from hospital after three weeks. Such cases are very rare. Bürger reported one in the *Zentralblatt für Gynækologie* in 1904. As in other cases of abdominal hæmorrhage, the pulse-rate was low.

Zürich, March 11th.

[1] THE LANCET, vol. ii., 1911, pp. 145, 150–3, 233, 404, 474.

MEDICAL GRADUATES' COLLEGE AND POLYCLINIC.—The annual meeting of members and subscribers will be held at the college, 22, Chenies-street, W.C., on Friday, March 22nd, at 5.15 P.M., when Mr. James Cantlie will be in the chair.

CANADA.

(FROM OUR OWN CORRESPONDENT.)

Deaths of Medical Men in the United States and Canada.

IN 1911, there were 2145 deaths among medical men in the United States and Canada, or, estimating that the number of medical men in these two countries to be 140,000, the rate was 15·32 per 1000. For the nine previous years the death-rates were as follows: 1910, 16·96; 1909, 16·2; 1908, 17·39; 1907, 16·01; 1906, 17·0; 1905, 16·36; 1904, 17·14; 1903, 13·7; and 1902, 14·74. The average annual mortality was 16·11 per 1000. The age at death varied from 23 to 99, with an average of 59 years and 10 months. The chief causes of death in the order named were: cerebral hæmorrhage, "heart disease," senility, pneumonia, external causes, and kidney disease.

Montreal Death-rate in 1911.

During the year 1911 there were 9974 deaths in the city of Montreal, 5110 males and 4864 females, thus giving a death-rate of 21·39 per 1000 of the population. This is 1·01 less than in 1910. The deaths of children under five years of age numbered 5355, being 53·69 per cent. of the general mortality, or a decrease of 0·50 per cent. over that of 1910. Measles claimed 74 in 1911, against 155 in 1910; scarlet fever, 76 against 118; diphtheria, 133 against 136; typhoid fever, 124 against 192; phthisis, 736 against 785.

Professor Adami.

Quite recently Dr. J. G. Adami, professor of pathology in McGill University, Montreal, was offered the chair of pathology in the Northwestern University, Chicago, U.S.A., which is better endowed. Canadians are exceedingly glad to learn that the services of Professor Adami are not to be lost to the Dominion. His loss would have been felt not only by McGill and Montreal but the entire country. Dr. Adami came to McGill in 1892 as professor of pathology. He was for three years pathologist to the Montreal General Hospital, and is now head of the pathological department of the Royal Victoria Hospital. He has always taken a leading part in public health matters, particularly in the campaign against tuberculosis.

Hebrew Tuberculosis Hospital for Montreal.

Recently a week was set aside by the Hebrews of Montreal to conduct a campaign for $25,000 necessary for the annual maintenance of the Mt. Sinai Sanatorium. Some time ago the Hebrews of Montreal secured a site for a sanatorium near Ste. Agathe and plans for a new building were obtained. The farmhouse on the grounds served at first as a temporary hospital for urgent cases, but for lack of funds this had to be closed, and the patients placed in boarding houses. As soon as the maintenance fund is found a well-organised society will campaign for funds for the new building at a cost of $35,000. The results will tell what Jewish charity will do in the direction of fighting the "white plague."

Clinical Records of the Insane.

Dr. W. J. Robertson, superintendent of the Hospital for the Insane at London, Ontario, has recorded 500 consecutive admissions to this institution from Jan. 1st, 1908, to June 6th, 1910. Prior to this time no systematic attempt was made to obtain the life-history of each patient, no conferences of the staff were held, no reports and no clinical notes were on record. Of the total 500 cases, 16 were admitted twice during the period above mentioned, so that 484 individuals are dealt with. The males were 251 and the females 233. Family history: In 153 cases, or 31 per cent., insanity was reported as having occurred in some relative. In 40 cases, or 8·26 per cent., alcoholism in some member of the family is reported, and in 17 of these cases alcoholism and insanity were found combined. Personal history: In 57, or 11·7 per cent., a history of alcoholism was found, the patients not being confirmed alcoholics, but having drunk to excess at some period of their lives. In only 10 cases was a history of syphilis found (Wassermann reaction not taken). Of the dementia præcox cases, 89, or 44·5 per cent., were discharged recovered or improved; 13, or 6 per cent., died; 91, or 45 per cent., still in residence. Of the manic-depressive insanity, 50, or 83 per cent., were discharged as recovered or improved; 2, or 3·3 per cent., died; 7, or 11 per cent., still in residence. Melancholia

vera, 17, or 56 per cent., recovered or improved; 6, or 20 per cent., died; 6, or 20 per cent., still in residence. Seniles: 14, or 23 per cent., discharged improved; 18, or 30 per cent., died; 23, or 39 per cent., still in residence. General paralysis: 3, or 15 per cent., discharged improved (remission); 13, or 65 per cent., died; 3, or 15 per cent., in residence. Alcoholism: 11, or 91 per cent., discharged recovered or improved; 1, or 9 per cent., still in residence. Summary: 233 cases, or 48 per cent., have been discharged as recovered or improved; 8 discharged as unimproved; 67, or 13 per cent., have died; 5 eloped; 4 were transferred; 5 were deported; 162, or 33 per cent., are still in residence.

New Hospital Journal in Toronto.

Dr. W. A. Young, publisher of the *Canadian Journal of Medicine and Surgery* at Toronto, has launched a new hospital journal, *The Hospital World*, which is to be an international hospital medium, with head office in Toronto, and branch offices in Buffalo, N.Y., U.S.A., and London, England. The first number was issued in January, and is a very creditable production. It is understood that Dr. J. N. E. Brown, late superintendent of the Toronto General Hospital and secretary of the American Hospital Association, will shortly assume editorial control.

Tuberculosis Sanatoriums in Newfoundland.

The sons of Sir R. G. Reid, St. John's, Newfoundland, have offered to the Government of Newfoundland to equip a building in St. John's to be used as a sanatorium or hospital for the treatment of tuberculosis on condition that the Government provides a suitable site. In a letter to the Premier of Newfoundland, Sir E. P. Morris, Mr. W. D. Reid, the president of the Reid Newfoundland Company, states that he estimates this will cost $50,000. In addition to this Mr. Reid states that his brothers and himself will, on sites provided by the Government, build, furnish, and equip in each of the 16 extern electoral districts of the island a sanatorium or hospital for the same purposes, but smaller in size and estimated to cost about $3000 each, or $50,000 altogether, which, when fully equipped, along with the institution for St. John's city, will be handed over to the Government unconditionally for management and control. When established these sanatoria will be known as "The Reid Sanatoria."

The Needs of Asylum Medical Officers.

The board of management of the Protestant Hospital for the Insane at Verdun, Quebec, have forwarded a memorial to the government of that province asking that consideration be given to a scheme of pensioning medical officers after a sufficient length of time in the asylum service. This memorial points out that owing to the increased number of insane in Quebec more and more medical officers have additional onerous work thrust upon them. It is also pointed out that the salaries of the medical service of these institutions are inadequate to provide for the officers making provision for the future, and that while their duties are very arduous they are also often dangerous. Physicians to these institutions should be placed on a plane with other ranks of the civil service in which pensions are granted.

March 1st.

NOTES FROM INDIA.

(FROM OUR OWN CORRESPONDENTS.)

Women and the Medical Profession in India.

IN order to encourage women desirous of entering the medical profession to study for the M.B. and C.M. degree of the Madras University, the Madras Government has resolved to award annually three stipends of 25 rupees per month to young women who undertake to study for their degree. The stipends will be allotted each year by the Provincial Committee of the Countess of Dufferin Fund, and may be awarded either to students who have already passed the intermediate examination in arts or those who are reading for it. The maximum tenure of stipend will be seven years. The Government is also of opinion that as a further inducement to obtain these higher qualifications enhanced salaries should be given those possessing it. The salaries range from 100 to 200 rupees, with the allowance ranging from 25 to 50 rupees, when the holders of qualifications are in independent charge.

An Incident in Anti-malarial Measures in India.

The following true story of the well-meaning manager of a tea estate in Sylhet may interest your readers. He was greatly concerned that his coolies should escape the ravages of malaria, and posted himself in all the literature on the subject, from Laveran to Bentley. He waged relentless war on every species of mosquito, and then started to make his people immune. On pay days, as each coolie came up for his pay, he administered a five-grain dose of quinine, which the coolie had to swallow on the spot. One night after this treatment he was summoned to the lines to see a coolie who was suffering from severe cinchonism. He could make nothing of the case and sent post-haste for the district doctor. "What have you been giving him?" asked the medical man. "Quinine," replied the planter. "How much?" "Five grains." "Nonsense, man, he must have swallowed fifty to be afflicted in this way." And so it turned out. The coolie had come up again and again to the pay office to draw the pay of certain absentee friends and had taken the quinine each time without a murmur, so as not to upset the sahib.

Feb. 14th.

Obituary.

CHARLES PARNHAM SKRIMSHIRE, M.R.C.S. ENG., L.S.A.

Mr. C. P. Skrimshire, late medical officer of health of the Brynmawr urban district and the Llanelly rural district, died from cerebral hæmorrhage at his residence, "Sandhaven," Weston-super-Mare, on Feb. 22nd, in his sixty-eighth year. He was the son of the late Mr. George Skrimshire, surgeon, of Holt, Norfolk, and received his medical education at St. Bartholomew's Hospital, where he was senior scholar in 1869. In the same year he took the "College and Hall," and shortly afterwards commenced practice in Blaenavon, Mon. He held many public appointments, being senior surgeon to the Blaenavon iron works, medical officer of health for the Brynmawr urban and the Llanelly rural districts, medical inspector under the Factories Act at Blaenavon, and public vaccinator for Brynmawr. Mr. Skrimshire was an ardent Freemason, and had been Master of the Kennan Lodge. He was a distinguished Volunteer, and had been brigade-surgeon of the South Wales Infantry Brigade, and was granted the Volunteer Decoration for long service.

He was very popular in Blaenavon, and had been president of the Eastern Valleys Medical Association. Mr. Skrimshire lately retired from active work and had taken up his residence at Weston-super-Mare, where he was highly respected, especially by the poor, to whom he was most generous; and much sympathy is felt for his widow and children. The funeral took place at the Weston cemetery on Feb. 26th, the service being performed by the Rev. C. Hodder, assisted by the brother of the deceased, the Rev. Canon Skrimshire.

DEATHS OF EMINENT FOREIGN MEDICAL MEN.—The deaths of the following eminent foreign medical men are announced:—Dr. F. Zachrisson, lecturer on surgery in the University of Upsala.—Dr. E. G. A. Landergren, lecturer on physiology in the Stockholm Medical School.—Dr. A. Negri, *privat-docent* of General Pathology and Bacteriology in the University of Pavia.

PRESENTATIONS TO MEDICAL PRACTITIONERS.—At a recent meeting in connexion with St. Mark's branch of the St. John Ambulance Association, Liverpool, Mr. Percy Gordon Sheppard, L.M.S.S.A. Lond., was presented by the members with an inlaid ink-stand as a mark of their appreciation for his services as honorary instructor.—At a recent meeting in Padstow the Hon. Mrs. Prideaux Brune, on behalf of the Padstow (Cornwall) "Ladies' First-aid and Home Nursing Class," presented Mr. Frank Harvey, M.R.C.S. Eng., L.S.A., with a handsome pair of old Sheffield plate candlesticks as a mark of appreciation for his services as honorary lecturer

THE NATIONAL INSURANCE ACT.

THE GENERAL MEDICAL COUNCIL AND THE COMMISSIONERS.

AT the last meeting of the Executive Committee of the General Medical Council the President, Sir Donald MacAlister, reported upon the communications which had passed between the Assistant Secretary of the Joint Committee of the National Insurance Commissioners and the Registrar of the Council with reference to the proposed conference on Feb. 2nd between the Commissioners and representatives of the medical profession. The President said that before replying to the Commissioners' invitation he consulted with the members of the National Insurance Bill Committee of the General Medical Council and with the authorities at the Privy Council Office. It will be remembered that the answer sent by direction of the President on Jan. 30th explained that since the Council would not meet before June, nor its Executive Committee before the end of February, it was impracticable to procure the formal appointment by the Council of six representatives to confer with the Insurance Commissioners on Feb. 2nd. The letter added that the Council would, however, give its best consideration to any communication transmitted to it by the Commissioners and would be ready to afford them such information as they might require on matters lying within its province.

MEMORIAL FROM THE WIVES OF PRACTITIONERS.

The Executive Committee of the General Medical Council also received a memorial with regard to the National Insurance Act from the Doctors' Wives Defence Movement, Manchester. This memorial was sent in response to an intimation that the Council would be prepared to receive petitions presented in accordance with the standing orders. It was prefaced by a statement by the honorary secretary, Mrs. Thomas Gregory, on the effect of the Bill upon the wives, families, and dependents of medical men. The memorial received 836 signatures in three days and was worded as follows:—

We the undersigned, wives of duly registered medical men of Manchester, Liverpool, Oldham, Blackburn, and other towns and places in England and Wales, desire to present to the President and Members of the General Council of Medical Education and Registration of the United Kingdom this protest against the National Insurance Bill as at present framed. We would urge you to give the following statements your careful and deliberate consideration as adversely affecting our interests. The Bill will cause decided loss of income, while creating greater demands upon our resources, thus giving rise to reduced education for our children, reduced life insurance, loss of goodwill or practice value. The Bill offers no provision or compensation against such losses. Our grave anxiety is for the welfare of our children, as it would mean in many cases absolute destitution for the wife and children in the event of a husband's incapacity or death.

THE MEDICAL FEDERATION.

The Medical Federation, Limited, whose provisional registered office is at Lion Chambers, Broad-street, Bristol, has issued a circular letter to medical practitioners, which states that the time has now come when members of the medical profession must, in their joint and several interests, unite, and that the success of any scheme to protect the interests and to guarantee the fair treatment of the profession, both now and in the future, can only be ensured by unanimous and concerted action. For this purpose any organisation which is formed must be not merely a local but a national measure; in fact, a federation of all medical practitioners. The circular alleges that although the British Medical Association already exists to protect the interests of the profession, for various reasons it has never in the past succeeded in adequately safeguarding its members. It can give no guarantee of protection to its members other than one conditional upon the support obtained by a voluntary subscription list, and a perusal of its Memorandum will show that no power is reserved to use this fund to indemnify or compensate its members. The Association has for years been striving to obtain the necessary powers, but the only way in which it can do so is by coöperation with an existing body which has those powers. For this reason the Medical Federation, Limited, has been formed with the most ample powers, and the fact is emphasised that the company is formed in no spirit of hostility or opposition to the British Medical Association, but with the express object of strengthening its weak points—of being its complement. The purpose of the company is to secure the fair treatment and protection of the members of the medical profession, to ensure adequate remuneration for their services, to oppose the passing of legislation hostile to them, and generally to safeguard their interests with due consideration for the rights of the public. The present directorate is provisional only. The members of the company will elect their own directors out of their own number, and every member will be represented on his local or district committee, as well as in the central governing body. The entrance fee is £2 2*s*. and the annual subscription 25*s*.

Certain points in the Medical Federation's circular have been considered by the newly formed State Sickness Insurance Committee of the British Medical Association. The statement that the Association "could give no guarantee of protection to its members other than one conditional upon the support obtained by a voluntary subscription list" has been referred to counsel, and the Association has been advised that the Association's Defence Fund can be lawfully used for indemnification and compensation. Representatives of the Federation have, we understand, been invited to attend the next meeting of the State Sickness Insurance Committee for the purpose of clearing up misapprehensions and defining the relations between the two bodies.

Medical News.

ROYAL SOCIETY OF ARTS.—At a meeting of the Royal Society of Arts held on March 6th, with Mr. James Swinburne in the chair, Mr. T. Thorne Baker read a paper on Some Modern Problems of Illumination. Almost at the outset he spoke of the differing biological effects produced by various parts of the spectrum, as proved by the luxuriant growth of certain bacteria in the two regions corresponding to the chlorophyll bands, the remainder of the spectrum being practically destitute of those organisms. He then said that the preference of many families of bacteria and also of yeast for certain colours tended to show that the artificial light employed for the habitations of human beings should presumably resemble that to which they were normally accustomed, and should, therefore, be spectroscopically equivalent to the daylight derived from white clouds. Mr. Baker here described in much detail the analysis of illumination by spectro-photography and the methods of preparing screening filters by means of which two dissimilar illuminants may be made to resemble one another in their effects. For this method of analysing light the concave grating spectrograph was superior to the prism spectrograph, because in the former the dispersion throughout the spectrum was proportional to the wave length, whereas in the latter the green, yellow, and red regions were all cramped up together, and therefore tended to appear far more luminous than actual measurement showed them to be. Two forms of spectro-photometer were also described, as well as a contrivance for use in industrial work where colour-mixing or matching was part of the ordinary routine, with the result that standard daylight illumination was available for working by in all weathers and by day or night. A number of metal filament lamps (usually tungsten) were fixed in the top of a box, the bottom of which was formed by a gelatin-on-glass screening filter. After passing through this filter the rays were diffused by a piece of ground-glass, and then fell on the table where the work of mixing or matching colours was in progress. Mr. Baker here suggested that this method of imitating normal daylight would be useful in the illumination of art galleries and picture exhibitions. For this purpose incandescent tungsten filaments were the best source of light; it was unlikely that normal daylight could ever be matched with the illumination from a mercury vapour lamp. The Moore and Cooper-Hewitt lamps were probably only the forerunners of many other lamps depending on the luminosity of electrically excited gases, notably neon and helium. Pure neon was exceedingly luminous when subjected to high tension electrical discharges, and M. Claude claims to be able to produce in a day 100 litres, which would suffice for the manufacture of 1000 tubes of neon of 1000 candle power each. The tubes at present made for commercial purposes must be supplied with alternating current. The lighting power is about 200 candles per metre of tube, and the consumption of electricity for the luminous portion of the tube is about 0·45 watt per candle. Neon rays are a rich golden red. Rarefied pure helium gas gives an intense light

of whitish-yellow hue, somewhat similar to that of the flame of some of the lighter burning oils. Helium vacuum tubes 7 centimetres in length and 2 millimetres in bore, with terminal bulbs containing aluminium electrodes 25 millimetres in diameter, have quite recently been adopted by the Bureau of Standards at Washington as the standard unit of illumination.

A CONVERSAZIONE will be held at the West London Hospital, Hammersmith, on Wednesday next, March 20th, at 8.30 P.M., when the staff of the Post-Graduate College will be "at home" to their friends.

NEW CHILDREN'S HOSPITAL FOR VIENNA.—A wealthy Viennese Jew, David Ritter von Gutmann, has given the Jewish community 3,000,000 kronen (£120,000) to build a hospital for children. This is to be ready for occupation within two years.

MEDICAL SOCIETY OF LONDON.—The 139th anniversary dinner of this society was held on March 6th at the Whitehall Rooms, Hotel Metropole, under the chairmanship of Dr. J. Mitchell Bruce, the President. There was a large and distinguished gathering, and the guests included the presidents of many sister societies and associations. The chairman, in proposing the toast of the evening, touched briefly on the long history of the Medical Society of London, and congratulated it upon the keenness and earnestness of its debates and the success of its less formal clinical evenings. He paid a tribute to Dr. A. E. Garrod's Lettsomian lectures, and referred to the loss which the society had sustained by the death of Pavy, Hughlings Jackson, Allchin, and Lister, who all had been office-bearers. Mr. J. Bland-Sutton replied in a humorous speech which much amused his audience. He related the case of a rhinoceros with intestinal obstruction which did not yield to an ounce of croton oil in a bun, but was relieved by an enema containing a pint of castor oil and a bottle of whisky in six gallons of soap and water. The result was immense, and the beast survived for 23 years. Dr. T. B. Hyslop proposed the health of the guests and kindred societies, and told some good stories. The reply was entrusted to Mr. Rickman J. Godlee, President of the Royal College of Surgeons of England, and Lieutenant-Colonel Sir William Leishman, R.A.M.C., President of the Society of Tropical Medicine and Hygiene. Mr. Godlee announced that it was Lister's wish that his medical books should pass into the possession of the Medical Society. Sir William Leishman said that he represented the youngest of medical societies, which, however, had already a membership of 606. In his opinion the multiplicity of such societies showed that medical men were gregarious. The health of the President was very warmly proposed by Sir Lauder Brunton, and the toast was received with musical honours. Dr. Mitchell Bruce, in his reply, asked the company to drink the health of the honorary secretaries, and Dr. J. W. Carr and Mr. Edred Corner each responded before the close of a most successful evening.

Parliamentary Intelligence.

NOTES ON CURRENT TOPICS.

Medical Treatment of School Children.

A SUM of £60,000 appears in the Education Estimates this year for the medical treatment of school children. This is the first time that such a grant has ever been proposed by the Board of Education, but the authorities there have come to the conclusion that if the medical inspection of school children is to be attended with the most fruitful results medical treatment must be combined with it. On Thursday, March 7th, Mr. WHITEHOUSE, in the course of a debate on the vote on account, asked the representatives of the Board of Education to explain their attitude on this subject. There were many engaged in education, he said, who felt that medical inspection of elementary school children was almost useless until it was made possible for medical treatment to be carried out at the schools and under the control of the authorities attached to the schools. Mr. TREVELYAN, the Parliamentary Secretary to the Board of Education, drew attention to the fact that £60,000 had been put down on the estimates for the purposes of medical treatment. He mentioned that regulations would issued under which that sum would be spent, and he hoped that it would result in increased activity on the part of the local authorities in carrying out what both sides of the House regarded as a necessary expenditure to raise the standard of the health of school children.

Employment and Superannuation of Asylum Officers.

Several Bills dealing with the position of asylum officers are before the House of Commons. The one which was recently introduced by Lord WOLMER not only seeks to amend the Asylum Officers' Superannuation Act, 1909, but proposes to limit the hours of employment of officers and servants in asylums. The terms of the Bill are identical with the amended text of last year's measure. As was noted at the time, the Select Committee of the House of Commons came to a compromise. The Bill, whilst allowing for elasticity in administration and for emergencies, proposes to institute a maximum 70 hours week for asylum attendants. The Bill further gives to female established officers or servants of the first class a right to superannuation after 25 years' service. Clause 6 lays down that the power of the visiting committee to remove an officer or servant shall not be delegated to any officer, but general rules "may provide for enabling the medical superintendent or any other person specified in the rules to suspend any officer or servant from the service of the asylum pending the decision of the visiting committee as to whether he shall be dismissed or not."

Sir CHARLES NICHOLSON has introduced an Asylum Officers' Superannuation Bill which differs in certain respects from the measure brought forward by Lord WOLMER. It does not deal with the hours of asylum attendants, and the clause with reference to dismissals and suspensions does not find a place in it. It is therefore purely a measure dealing with superannuation. Sir CHARLES NICHOLSON has the support of Colonel LOCKWOOD, Mr. CROOKS, Mr. MILLAR, Mr. HARRIS, and Mr. NANNETTI in bringing forward his Bill.

Abolition of Vivisection Bill.

The object of Mr. LANSBURY'S Abolition of Vivisection Bill is to prohibit under heavy penalties experiments and demonstrations on live animals. The preamble of the Bill sets forth that "it is expedient to amend the law relating to cruelty to animals in the cases of animals which for medical, physiological, or pathological or scientific purposes, or for the purpose of testing former discoveries, or for the acquirement of manipulative skill, or for the illustration of lectures in medical schools, hospitals, colleges, or elsewhere are subjected to inoculations or to other experiments calculated to cause pain or suffering except for the purpose of curing or alleviating any injury or disease from which such animal is suffering." Clause 2 of the Bill lays down that "it shall not be lawful to subject any animal to vivisection, that is to say, to perform on any live animal with or without the use of anæsthetics, any experiment or demonstration or inoculation of a nature to cause pain or suffering to the animal, either directly or in its after-effects, for any pathological, surgical, physiological, or other scientific purpose, or for the acquirement of manipulative skill.

The Report of the Royal Commission on Vivisection.

The final report of the Royal Commission on Vivisection was issued to Members of the House of Commons on Tuesday, March 12th. The Commissioners say that, having regard to the witnesses who have appeared before them, there can be no doubt that the great preponderance of medical and scientific authority is against the opponents of vivisection. They come to the conclusion that experiments on animals adequately safeguarded by law and faithfully administered should not be prohibited by legislation. The recommendations of the Commission are summarised as follows:—

1. An increase in the inspectorate.
2. Further limitations as regards the use of curare.
3. Stricter provisions as to the definition and practice of pithing.
4. Additional restrictions regulating the painless destruction of animals which show signs of suffering after experiment.
5. A change in the method of selecting and in the constitution of the Advisory Board to the Secretary of State.
6. Special records by experimenters in certain cases.

There are reservation memoranda.

Vivisection of Dogs.

By a curious coincidence the publication of the report of the Royal Commission on Vivisection was followed on Tuesday evening by a discussion in the House of Commons on a motion dealing with the vivisection of dogs. Mr. MCKENNA, the Home Secretary, pleaded, however, the impossibility of any decision being arrived at on the matter until due consideration had been given to the report of the Royal Commission on Vivisection, and the House was counted out.

Naval Medical Service.

Mr. CHURCHILL, the First Lord of the Admiralty, in his statement explanatory of the Naval Estimates, referred to the recent changes in the organisation and conditions of service of the medical staff which had followed upon the recommendations of the Durnford Committee.

The General Medical Council's Accounts.

The accounts of the General Medical Council for 1911, and also those of the branch councils and of the Dental Registration Fund, have been presented to the House of Commons.

HOUSE OF COMMONS.

WEDNESDAY, MARCH 6TH.

Holiday Feeding of Necessitous Children.

Mr. LANSBURY asked the Prime Minister whether he was aware of the suffering caused amongst tens of thousands of poor children by the inability of local authorities to incur the expenditure necessary to feed such children during holiday times; and whether, with a view to

putting an end to such suffering during the forthcoming holidays, he would arrange for sufficient time being given to allow the House to pass the necessary amending Bill to enable such feeding to take place.—Mr. ASQUITH answered: I am not aware that any Bill for this purpose is before the House. The Government, however, are prepared to give favourable consideration to the principle.

Sanatoriums in Scotland.

The Marquis of TULLIBARDINE asked the Secretary to the Treasury what proportion of the £1,500,000 available for the purpose of providing sanatoriums would be available for Scotland, and whether it would be allocated amongst counties and burghs on the basis of population, or whether it would be pooled.—Mr. MASTERMAN furnished the following written reply: In accordance with Section 64 (1) of the National Insurance Act, the proportion of the total sum available in accordance with that section for providing or maintaining grants to sanatoriums and other institutions which is allocated to England, Scotland, Ireland, and Wales respectively will depend upon their populations as shown in the Census of 1911. The allocation of the sum so available for Scotland will rest primarily with the Scottish Local Government Board, and I understand is now under their consideration.

Maternity Benefit under the Insurance Act.

Mr. ROWNTREE asked the Secretary to the Treasury whether under Section 8 (6) of the National Insurance Act an insured woman was entitled to sickness benefit in respect of her confinement for four weeks, even if she was not incapable of work during the whole of that period.—Mr. MASTERMAN wrote in reply: An insured woman will receive maternity benefit of 30*s.* on confinement. An insured married woman will receive sickness benefit for so long as she is incapable of work. The Factory and Workshop Act, 1901, prohibits the employment in a factory or workshop of any woman within four weeks after childbirth, but if the woman is certified to be incapable of work for a longer period she will continue to receive sickness benefit.

THURSDAY, MARCH 7TH.

Telephones and Tuberculosis.

Dr. C. ADDISON asked the Postmaster-General whether he had caused any inquiry to be made into the dangers which had been stated to arise from the use of telephones by persons suffering from open tuberculosis; and, if so, whether he was in a position to state the result of his inquiry.—Mr. H. SAMUEL replied: A prolonged investigation was undertaken by Dr. H. R. D. Spitta, at my request and has recently been completed. It extended not only to telephones used in public call offices, but also to certain telephones which were installed at a sanatorium for the regular and exclusive use of patients in all stages of tuberculosis. As a result Dr. Spitta reports that in his opinion "the transmission of tuberculosis through the medium of the telephone mouthpiece is practically impossible." I propose to issue a full statement to the press, as the subject is naturally one of considerable public interest.

Illness at Dartmouth Naval College.

Colonel BURN asked the Secretary to the Admiralty whether steps could be taken to ensure extra assistance at Dartmouth Naval College in times of excessive sickness, so as to prevent the hours of labour of the cadets' servants being unduly extended, as happened during a recent epidemic.—Mr. MACNAMARA replied: It is already the practice to provide for the exigencies of abnormal sickness by a temporary increase in the numbers of nurses and sick-berth ratings allowed to the Royal Naval College. On the occasion in reference, ten qualified female nurses were sent to Dartmouth and one additional medical officer. With regard to the suggestion that the hours of labour of the cadets' servants were unduly extended, the fact is that special arrangements had to be made for the employment of cadets' servants on night duty, each servant taking one hour's duty every fourth night for a period of 19 nights in all.

Medical Treatment of School Children.

Lord HENRY CAVENDISH-BENTINCK asked the President of the Local Government Board whether in cases where treatment of children was prescribed by school medical officers and the parent was unable, by reason of circumstances, to pay the cost of such treatment, the board of guardians was bound to provide such treatment for the child if it was not undertaken by the education authority; and whether he would by circular or otherwise, call the attention of boards of guardians to their duties in this respect; and whether the cost, if defrayed, would be medical relief, which did not disfranchise the parent.—Mr. BURNS answered: It is the duty of boards of guardians to relieve destitution, and, as pointed out in the circular to guardians on the administration of out-door relief, a person may properly be regarded as destitute who is unable to provide for himself the particular form of medical attendance or treatment of which he is in urgent need. The principle would appear to me to apply to the case of children who need medical treatment which the parent is unable to provide. I realise that the relative position of the boards of guardians and the local education authorities in this matter is one of some difficulty, and I have already had the matter under consideration. I may add that medical relief of the kind referred to afforded by boards of guardians would not involve disfranchisement of the parent.

MONDAY, MARCH 11TH.

The National Insurance Act.

Mr. F. HALL (Dulwich) asked the Secretary to the Treasury whether he was now in a position to state the date on which it was proposed that the National Insurance Act should come into force; whether such date would relate to the whole of the United Kingdom; and, if not, whether the working of the measure would be suspended in those districts which had shown themselves to be not yet ready for its provisions.—Mr. MASTERMAN said, in reply: I know of no reason why the health insurance part of the National Insurance Act should not come into operation on the date given in Section 115 of the Act—namely, July 15th, 1912. It is not intended that that date should vary in different parts of the United Kingdom. The Board of Trade as at present advised proposes to bring the unemployed insurance part of the Act into force on July 15th next for the United Kingdom as a whole.

Sick Absences in the Post Office Staff.

Mr. DAWES asked the Postmaster-General whether his attention had been directed to the number of sick absences, due mainly to nervous complaints, among the female counter clerks and telegraphists during the year 1911; whether he was aware that during the month of January, 1912, as many as 52 women out of a staff of 195 were absent for varying periods, and that during last month over 50 women were incapacitated for duty; whether he would state what additions had been made to the East Central district staff in consequence of the admitted understaffing a short time since; and whether he would institute a further inquiry into the general conditions of working and the nature of the duties imposed, with a view to removing the causes of the sick absences.—Mr. H. SAMUEL answered: My attention has been called to this matter. I am glad to say that apart from a small proportion of the staff who required prolonged sick leave the general health during 1911 of the female counter clerks and telegraphists employed in the East Central district was satisfactory in spite of the excessive heat experienced last summer. The amount of sick leave due to nervous ailments represented rather less than 14 per cent. of the total sick absence. The figures 52 and 50 quoted by the honourable Member include some other officers than counter clerks and telegraphists and are overstated by about 20 per cent. Five officers were added to the reserve staff during 1911 and the question of creating a further additional appointment is under consideration. In the circumstances I do not think that the inquiry referred to by the honourable Member is necessary.

The Certification of Lunatics.

In the course of the debate on the Vote of Account,

Mr. BURNS (President of the Local Government Board) said that where it was possible to have an inclusive salary for a Poor-law medical officer to certify lunacy it should be done, and as vacancies occurred by death or otherwise he was doing that. The certification of ordinary lunatics was a matter for the Lord Chancellor and Home Office.

WEDNESDAY, MARCH 13TH.

Sanatoria in Scotland.

Mr. FREDERICK WHYTE asked the Secretary for Scotland whether Scotland's share of the sum available for the erection of sanatoria under Section 64 of the National Insurance Act would be apportioned strictly according to the population of different areas; and whether he could give an assurance that necessitous districts in the Highland and Islands would not be allowed to suffer owing to the sparseness of their population.—Mr. MCKINNON WOOD replied: The matter is now under the consideration of the Local Government Board for Scotland in view of the terms of the section referred to, and my honourable friend may rest assured that the varying circumstances and conditions of different localities in Scotland will not be overlooked.

BOOKS, ETC., RECEIVED.

BAILLIÈRE, TINDALL, AND COX, London.

Acromegaly. A Personal Experience. By Leonard Portal Mark, M.D., late President of the West London Medico-Chirurgical Society, and Pathological Draughtsman to St. Bartholomew's Hospital. Price 7*s.* 6*d.* net.

Lessons on Massage. By Margaret D. Palmer, formerly Masseuse and Manager of the Massage Department of the London Hospital, and Instructor of Massage to the Nursing Staff. Fourth edition. Price 7*s.* 6*d.* net.

CASSELL AND COMPANY, LIMITED, London, New York, Toronto, and Melbourne.

Problems of Sex. By Professor J. Arthur Thomson (University of Aberdeen), and Professor Patrick Geddes (University of St. Andrews), authors of "The Evolution of Sex." ("New Tracts for the Times.") Price 6*d.* net.

National Ideals and Race Regeneration. By the Rev. R. F. Horton, M.A., D.D. Price 6*d.* net.

Womanhood and Race Regeneration. By Mary Scharlieb, M.D., M.S. Price 6*d.* net.

Appointments.

Successful applicants for Vacancies, Secretaries of Public Institutions, and others possessing information suitable for this column, are invited to forward to THE LANCET *Office, directed to the Sub-Editor, not later than 9 o'clock on the Thursday morning of each week, such information for gratuitous publication.*

BISHOP, E. STANMORE, F.R.C.S. Eng., has been appointed Honorary Consulting Surgeon to the Victoria Memorial Jewish Hospital, Manchester.

BROWN, R. CUNYNGHAM, M.D. Durh., has been appointed Deputy Commissioner in Lunacy for Scotland.

BUTLER, WILLIAM, M.B., M.S. Glasg., has been appointed Deputy Medical Officer of Health to the London County Council.

CAMPBELL, G. F., M.B., B.S. R.U.I., has been appointed Certifying Surgeon under the Factory and Workshop Acts for the Bangor District of the county of Down.

MCGREGOR, J. G., M.B., B.S. Aberd., has been appointed Certifying Surgeon under the Factory and Workshop Acts for the Castletown District of the county of Caithness.

MEADEN, CHARLES, M.D., B.S. Durh., has been appointed Medical Officer for the Fremington, Newton Tracey, and Tawstock Districts by the Barnstaple (Devon) Board of Guardians.

O'HARA, M. C., L.R.C.P. & S. Irel., has been appointed Certifying Surgeon under the Factory and Workshop Acts for the Clara District of King's County.

PEREIRA, JOSEPH ANTHONY WENCESLAUS, M.D. Brux., L.R.C.P. Lond., M.R.C.S., has been appointed Surgeon to the Exeter Lying-in Charity.

PRICE, PHILIP SEYMOUR, M.R.C.S., L.R.C.P. Lond., has been appointed Assistant Physician to the Margaret-street Hospital for Consumption.

SEDDON, ALBIN, L.R.C.P. & S. Edin., L.F.P.S. Glasg., D.P.H. Edin., has been appointed Medical Officer of Health of Frome (Somerset).

THOMPSON, PETER, M.D. Vict., has been appointed Dean of the Medical Faculty of Birmingham University.

TURNBULL, ROBERT CYRIL, M.D. Lond., has been appointed Medical Superintendent at the New Asylum, Colchester.

Vacancies.

For further information regarding each vacancy reference should be made to the advertisement (see Index).

ABERDEEN, KINGSEAT ASYLUM.—Assistant Medical Officer. Salary £150 per annum, with board, &c.

AGRA, UNITED PROVINCES, INDIA, DUFFERIN HOSPITALS AND FEMALE MEDICAL SCHOOL.—Female Senior Doctor. Salary £26 13*s.* 4*d.* per mensem, with free quarters.

ALBERT DOCK HOSPITAL, Connaught-road, E.—Senior House Surgeon. Salary £100 per annum, with board, residence, and washing. Also House Surgeon. Salary £50 per annum, with board, residence, and washing. Each for six months.

BARNSLEY, BECKETT HOSPITAL.—Second House Surgeon, unmarried. Salary £100 per annum and all found.

BARROW-IN-FURNESS, NORTH LONSDALE HOSPITAL.—House Surgeon. Salary £100 per annum, with board and attendance.

BIRMINGHAM AND MIDLAND EYE HOSPITAL.—Second and Third House Surgeons. Salaries £80 and £75 per annum respectively, with board, rooms, and laundry.

BIRMINGHAM AND MIDLAND HOSPITAL FOR SKIN AND URINARY DISEASES.—Clinical Assistant. Salary at rate of 52 guineas per annum.

BRADFORD CHILDREN'S HOSPITAL.—House Surgeon. Salary £100 per annum.

BRADFORD CITY BABIES' WELCOMES.—Medical Officer (female). Salary £250 per annum.

BRENTFORD UNION INFIRMARY, WORKHOUSE AND SCHOOLS.—Second Assistant to Medical Superintendent, unmarried. Salary £125 per annum, with apartments, rations, washing, &c.

BRISTOL EYE HOSPITAL.—House Surgeon. Salary £80 per annum, with board and residence.

BRISTOL ROYAL HOSPITAL FOR SICK CHILDREN AND WOMEN.—Junior Resident Officer. Salary £90 per annum, with rooms and attendance.

BURY ST. EDMUNDS, WEST SUFFOLK GENERAL HOSPITAL.—House Surgeon, unmarried. Salary £100 per annum, with board, lodging, and laundry

BUXTON, DERBYSHIRE, DEVONSHIRE HOSPITAL.—Pathologist. Salary at rate of £250 per annum.

CAMBRIDGE, ADDENBROOKE'S HOSPITAL.—House Physician. Salary £80 per annum, with board, residence, and laundry.

CANCER HOSPITAL (FREE), Fulham-road, S.W.—Assistant Pathologist. Salary £350 per annum. Also House Surgeon for six months. Salary £70 per annum.

CARLISLE NON-PROVIDENT DISPENSARY.—Resident Medical Officer. Salary £150 per annum, with apartments.

CITY OF LONDON HOSPITAL FOR DISEASES OF THE CHEST, Victoria Park, E.—Clinical Assistant.

CLIFTON, YORK, NORTH RIDING ASYLUM.—Second Assistant Medical Officer. Salary £150 per annum, with board, apartments, washing, and attendance.

COVENTRY AND WARWICKSHIRE HOSPITAL.—Junior House Surgeon. Salary £90 per annum, with rooms, board, washing, and attendance.

DEWSBURY AND DISTRICT GENERAL INFIRMARY.—House Surgeon. Salary £120 per annum, with board, residence, and laundry.

DORCHESTER COUNTY ASYLUM.—Second Assistant Medical Officer. Salary £200 per annum, with board, &c.

DORCHESTER, DORSET COUNTY HOSPITAL.—House Surgeon, unmarried. Salary £100 per annum, with board and residence.

DREADNOUGHT HOSPITAL, Greenwich.—Two House Physicians and Two House Surgeons, each for six months. Salary £50 per annum, with board, residence, and washing. Also Medical Registrar.

DUDLEY, GUEST HOSPITAL.—Senior Resident Medical Officer. Salary £100 per annum, with board, residence, attendance, and washing.

DUNDEE ROYAL INFIRMARY.—Medical Assistants.

EAST LONDON HOSPITAL FOR CHILDREN, Shadwell, E.—Clinical Assistant.

EAST LONDON HOSPITAL FOR CHILDREN AND DISPENSARY FOR WOMEN, Shadwell, E.—House Physician. Also House Surgeon. Salary at rate of £75 per annum in each case, with board, residence, laundry, &c.

EVELINA HOSPITAL FOR SICK CHILDREN, Southwark, London, S.E.—House Physician. Salary at rate of £75 per annum, with board, residence, and washing. Also Clinical Assistants.

FRIMLEY, BROMPTON HOSPITAL SANATORIUM.—Medical Superintendent. Salary £500 per annum, with board and residence.

GREAT NORTHERN CENTRAL HOSPITAL, Holloway-road, N.—Surgeon.

GREENOCK INFIRMARY.—Assistant House Surgeon. Salary £40 per annum, with residence.

HEMEL HEMPSTEAD, WEST HERTS HOSPITAL.—Resident Medical Officer. Salary £100 per annum, with rooms, board, and washing.

HEREFORDSHIRE GENERAL HOSPITAL.—House Surgeon, unmarried. Salary £120 per annum, with board, apartments, and washing.

HOSPITAL FOR CONSUMPTION AND DISEASES OF THE CHEST, Brompton, S.W.—Assistant Physician.

HOSPITAL FOR SICK CHILDREN, Great Ormond-street, W.C.—House Surgeon, unmarried, for six months. Salary £30, with board, residence, &c. Also Assistant Casualty Medical Officer, unmarried, for six months. Salary £30, with board and residence, &c.

JERSEY POOR-HOUSE AND INFIRMARY (HÔPITAL-GÉNÉRAL).—Medical Officer. Salary £250 per annum.

LIVERPOOL HOSPITAL FOR CANCER AND SKIN DISEASES, Myrtle-street.—Honorary Surgeon.

LIVERPOOL, STANLEY HOSPITAL.—House Surgeon.

LOUGHBOROUGH AND DISTRICT GENERAL HOSPITAL AND DISPENSARY.—Resident House Surgeon. Salary £120 per annum, with rooms, attendance, board, and washing.

MACCLESFIELD GENERAL INFIRMARY.—Junior House Surgeon. Salary £80 per annum, with board and residence.

MANCHESTER CORPORATION.—Assistant Medical Officer of Health. Salary £250 per annum, with board, lodging, and residence.

MERTHYR TYDFIL UNION WORKHOUSE.—Assistant Medical Officer. Salary £150 per annum, with apartments, rations, laundry, and attendance.

MILLER GENERAL HOSPITAL FOR SOUTH-EAST LONDON, Greenwich-road, S.E.—Senior and Junior House Surgeon for six months. Salaries at rate of £100 and £85 per annum respectively, with board, attendance, and laundry.

NAVAL FORCES IN THE UNITED KINGDOM.—Dental Surgeon. Salary £1 per day.

NORWICH, NORFOLK AND NORWICH HOSPITAL.—Casualty Officer, unmarried, for six months. Salary £60 per annum, with board, lodging, and washing.

PRESTON ROYAL INFIRMARY.—Senior and Junior House Surgeons, unmarried, for six months. Salaries £80 and £60 per annum respectively, with board, residence, and washing.

READING, ROYAL BERKSHIRE HOSPITAL.—Medical Registrar, Surgical Registrar, and Pathologist. Salary by arrangement.

ROTHERHAM HOSPITAL AND DISPENSARY.—Assistant House Surgeon. Salary £80 per annum, with board, lodging, and washing.

ROYAL EAR HOSPITAL, Soho.—House Surgeon, non-resident. Salary £40 per annum. Also Honorary Assistant Anæsthetist.

ROYAL HALIFAX INFIRMARY.—Senior House Surgeon, unmarried, Salary £120 per annum, with residence, board, and washing. Also Third House Surgeon, unmarried. Salary £80 per annum, with residence, board, and washing.

ROYAL HOSPITAL FOR DISEASES OF THE CHEST, City-road, London, E.C.—House Physician for six months. Salary at rate of £60 per annum, with board, lodging, and washing.

ROYAL NAVAL MEDICAL SERVICE.—Fifteen Appointments.

ROYAL WESTMINSTER OPHTHALMIC HOSPITAL, King William-street, West Strand, W.C.—Radiographer. Salary 25 guineas per annum.

SHEFFIELD ROYAL INFIRMARY.—Junior Resident Medical Officer. Salary £60 per annum.

SHEFFIELD UNIVERSITY.—Demonstrator in Experimental Physiology. Salary £200 per annum.

SHREWSBURY, SALOP INFIRMARY (COUNTY HOSPITAL).—House Physician. Salary at rate of £70 per annum, with board and apartments.

SINGAPORE MUNICIPALITY INFECTIOUS DISEASES HOSPITAL, STRAITS SETTLEMENTS.—Resident Medical Officer. Salary £400 per annum with free quarters.

SOUTHAMPTON WORKHOUSE INFIRMARY, Shirley Warren.—Resident Assistant Medical Officer. Salary £130 per annum, with apartments, rations, washing, and attendance.

STAFFORD, STAFFORDSHIRE GENERAL INFIRMARY.—House Physician. Salary £82 per annum, with board, residence, and laundry.

SUNDERLAND CHILDREN'S HOSPITAL.—Resident Medical Officer for six months. Salary £80 per annum, with board, residence, and laundry.

SUNDERLAND ROYAL INFIRMARY.—Two Junior House Surgeons and House Physician for six months. Salary £80 per annum in each case, with board, residence, and laundry.

TEIGNMOUTH HOSPITAL, S. DEVON.—House Surgeon. Salary £100 per annum, with board, lodging, and laundry.

TUNBRIDGE WELLS, ROYAL BOROUGH.—Medical Officer of Health. Salary £500 per annum.

WANDSWORTH UNION.—District Medical Officer. Salary £100 per annum.

WESTERN GENERAL INFIRMARY, Marylebone-road, N.W.—Honorary Physician.

WOLVERHAMPTON AND STAFFORDSHIRE GENERAL HOSPITAL.—Resident Surgical Officer. Salary £125 per annum, with board, apartments, and laundry. Also Resident Medical Officer. Salary at rate of £100 per annum, with board, rooms, and laundry.

YORKSHIRE, NORTH RIDING COUNTY COUNCIL EDUCATION COMMITTEE.—Senior Assistant School Medical Officer. Salary £300 per annum.

THE Chief Inspector of Factories, Home Office, London, S.W., gives notice of vacancies for Certifying Surgeons under the Factory and Workshop Acts at Tranent, in the county of Haddington; and at Holywood, in the county of Down.

Births, Marriages, and Deaths.

BIRTHS.

BENNETT.—On March 10th, at East Bergholt, Suffolk, the wife of H. G. Bennett, M.B., of a daughter.

WINTER.—On March 11th, at John of Gaunt's, Lincoln, the wife of Edward Stuart Winter, M.R.C.S. Eng., L.R.C.P. Lond., of a daughter.

MARRIAGES.

DONALDSON—BERESFORD.—On March 7th, at the Church of St. Peter and St. Paul, Harlington, Middlesex, Sam Donaldson, L.R.C.P., M.R.C.S., to Helen Maud, younger daughter of Lieutenant-Colonel G. W. Beresford.

MCCLURE—BRYCE.—On March 9th, at Brompton Parish Church, James McClure, M.D., F.R.C.S., to Annie Margaret Jardine (Rita), only daughter of the late Charles Chalmers Bryce and of Mrs. Bryce.

MANBY—BRUCE.—On March 12th, at St. Andrew's, Westminster, E. P. Manby, M.D., D.P.H., to Mary, widow of C. W. A. Bruce, F.L.S.

DEATHS.

LAMBKIN.—On March 8th, at Bloemfontein, Colonel F. J. Lambkin, R.A.M.C.

STEVENS.—On March 7th, 1912, at Tunbridge Wells, Emma, wife of G. J. B. Stevens, aged 52.

N.B.—A fee of 5s. is charged for the insertion of Notices of Births, Marriages, and Deaths.

Notes, Short Comments, and Answers to Correspondents.

WHO WAS DR. WINTER?

To the Editor of THE LANCET.

SIR,—In your leading article last week on the modern interpretation of the Hippocratic Oath you refer to the exchange of bitter epigrams between Dr. George Cheyne and Dr. Winter, as well as to Dr. Garth's well-known "Dispensary." Dr. George Cheyne is obviously the physician (1671-1743) to whom a small place is allotted in the National Dictionary of Biography, but Dr. Winter I cannot trace. Who was Dr. Winter? I am, Sir, yours faithfully,

March 11th, 1912. M.D.

*** Dr. Winter is only known to us as the author of the following verses addressed to Dr. Cheyne, in reference to that physician's advocacy of vegetarianism:—

Dr. Winter to Dr. Cheyne.

Tell me from whom, fat-headed Scot,
Thou didst thy system learn;
From Hippocrate thou hast it not,
Nor Celsus nor Pitcairn.

Suppose we own that milk is good
And say the same of grass;
The one for babes is only food,
The other for an ass.

Doctor! one new prescription try
(A friend's advice forgive):
Eat grass, reduce thyself, and die;
Thy patients then may live.

To this attack Dr. Cheyne made the following spirited *riposte*:—

Dr. Cheyne to Dr. Winter.

My system, doctor, is my own,
No tutor I pretend;
My blunders hurt myself alone,
But yours your dearest friend.

Were you to milk and straw confined,
Thrice happy might you be;
Perhaps you might regain your mind,
And from your wit get free.

I can't your kind prescription try,
But heartily forgive;
'Tis natural you should bid me die,
That you yourself may live.

The verses are far neater than is usual in this kind of controversy.—ED. L.

THE PRUDENTIAL ASSURANCE CO., LIMITED.

THE report for 1911 has just been issued. The total number of policies in force in both the ordinary and industrial branches, taken together, numbered at Dec. 31st, 1911, 19,943,441, as against 19,724,323 at Dec. 31st, 1910, an increase of 219,118 policies during the year. In the previous financial year there had been an increase of 466,290 policies during the year. The premiums for 1911 amounted to £12,443,676, as against £12,232,438 for 1910, an increase of £211,238. In the previous year there had been an increase of £350,561. The assets of the company for 1911 amounted to £81,239,682, as compared with £77,529,226 for 1910, an increase of £3,710,456. In the previous year there had been an increase of £3,327,525. The directors have continued the policy of writing down certain securities. It is curious to note how constant the number of deaths in the ordinary branch remained in the two years of 1910 and 1911—viz., 8465 as compared with 8471. The directors announce an increase in the rate of bonus of both branches, and they regret the deaths of two of their colleagues during the year—viz., Mr. John Whately Simmonds and Sir Henry Harben, president of the company. The vacancy in the directorate caused by the death of Mr. Simmonds has been filled by the appointment of Surgeon-Lieutenant-Colonel Horatio Robert Odo Cross, a qualified shareholder, and his election will be submitted to the shareholders for confirmation. Mr. Frederick Schooling has, after 45 years' service with the company, retired from the office of joint manager and actuary, and has been appointed to a seat on the board.

M. and E. S. P.—Electrolysis is certainly the only permanent method of removing hairs. There are various preparations which temporarily remove superfluous hair, but some of them may irritate the skin in so doing, and the hair will certainly return. We believe many who are afflicted in this way now shave periodically and are quite satisfied, defying the old idea that shaving greatly increases the growth. It is improbable that any external remedy will be found capable of removing hairs permanently; and any internal remedy would probably remove the hair of the head as well. This subject was dealt with in an article in THE LANCET of April 11th, 1908.

ERRATUM.—In the report of the Far Eastern Association of Tropical Medicine in THE LANCET of March 9th an error occurs in the statement (p. 674) of Messrs. Burroughs and Wellcome's exhibits. The words "and soamin" were omitted. It is not "epinine" (which is a synthetic substance allied in properties and chemical formula to the suprarenal active principle) but "soamin" that is used for syphilis and trypanosomiasis.

COMMUNICATIONS not noticed in our present issue will receive attention in our next.

A DIARY OF CONGRESSES.

WE shall publish this diary from time to time that our readers may have under their hands the dates of the approaching scientific Congresses. It is unnecessary to issue the lists of all these functions week by week, and we propose to make only such gatherings as will occur in the immediate future the subject of regular announcement. The following Congresses, Conferences, and Exhibitions are announced for March, April, and May:—

March 23rd-April 4th (London, Royal Agricultural Hall).—International Smoke Abatement Exhibition.
April 1st and 2nd (Milan).—Italian National Convention upon the Sexual Question.
,, (London).—First Congress of Pure Food and Health Society of Great Britain.
,, 1st-7th (Tunis).—Twenty-second Congress of French-speaking Alienists and Neurologists.
,, 8th-13th (Rome).—Seventh International Congress of Dermatology and Syphilology.
,, 8th-15th (Johannesburg).—Thirteenth South African Medical Congress.
,, 9th-11th (Paris).—Congress of Physiotherapy for French-speaking Physicians.
,, 9th (Berlin).—Eleventh Congress of the German Society for Orthopædic Surgery.
,, 9th-13th (Giessen).—Congress on Study of Families, Inheritance, and Race Hygiene.
,, 10th-13th (Berlin).—Forty-first Congress of the German Surgical Society.
,, 14th (Berlin).—Eighth Congress of the German Röntgen Society.
,, 14th-20th (Rome).—Seventh International Congress on Tuberculosis.
,, 15th-18th (Wiesbaden).—Twenty-ninth German Congress for Internal Medicine.
,, 21st-24th (Munich).—Twenty-sixth Meeting of the Anatomical Society.
,, (London, Olympia).—Ideal Homes Exhibition.
May 7th-17th (Washington).—Ninth International Red Cross Conference.
,, 13th (London, Guildhall).—Conference on Diet in Schools.
,, 23rd (opens) (Philadelphia).—Twelfth International Congress on Navigation.
,, 23rd-25th (Hanover).—Nineteenth Meeting of the Union of German Laryngologists.
,, 25th-27th (Paris).—International Musical Festival.
,, 26th-28th (Paris).—National Conference the "Gouttes de Lait."
Whitsuntide (Portrush).—British Esperanto Congress
May 27th-June 1st (London).—Eighteenth International Congress of Americanists.
,, 29th-31st (Berlin).—Fifteenth Session of the German Society for Gynæcology.
,, (London).—International Horticultural Exhibition.
May to October (London, Earl's Court).—Shakespeare's England.

METEOROLOGICAL READINGS.

(Taken daily at 8.30 a.m. by Steward's Instruments.)

THE LANCET Office, March 13th, 1912.

Date.	Barometer reduced to Sea Level and 32° F.	Direction of Wind.	Rain fall.	Solar Radio in Vacuo.	Maximum Temp. Shade.	Min. Temp.	Wet Bulb.	Dry Bulb.	Remarks.
Mar. 7	29·89	N.W.	...	89	52	38	39	40	Fine
,, 8	29·82	S.	0·01	65	49	40	42	44	Overcast
,, 9	29·73	S.W.	0·09	97	52	43	45	46	Cloudy
,, 10	29·66	E.	...	85	55	42	45	47	Cloudy
,, 11	29·94	S.E.	...	72	49	40	41	41	Foggy
,, 12	30·29	S.	...	60	50	39	40	40	Foggy
,, 13	30·13	S.W.	0·07	57	53	39	47	48	Raining

The following journals, magazines, &c., have been received:—
Journal of Genetics, Child, Annali di Medicina Navale e Coloniale, American Journal of Medical Sciences, Medico-legal Journal (New York), Bulletins et Mémoires de la Société de Radiologie Médicale de Paris, Yale Medical Journal, Monthly Cyclopedia, Pharmaceutical Journal, Dublin Journal of Medical Science, Æsculape, Journal of State Medicine, La Clinique Ophtalmologique, London Hospital Gazette, Tuberculosis, Biometrika, &c.

Medical Diary for the ensuing Week.

SOCIETIES.

ROYAL SOCIETY, Burlington House, London, W.

THURSDAY.—Lord Rayleigh, O.M.: On the Self-induction of Electric Currents in a Thin Anchor-ring.—Hon. R. J. Strutt: The After-luminosity of Electric Discharge in Hydrogen Observed by Hertz.—Prof. J. H. Poynting: On the Changes in the Dimensions of a Steel Wire when Twisted, and on the Pressure of Distortional Waves in Steel.—Mr. H. S Patterson, Mr. R. S. Cripps, and Mr. R. Whytlaw-Gray: The Critical Constants and Orthobaric Densities of Xenon (communicated by Sir William Ramsay, K.C.B.).—Mr. W. A. Harwood and Mr. J. E. Petavel: Experimental Work on a New Standard of Light.—Mr. J. A. Crowther: On the Distribution of the Scattered Röntgen Radiation (communicated by Prof. Sir J. J. Thomson).—Mr. E. A. Owen: The Passage of Homogeneous Röntgen Rays through Gases (communicated by Prof. Sir J. J. Thomson).—Mr. J. C. Chapman: Fluorescent Röntgen Radiation from Elements of High Atomic Weight (communicated by Prof. Sir J. J. Thomson).—Mr. J. A. Gray: The Nature of the γ Rays excited by β Rays (communicated by Prof. E. Rutherford).

ROYAL SOCIETY OF MEDICINE, 15, Cavendish-square, W. (temporary address during building of new house).

TUESDAY.

THERAPEUTICAL AND PHARMACOLOGICAL SECTION (Hon. Secretaries—H. Charles Cameron, H. H. Dale): at 4.30 P.M.

Papers:

Sir Lauder Brunton, Bt., F.R.S.: Ludwig's and Other Theories of the Secretion of Urine and the Action of Diuretics.

Dr. J. A. Shaw-Mackenzie: Certain Reactions of the Blood in Carcinoma (and Other Conditions) with Suggestions on Treatment.

PATHOLOGICAL SECTION (Hon. Secretaries—J. C. G. Ledingham, A. E. Boycott): at 8.30 P.M.

Annual General Meeting.

Communications:

Dr. C. Russ: An Improved Method for Opsonic Estimations (with demonstration).

Dr. H. Warren Crowe: The Incidence of Streptococci in Urine.

Dr. H. C. Ross: The Mitotic Figures Induced in Lymphocytes by Auxetics (with demonstration).

Dr. W. Nicoll: The Blood-volume of Dogs Infected with the Hook-worm (Anchylostoma Caninum).

Dr. A. E. Boycott and Dr. C. Price-Jones: Experimental Trypanosome Anæmia.

Dr. A. E. Boycott and Dr J. H. Ryffel: The Action of Diuretics in Experimental Nephritis.

Dr. H. R. Dean: A Case of Pneumococcal Ulcerative Endocarditis.

WEDNESDAY.

CLINICAL SECTION (Hon. Secretaries: James Galloway, Charles H. Fagge): at 5 P.M.

Special Meeting at the Medical School, University College Hospital, Gower-street, W.C.

Professor Einthoven (Leyden): Observations of the Movements of the Heart by Means of Electro cardiograms.

Miss Florence Buchanan: Experimental Observations on this Subject.

Dr. James Mackenzie, Dr. Thomas Lewis, and others will Discuss the Clinical Use of this Method.

Those desirous of joining in the discussion are requested to communicate with the Hon. Secretaries of the Section.

THURSDAY.

DERMATOLOGICAL SECTION (Hon. Secretaries—J. H. Sequeira, Wilfred Fox), at 11, Chandos-street, W.: at 5 P.M.

Demonstration of Cases:

Dr. Bunch: Congenital Xanthoma.

Dr. Pernet: Xantho-erythrodermia Perstans (private case).

Dr. Whitfield: (1) Section of Skin of Kitten showing Ringworm Fungus; (2) Culture from Hair of Child Infected by the Kitten.

Dr. Sequeira: (1) Case for Diagnosis; (2) Nævus Vascularis. And other Cases.

NEUROLOGICAL SECTION (Hon. Secretaries—Wilfred Harris, T. Grainger Stewart): at 8.30 P.M.

Clinical Meeting at the National Hospital, Queen-square, W.C.

Cases

Will be shown by Dr. 'Ormerod, Dr. Tooth, Dr. James Taylor, Dr. Risien Russell, Dr. Batten, Dr. Donald Hall, Dr. Turney, Dr. Prentice, and others.

FRIDAY.

SECTION FOR THE STUDY OF DISEASE IN CHILDREN (Hon. Secretaries—T. R. Whipham, H. S. Clogg, Percy G. Lewis), at 11, Chandos-street, W.: at 4.30 P.M.

Cases:

Dr. J. L. Bunch: Leucodermia, Melanodermia, and Premature Canities. And other Cases.

Paper:

Dr. A. F. Hertz: Constipation in Childhood, with epidiascope demonstration.

EPIDEMIOLOGICAL SECTION (Hon. Secretaries—W. H. Hamer, G. S. Buchanan): at 8.30 P.M.

Paper:

Dr. Miles B. Arnold: The Relation of Housing to Hospital Isolation and to "Return Cases" of Scarlet Fever.

MEDICO-LEGAL SOCIETY, 11, Chandos-street, Cavendish-square, W.

TUESDAY.—8.30 P.M., Dr. S. Melville: State Regulation of Vice.

ROYAL METEOROLOGICAL SOCIETY, Institution of Civil Engineers, Great George-street, Westminster, S.W.

WEDNESDAY.—7.30 P.M., Prof. O. Pettersson: The Connexion between Hydrographical and Meteorological Phenomena (illustrated by lantern slides).

LECTURES, ADDRESSES, DEMONSTRATIONS, &c.

ROYAL COLLEGE OF SURGEONS OF ENGLAND, Lincoln's Inn Fields, W.C.

MONDAY.—5 P.M., Prof. J. W. H. Eyre: The Pathology and Diagnosis of Tuberculosis of the Conjunctiva.

WEDNESDAY.—5 P.M., Dr. L. G. Parsons: The Mechanism and Treatment of Shock.

FRIDAY.—5 P.M., Mr. H. T. Gray: The Mechanism and Treatment of Shock.

MEDICAL GRADUATES' COLLEGE AND POLYCLINIC, 22, Chenies-street, W.C.

MONDAY.—4 P.M., Dr. S. E. Dore: Clinique (Skin). 5.15 P.M., Lecture:—Mr. P. J. Freyer: Stone in the Bladder—its Modern Treatment.

TUESDAY.—4 P.M., Dr. A. Jex-Blake: Clinique (Medical). 5.15 P.M., Lecture:—Dr. N. Raw: Tuberculosis of the Genito-urinary Tract and its Treatment.

WEDNESDAY.—4 P.M., Mr. G. Taylor: Clinique (Surgical). 5.15 P.M., Lecture:—Mr. A. Lane: Chronic Intestinal Stasis.

THURSDAY.—4 P.M., Sir A. Pearce Gould, K.C.V.O.: Clinique (Surgical). 5.15 P.M., Lecture:—Dr. R. M. Leslie: Enteroptosis and its Treatment.

FRIDAY.—4 P.M., Mr. G. J. Jenkins: Clinique (Ear, Nose, and Throat).

POST-GRADUATE COLLEGE, West London Hospital, Hammersmith-road, W.

MONDAY.—10 A.M., Dr. Simson: Diseases of Women. 10.30 A.M., Surgical Registrar: Demonstration of Cases in Wards. 12 noon, Dr. Bernstein: Pathological Demonstration. 2 P.M., Medical and Surgical Clinics. X Rays. Operations. 2.30 P.M., Mr. Dunn: Diseases of the Eye. 5 P.M., Lecture:—Dr. Beddard: Practical Medicine. (Lecture VI.)

TUESDAY.—10 A.M., Dr. Robinson: Gynæcological Operations. 11 A.M., Mr. Etherington-Smith: Demonstration of Minor Operations. 2 P.M., Medical and Surgical Clinics. X Rays. Operations. Dr. Davis: Diseases of the Throat, Nose, and Ear. 2.30 P.M., Dr. Abraham: Diseases of the Skin. 5 P.M., Lecture:—Dr. Low: Yellow Fever.

WEDNESDAY.—10 A.M., Dr. Saunders: Diseases of Children. Dr. Davis: Operations of the Throat, Nose, and Ear. 2 P.M., Medical and Surgical Clinics. X Rays. Operations. Mr. B. Harman: Diseases of the Eye. Dr. Simson: Diseases of Women.

THURSDAY.—2 P.M., Medical and Surgical Clinics. X Rays. Operations. 2.30 P.M., Mr. Dunn: Diseases of the Eye.

FRIDAY.—10 A.M., Dr. Robinson: Gynæcological Operations. 2 P.M., Medical and Surgical Clinics. X Rays. Operations. Dr. Davis: Diseases of the Throat, Nose, and Ear. 2.30 P.M., Dr. Abraham: Diseases of the Skin.

SATURDAY.—10 A.M., Dr. Saunders: Diseases of Children. Dr. Davis: Operations of the Throat, Nose, and Ear. Mr. B. Harman: Diseases of the Eye. 2 P.M., Medical and Surgical Clinics. X Rays. Operations.

NORTH-EAST LONDON POST-GRADUATE COLLEGE, Prince of Wales's General Hospital, Tottenham, N.

MONDAY.—Clinics:—10.30 A.M., Surgical Out-patient (Mr. E. Gillespie). 2.30 P.M., Medical Out-patient (Dr. T. R. Whipham); Nose, Throat, and Ear (Mr. H. D. Gillies). 3 P.M., Clinical Pathology and Pathological Demonstration (Dr. W. H. Duncan).

TUESDAY.—Clinic; 2.30 P.M., Operations. Clinics:—Medical Out-patient (Dr. A. G. Auld).; Surgical (Mr. Howell Evans); Gynæcological (Dr. A. E. Giles). 3.30 P.M., Medical In-patient (Dr. A. J. Whiting). 4.30 P.M., Lecture:—Mr. H. W. Carson: The Treatment of Surgical Disorders of Digestion.

WEDNESDAY.—Clinics:—2 P.M., Throat Operations (Mr. Gillies). 2.30 P.M., Children's Out-patient (Dr. T. R. Whipham); Skin (Dr. G. N. Meachen): Eye (Mr. R. P. Brooks). 3 P.M., X Rays (Mr. W. Steuart); Clinical Pathology and Pathological Demonstration (Dr. W. H. Duncan). 5.30 P.M., Eye Operations (Mr. Brooks).

THURSDAY.—2.30 P.M., Gynæcological Operations (Dr. A. E. Giles). Clinics:—Medical Out-patient (Dr. A. J. Whiting); Surgical (Mr. Carson). 3 P.M., Medical In-patient (Dr. G. P. Chappel). 4.30 P.M., Lecture:—Dr. A. J. Whiting: The Recognition and Significance of Various Forms of Irregularity of the Pulse.

FRIDAY.—2.30 P.M., Operations. Clinics:—Medical, Out-patient (Dr. A. G. Auld); Surgical (Mr. E. Gillespie); Eye (Mr. R. P. Brooks). 3 P.M., Medical In-patient (Dr. R. M. Leslie); Clinical Pathology and Pathological Demonstration (Dr. W. H. Duncan).

LONDON SCHOOL OF CLINICAL MEDICINE, Dreadnought Hospital, Greenwich.

MONDAY.—2 P.M., Operations. 2.15 P.M., Mr. Turner: Surgery. 3.15 P.M., Sir Dyce Duckworth: Medicine. 4.30 P.M., Mr. R. Lake: Ear and Throat. Out-patient Demonstrations:—10 A.M., Surgical and Medical. 12 noon, Ear and Throat.

TUESDAY.—2 P.M., Operations. 3.15 P.M., Dr. R. Wells: Medicine. 2.15 P.M., Mr. R. Carling: Surgery. 4.15 P.M., Sir M. Morris: Diseases of the Skin. Out-patient Demonstrations:—10 A.M., Surgical and Medical. 12 noon, Skin. 2.15 P.M., Special Lecture: Mr. R. Carling: After-treatment of Abdominal Cases.

WEDNESDAY.—2 P.M., Operations. 2.15 P.M., Dr. F. Taylor: Medicine. 3.30 P.M., Mr. Cargill: Ophthalmology. Out-patient Demonstrations:—10 A.M., Surgical and Medical. 11 A.M., Eye.

THURSDAY.—2 P.M., Operations. 2.15 P.M., Dr. G. Rankin: Medicine. 3.15 P.M., Sir W. Bennett: Surgery. Out-patient Demonstrations:—10 A.M., Surgical and Medical. 12 noon, Ear and Throat. 4.30 P.M., Special Lecture:—Prof. Hewlett: Ultra-microscopic Causes of Disease.

FRIDAY.—2 P.M., Operations. 2.15 P.M., Sir J. Rose Bradford: Medicine. 3.15 P.M., Mr. McGavin: Surgery. Out-patient Demonstrations:—10 A.M., Surgical and Medical. 12 noon, Skin.
SATURDAY.—10 A.M., Radiography. 11 A.M., Dr. A. Davies: Pathological Demonstration. 2 P.M., Operations. Out-patient Demonstration:—10 A.M., Surgical and Medical. 11 A.M., Eye.

HOSPITAL FOR SICK CHILDREN, Great Ormond-street, W.C.
THURSDAY.—4 P.M., Lecture:—Dr. Poynton: Appendicitis in Childhood.

NATIONAL HOSPITAL FOR THE PARALYSED AND EPILEPTIC, Queen-square, Bloomsbury, W.C.
TUESDAY.—3.30 P.M., Clinical Lecture:—Dr. F. Buzzard: Myasthenia Gravis
FRIDAY.—3.30 P.M., Clinical Lecture:—Dr. F. Buzzard: Cases.

ST. JOHN'S HOSPITAL FOR DISEASES OF THE SKIN, 49, Leicester-square, W.C.
TUESDAY.—6 P.M., Dr. W. Griffith: Diseases of the Hair.

UNIVERSITY OF LONDON (UNIVERSITY COLLEGE), The Francis Galton Laboratory for National Eugenics.
TUESDAY.—8.30 P.M., Prof. K. Pearson: Social Problems, their Treatment, Past, Present, and Future. (Lecture VIII.)

LISTER INSTITUTE OF PREVENTIVE MEDICINE, Lecture Theatre of the Lister Institute, Chelsea Bridge-road, S.W.
TUESDAY.—5 P.M., Dr. W. Nicoll: Modern Aspects of Helminthology—General Bionomical Considerations, Nomenclature, Methods of Classification. (Lecture I.)
FRIDAY.—5 P.M., Dr. W. Nicoll: Modern Aspects of Helminthology—General Morphology and Biology of Trematodes and Cestodes. (Lecture II.)

ROYAL INSTITUTION OF GREAT BRITAIN, Albemarle-street, Piccadilly, W.
SATURDAY.—3 P.M., Prof. Sir J. J. Thomson: Molecular Physics. (Lecture V.)

ANCOATS HOSPITAL, Manchester.
THURSDAY.—4.15 P.M., Dr. E. B. Leech: Dropsy. (Post-Graduate Clinic.)

SALFORD ROYAL HOSPITAL.
THURSDAY.—4.30 P.M., Dr. F. E. Tylecote: "606." (Post-Graduate Course).

OPERATIONS.

METROPOLITAN HOSPITALS.

MONDAY (18th).—London (2 P.M.), St. Bartholomew's (1.30 P.M.), St. Thomas's (3.30 P.M.), St. George's (2 P.M.), St. Mary's (2.30 P.M.), Middlesex (1.30 P.M.), Westminster (2 P.M.), Chelsea (2 P.M.), Samaritan (Gynæcological, by Physicians, 2 P.M.), Soho-square (2 P.M.), Gt. Northern Central (2.30 P.M.), West London (2.30 P.M.), London Throat (9.30 A.M.), Royal Free (2 P.M.), Guy's (1.30 P.M.), Children, Gt. Ormond-street (9 A.M.), St. Mark's (2.30 P.M.), Central London Throat and Ear (Minor 9 A.M., Major 2 P.M.).

TUESDAY (19th).—London (2 P.M.), St. Bartholomew's (1.30 P.M.), St. Thomas's (3.30 P.M.), Guy's (1.30 P.M.), Middlesex (1.30 P.M.), Westminster (2 P.M.), West London, (2.30 P.M.), University College (2 P.M.), St. George's (1 P.M.), St. Mary's (1 P.M.), St. Mark's (2.30 P.M.), Cancer (2 P.M.), Metropolitan (2.30 P.M.), London Throat (9.30 A.M.), Samaritan (9.30 A.M. and 2.30 P.M.), Throat, Golden-square (9.30 A.M.), Soho-square (2 P.M.), Chelsea (2 P.M.), Children, Gt. Ormond-street (9 A.M. and 2 P.M., Ophthalmic, 2 P.M.), Tottenham (2.30 P.M.), Central London Throat and Ear (Minor, 9 A.M., Major, 2 P.M.), Royal National Orthopædic (9.30 A.M. and 4 P.M.).

WEDNESDAY (20th).—St. Bartholomew's (1.30 P.M.), University College (2 P.M.), Royal Free (2 P.M.), Middlesex (1.30 P.M.), Charing Cross (3 P.M.), St. Thomas's 2 P.M.), London (2 P.M.), King's College (2 P.M.), St. George's (Ophthalmic, 1 P.M.), St. Mary's (2 P.M.), St. Peter's (2 P.M.), Samaritan (9.30 A.M. and 2.30 P.M.), Gt. Northern Central (2.30 P.M.), Westminster (2 P.M.), Metropolitan (2.30 P.M.), London Throat (9.30 A.M.), Cancer (2 P.M.), Throat, Golden-square (9.30 A.M.), Guy's (1.30 P.M.), Royal Ear (2 P.M.), Children, Gt. Ormond-street (9 A.M. and 9.30 A.M., Dental, 2 P.M.), Tottenham (Ophthalmic, 2.30 P.M.), West London (2.30 P.M.), Central London Throat and Ear (Minor, 9 A.M., Major, 2 P.M.).

THURSDAY 21st).—St. Bartholomew's (1.30 P.M.), St. Thomas's (3.30 P.M.), University College (2 P.M.), Charing Cross (3 P.M.), St. George's (1 P.M.), London (2 P.M.), King's College (2 P.M.), Middlesex (1.30 P.M.), St. Mary's (2.30 P.M.), Soho-square (2 P.M.), North-West London (2 P.M.), Gt. Northern Central (Gynæcological, 2.30 P.M.), Metropolitan (2.30 P.M.), London Throat (9.30 A.M.), Samaritan (9.30 A.M and 2.30 P.M.), Throat, Golden-square (9.30 A.M.), Guy's (1.30 P.M.), Royal National Orthopædic (9 A.M. and 3.30 P.M.), Royal Ear (2 P.M.), Children Gt. Ormond-street (9 A.M. and 2 P.M.), Tottenham (Gynæcological, 2.30 P.M.), West London (2.30 P.M), Central London Throat and Ear (Minor, 9 A.M., Major, 2 P.M.).

FRIDAY (22nd).—London (2 P.M.), St. Bartholomew's (1.30 P.M.), St. Thomas's (3.30 P.M.), Guy's (1.30 P.M.), Middlesex (1.30 P.M.), Charing Cross (3 P.M.), St. George's (1 P.M.), King's College (2 P.M.), St. Mary's (2 P.M.), Ophthalmic (10 A.M.), Cancer (2 P.M.), Chelsea (2 P.M.), Gt. Northern Central (2.30 P.M.), West London (2.30 P.M.), London Throat (9.30 A.M.), Samaritan (9.30 A.M. and 2.30 P.M.), Throat, Golden-square (9.30 A.M.), Royal National Orthopædic (3.30 P.M.), Soho-square (2 P.M.), Children, Gt. Ormond-street (9 A.M., Aural, 2 P.M.), Tottenham (2.30 P.M.), St. Peter's (2 P.M.)., Central London Throat and Ear (Minor, 9 A.M., Major, 2 P.M.).

SATURDAY (23rd).—Royal Free (9A.M.), London (2 P.M.), Middlesex (1.30 P.M.), St. Thomas's (2 P.M.), University College (9.15 A.M.), Charing Cross (2 P.M.), St. George's (1 P.M.), St. Mary's (10 A.M.), Throat, Golden-square (9.30 A.M.), Guy's (1.30 P.M.), Children, Gt. Ormond-street (9 A.M and 9.30 A.M.), West London (2.30 P.M.).

At the Royal Eye Hospital (2 P.M.), the Royal London Ophthalmic (10 A.M.), the Royal Westminster Ophthalmic (1.30 P.M.), and the Central London Ophthalmic (2 P.M.), Hospital operations are performed daily.

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The Milroy Lectures

ON

PARATYPHOID FEVER AND MEAT POISONING.

Delivered before the Royal College of Physicians of London

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LECTURE II.[1]

Delivered on March 5th.

PARATYPHOID (B) FEVER.

MR. PRESIDENT AND GENTLEMEN,—Comparatively few cases of illness caused by this organism have been recorded in England, although it has been calculated by Boycott that each year in London nearly a hundred cases of clinically enteric fever might be expected to be paratyphoid (B) fever. Several large epidemics and many isolated cases have been described in Germany, and the disease also appears to be prevalent in America and in France.

A small epidemic of 14 cases in Malta has recently been described by Babington; in seven of them the diagnosis was established by blood cultures. It is doubtful whether it occurs, and in any case it seems to be rare, in India and also in South Africa. It is difficult to form an opinion as to the actual prevalence of paratyphoid fever as compared with enteric fever; but the observations of Boycott indicate that in England about 3 per cent. of the cases which run the clinical course of enteric fever are really paratyphoid fever.

From the observations of Klinger, Fischer, and others in Germany, it would appear that the proportion of paratyphoid cases as compared with enteric fever cases is from 8 to 10 per cent.; and a statement by Wells (quoted by Boycott) indicates that about 10 per cent. of the enteric cases occurring in Chicago are really paratyphoid (B) fever. Practically nothing is known as to its seasonal prevalence. Of 10 cases recorded in England 1 occurred in January, 1 in March, 1 in July, 3 in August, 1 in September, and 3 in November. In a recent outbreak of 14 cases in Malta 12 were admitted to hospital in August and September.

DISTRIBUTION OF B. PARATYPHOSUS (B).

The bacillus is very rarely found in man except in patients suffering from paratyphoid (B) fever or in persons who have recently had an attack of paratyphoid (B) fever and are acute or chronic carriers. Savage, for example, examined the stools of a large number of healthy men and of typhoid patients without finding this organism. Bainbridge and O'Brien also carefully searched for it in the excreta of some 300 convalescent enteric cases without finding it on a single occasion. Indeed, this bacillus has practically never been found in England except in cases of illness clinically indistinguishable from enteric fever. English writers consider, therefore, that it occurs only in persons suffering from paratyphoid (B) fever (that is, an illness resembling enteric fever) or in those who have become carriers as a sequel of such an illness.

This view has been challenged by Conradi and by Hübener, who hold that the isolation of B. paratyphosus (B) from the blood or stools of a human being does not in the least indicate (in the absence of other evidence) that he has, or has had, paratyphoid fever. Their opinion is based upon observations as to the distribution of this bacillus in nature. Conradi found organisms described as "paratyphoid" bacilli in 29 out of 250 typhoid convalescents, in patients suffering from tuberculosis, and in healthy people.

Prigge and Sachs-Müke, who examined the stools of 5252 individuals, found "paratyphoid" bacilli in 60 cases apart from those actually suffering from paratyphoid fever. Similar bacilli have been obtained also by Hübener and others from sausages, meat, milk, and water; and Conradi noticed that food containing these bacilli could be consumed by human beings without ill-effect. They are disposed, therefore, to regard "paratyphoid" bacilli as harmless saprophytes widely distributed in man; but Conradi finds it difficult to account for their occasional lapses into virulence. These observations have been subjected to severe criticism.

In the first place, none of the bacilli appear to have been examined by either the absorption method or the complement deviation method, and there is no conclusive evidence that the organisms isolated by these observers were really B. paratyphosus (B). In some cases it is certain that they were not B. paratyphosus (B), since several strains described by them as "paratyphoid" bacilli when examined by the absorption method proved to be B. suipestifer.

Secondly, the evidence that these so-called "paratyphoid" bacilli even belong to the Salmonella group at all is at times incomplete. Some German writers apparently do not recognise that the human alimentary canal frequently contains bacilli which superficially resemble those of the Salmonella group, but which can be distinguished from them by adequate cultural tests and which are not agglutinated by paratyphoid (A) or (B), suipestifer or enteritidis (Gaertner) sera.

The existence of such organisms has been clearly demonstrated both by Morgan, by Savage, and by Bainbridge and O'Brien. In the course of his investigation into the bacteriology of infantile summer diarrhœa Morgan several times isolated bacilli which in their cultural characters differed from the Salmonella group only in one or two particulars. Some fermented cane sugar or salicin, others failed to ferment dulcite, and others formed indol. Similar organisms have been obtained by Savage and by Bainbridge and O'Brien, who further showed that these bacilli were not agglutinated by the sera of animals inoculated with B. paratyphosus (B), B. suipestifer, or B. enteritidis (Gaertner). In a subsequent paper Savage found that bacilli of this type, which he described as "pseudo-Gaertner" organisms, occur with considerable frequency in food of various kinds, especially sausages. These observations indicate the care which must be exercised in identifying any given organism as B. paratyphosus (B).

It is also noteworthy that the frequent occurrence of "paratyphoid" bacilli either in man or in food is apparently limited to one or two districts, more especially to the south-west of Germany; in other parts of Germany they are rarely found. Apart from these criticisms the observations of other writers go to prove that in Germany B. paratyphosus (B) is not widely distributed either in man or in food. This was the conclusion reached by Aumann as the result of a large number of observations on the occurrence of the Salmonella group in food and in the blood and excreta of man and of animals. His results are completely in accordance with those of Müller and others who examined the organs of healthy domestic animals shortly after they were slaughtered. The occurrence of organisms of the Salmonella group was infrequent and was almost invariably associated with outbreaks of disease in man.

The balance of evidence, therefore, is against the view put forward by Conradi and by Hübener. Fully identified and undoubted strains of B. paratyphosus (B) have practically never been isolated either from food or from the lower animals. Its distribution is limited to man, and its habitat is the alimentary canal (including the gall-bladder) of persons suffering from paratyphoid fever or of those who have become carriers after an attack of this disease.

CLINICAL FEATURES.

The clinical description already given of paratyphoid (A) fever is equally applicable to the disease caused by B. paratyphosus (B), as is evident from the descriptions given by Savage, Rolly, Gwyn, and others. Perforation, however, has not been observed, nor is there any record of the occurrence of forms of rash other than rose spots. Fatal hæmorrhage occasionally happens and relapses are not infrequent. Inflammation of the gall-bladder and periosteal abscesses have been met with as sequelæ. In the recent outbreak in Malta ten cases were very mild and four were clinically indistinguishable from enteric fever; one of the latter died. The duration of pyrexia varied from 4 to 30 days, the average being 17 days. Epistaxis occurred and rose spots were present in several cases; severe headache was a frequent and prominent symptom.

As a rule the illness is described as being clinically indistinguishable from enteric fever. Occasionally, however, the onset of the symptoms is more acute and the illness is

[1] Lecture I. was published in THE LANCET of March 16th, p. 705.

ushered in by a rigor or by vomiting, but after a day or two it falls into line with the more typical cases just described and runs a normal course of from two to three weeks. Two other symptoms are sometimes met with which are suggestive of the illness being paratyphoid rather than enteric fever. They are, first, the occurrence of labial herpes; and, secondly, the firmness of the spleen when felt during life as compared with its consistence in enteric fever. In epidemics of paratyphoid (B) fever in Germany these symptoms were noticed in a large proportion of the cases.

One small outbreak of acute gastro-enteritis caused by B. paratyphosus (B) has been recorded by Bainbridge and Dudfield. A similar outbreak described by Schottmüller (1904) and the recent outbreak at Wrexham (1911) were also attributed to B. paratyphosus (B), but the nature of the organism was not established by absorption tests in either of these outbreaks.

POST-MORTEM APPEARANCES.

Fatal cases are infrequent, and the post-mortem records are few in number. In a case described by Babington the Peyer's patches showed no sign of inflammation or ulceration. The large intestine was intensely inflamed throughout its whole length. The mucosa was studded thickly with minute ulcers, varying in size from a pin's head to a sixpence. The ulcers were largest and deepest in the cæcum. In other cases congestion of the lower part of the ileum and ulceration of Peyer's patches have been observed. In one of Savage's cases the lower 18 inches of the ileum were ulcerated; several ulcers presented sloughs, others appeared to be healing. The mesenteric glands were inflamed and the spleen was enlarged. The first four inches of the colon also contained ulcers.

MORTALITY.

In 120 cases recorded by Lenz the mortality was 3 per cent. It is probable that the mortality is low, but the number of cases hitherto met with in this country is too small to justify any very definite opinion on the question, more particularly since—accepting Boycott's calculations—the recorded cases represent only a very small fraction of those which escape recognition.

As regards the influence of previous inoculation against enteric fever on the mortality and severity of subsequent attacks of paratyphoid fever, it may be noted that in the Malta outbreak of paratyphoid (B) fever four cases had been inoculated against enteric fever; three were mild, one was severe. Three had not been inoculated; one was mild, one severe, and one fatal. Details were lacking as to the other seven cases.

DIAGNOSIS.

(1) *Isolation of the Bacillus.*

Paratyphoid (B) fever is a septicæmia, and the bacillus has on many occasions been isolated from the blood or stools during life, or from the internal organs after death.

The isolation of the organism is, indeed, the only certain means of diagnosing paratyphoid (B) fever, since the clinical symptoms are, as a rule, indistinguishable from those of enteric fever.

(2) *Serum Reactions.*

It was hoped at first that the serum reaction (Widal's test) might furnish a trustworthy and ready means of diagnosis; but unfortunately it sometimes yields quite inconclusive results. Its diagnostic value has been carefully examined by Boycott, who reached the conclusion that an accurate determination of the *ultimate* limit of the agglutinating power of the serum for organisms of known agglutinating capacity would, in the majority of cases, give reliable information as to the nature of the infection. Even under these circumstances, however, anomalous results are occasionally obtained, as Boycott pointed out; and when the agglutinating power of the patient's serum for B. typhosus or B. paratyphosus (B) is examined, as is frequently the case, only in two or three dilutions, none of which exceeds 1–100, the serum reaction ceases to have any value as a means of differentiating beween enteric and paratyphoid (B) fever. This is clear both from Boycott's observations and from those of Savage and of Bainbridge. Savage, for example, gives the serum reactions of a patient from whose stools B. paratyphosus (B) was isolated; B. typhosus was agglutinated up to a serum dilution of 1–300, B. paratyphosus (B) in a dilution of 1–500. In a routine examination of the serum for B. typhosus only, in the usual dilutions of 1–20, 1–50, and 1–100, this case would almost certainly have been regarded as one of enteric fever. Undoubtedly many cases which give a positive serum reaction for B. typhosus, when tested in a routine fashion and which are diagnosed as enteric fever, are really paratyphoid fever. In those instances in which the patient's serum agglutinates in high dilution both B. typhosus and B. paratyphosus (B) the absorption method would probably be of assistance in the making of a diagnosis.

Frequently, however, the patient's serum agglutinates B. paratyphosus (B) in very high dilution such as 1–5000 to 1–20000, whereas it fails to agglutinate B. typhosus in higher dilution than 1–100. A diagnosis of paratyphoid (B) fever may then be regarded as almost certain, even though the bacillus is not isolated. There are, however, cases of enteric fever in which the patient's serum agglutinates B. paratyphosus (B) in higher dilution than B. typhosus. Pratt, for example, records a case of enteric fever in which the serum reacted with B. paratyphosus (B) at 1–200 dilution and gave no reaction with B. typhosus at 1–10 dilution; blood cultures gave a pure culture of B. typhosus. An absolute diagnosis of paratyphoid (B) fever in a given case rests, therefore, upon two pieces of evidence—namely, the presence of the clinical symptoms characteristic of enteric fever, and the isolation of B. paratyphosus (B) from the patient. Failing the isolation of the bacillus, a probable diagnosis can often be made from the serum reaction of the patient.

EPIDEMIOLOGY.

Attention was first called to the existence of human paratyphoid (B) carriers by Lenz (1905–06). He recorded 6 cases, one of which was under observation for at least a year. Since then a considerable number of carriers have been met with. Brückner recently examined the excreta of 316 individuals who had had paratyphoid or enteric fever at least a year previously. Three of these were chronic carriers of B. paratyphosus (B), and two of them were excreting the bacilli three years after the original attack of illness. Similar cases have been recorded by Hamilton (5 cases), Mayer (10 cases), Prigge and Sachs-Müke (6 cases), and others. In all I have met with an account of 29 chronic carrier cases. An analysis of these brings out two striking facts. In the first place, 26 of the carriers were women (in one case the sex is not stated); and secondly, seven of them either were suffering from cholecystitis or had gall-stones. Forster and Kayser, indeed, isolated B. paratyphosus (B) from the gall-bladder of a woman post mortem; in this case gall-stones were present. Further, all the cases examined by Prigge and Sachs-Müke gave a positive serum reaction for B. paratyphosus (B). In these respects paratyphoid carriers show a striking resemblance to chronic typhoid carriers, which also predominate in the female sex, and are frequently associated with disease of the gall-bladder.

So far as can be judged from the literature, all these cases were chronic carriers; practically nothing is known as to the occurrence of acute carriers, although there is no reason to suppose that they do not occur. Apparently all the cases yet described have been fæcal carriers, and I can find no record of a urinary carrier of genuine B. paratyphosus (B). Most of them further resemble typhoid carriers in the constancy with which the bacilli are excreted from day to day, and the abundance in which they are found. They differ entirely, therefore, from the cases described by Conradi of the excretion of the "paratyphoid" bacilli; Conradi found that the bacilli were excreted on a single occasion only, and even then in very minute numbers.

The question of the capacity of paratyphoid (B) carriers to cause infection has, so far, received very little attention. Such evidence as we possess is of the same character as that in favour of the infectivity of typhoid carriers. As is well known, the capacity of the typhoid carrier to cause disease has been challenged by several epidemiologists, of whom Hamer is the most prominent. We may summarise, however, the few facts that are known which point to the direct causation of paratyphoid (B) fever by carriers.

1. While investigating an epidemic of enteric fever Wernicke (1907) found by bacteriological examination that 6 per cent. of the cases were paratyphoid (B) fever; the cause of the epidemic was traced to a milk-shop in which resided or worked several typhoid carriers and one paratyphoid (B) carrier. It was believed that the milk infected by these carriers was the cause of the combined outbreak.

2. Within the last year or two Sacquepée and Bellot have

published an account of an epidemic of paratyphoid (B) fever, and have given good reasons for attributing the source of the infection to a carrier. In a corps of 250 soldiers in France, 19 cases of paratyphoid (B) fever occurred in the course of eight days. The duration of the illness was from two to three weeks, and the clinical course was that of mild enteric fever; no deaths occurred. B. paratyphosus (B) was recovered from the fæces or urine of 12 cases, and all the cases gave a positive reaction for this bacillus. An inquiry into the cause of this infection made it clear that the water-supply could be excluded. It was found, however, that a man who cooked the food for these soldiers had suffered from paratyphoid fever a short time before the occurrence of the epidemic. His blood gave a positive reaction for B. paratyphosus (B), and this organism was isolated from his stools. Repeated examinations of his stools were made during some months, always with a positive result, and there can be no doubt that he was a paratyphoid carrier.

Although this scanty evidence does not justify the conclusion that carriers are the only, or even the actual, cause of paratyphoid fever, the carrier hypothesis is the most probable one yet adduced to account for its distribution. Unfortunately, opportunities for testing this hypothesis are infrequent in this country since paratyphoid fever is seldom recognised and is almost always sporadic.

No mode of infection other than by carriers has been demonstrated. Attempts to connect the illness of the patient with water-supplies or with animal diseases or with infection by animals have been unsuccessful. Nor is there any evidence that infection has been conveyed by flies, although B. paratyphosus (B) has been isolated on one occasion from the intestine of a fly (Nicoll).

The assumption that paratyphoid fever is spread by human carrier cases does not involve, of course, an absolutely direct infection. Indirect infection by means of milk has already been mentioned, and in the outbreak described by Sacquepée and Bellot some form of food infected by a carrier apparently caused the illness. Indirect infection of this kind is, of course, well known in the case of enteric fever.

SUMMARY.

It is clear from the preceding description that there is no real distinction between the disease caused by B. paratyphosus (A) and that caused by B. paratyphosus (B). The clinical symptoms and post-mortem appearances are practically identical; and in both cases the disease appears to be spread mainly, if not entirely, by human carriers. Both organisms usually give rise to an illness clinically resembling enteric fever, although very occasionally they set up acute gastro-enteritis. Further, the habitat of both organisms is the human alimentary canal. The only important points of difference between infection by B. paratyphosus (A) and by B. paratyphosus (B) consists in the varying response of the patient as regards the production of agglutinins in his serum. Up to the present most of the carriers of the paratyphoid (A) bacillus which have been recognised have been of the acute variety, whereas the carriers of B. paratyphosus (B) are chronic carriers. This apparent difference probably depends upon the special circumstances under which paratyphoid (A) fever in India has been studied.

We are fully justified, therefore, in describing as paratyphoid fever both the illness caused by B. paratyphosus (A) and also that caused by B. paratyphosus (B). It is desirable, however, at the present time to exclude from this category the cases of acute gastro-enteritis which have been caused by these two organisms on rare occasions.

It is interesting to notice the close analogy between paratyphoid and enteric fever from the clinical and epidemiological point of view. Broadly speaking, they differ only in the higher mortality and greater severity of enteric fever and in the character of the causal organisms.

The preventive treatment of the better known disease consists: first, in the isolation, as far as possible, of recognised carriers, and, secondly, in the prophylactic use of typhoid vaccine. In the case of paratyphoid fever neither of these methods appears to have been employed in Europe. In India definite carriers are isolated, but little if any use has been made of paratyphoid vaccines as a protective measure. The widespread occurrence of this disease in the British Army in India would certainly seem to justify their employment. From a bacteriological point of view there is every reason for supposing that it would be as effective for paratyphoid fever as it has proved to be for enteric fever.

MEAT POISONING.

It has long been recognised that the consumption of unsound or even of apparently sound meat may give rise to disease. In some instances the illness is caused by parasites in the meat (e.g., trichinosis); in others it is due to such organisms as the tubercle bacillus. These sources of infection will not be considered; I propose to deal only with the well-known form of acute gastro-enteritis which follows the consumption of some definite article of food, and is popularly described as meat poisoning. This term is used in these lectures in a wide sense to include outbreaks caused, not only by various forms of meat, but also by fish and by food of *animal* origin, such as cheese and milk. The illness caused by grain is excluded. Apart from the clinical symptoms the characteristic features of an outbreak of meat poisoning are two in number. They are, first, the practically simultaneous onset of symptoms among those who have eaten some given article of food; and, secondly, the limitation of the illness to those who consumed the food. The latter statement requires some qualification, since illness occasionally, though rarely, occurs among those who have not partaken of the infected meat, but have been in close contact with the other patients.

The isolation of B. enteritidis by Gaertner (1888) and of B. aertrycke by De Nobele and by Durham (1898) in outbreaks of meat poisoning directed attention to these organisms as a cause of such outbreaks. If the records are to be trusted a large majority of the cases of meat poisoning is caused by the consumption of meat infected with one or other of these bacilli; this is undoubtedly true of most of the recent outbreaks which have been adequately investigated. There is, however, a certain number of cases in which these organisms are not present and which may be due to ptomaines.

Ptomaine Poisoning.

It must be remembered that the term ptomaine poisoning is used in two senses. Sometimes it is regarded as being synonymous with meat poisoning; this, however, is a complete misuse of the term and conveys an entirely erroneous impression of the causation of meat poisoning. The term was originally applied by Vaughan and others to poisoning by definite chemical substances formed in meat which they called ptomaines. At that time the infection of meat by B. enteritidis (Gaertner) or by B. suipestifer was not recognised. They long believed that as a result either of autolytic changes in meat or of putrefaction of bacterial origin poisonous substances were formed which gave rise to the clinical symptoms of meat poisoning. The illness was often preceded by a very brief latent period (half to three hours). These substances were called ptomaines. The poisonous bodies formed during putrefaction were regarded not as specific toxins but as products of protein disintegration, and some of them (e.g., putrescin and cadaverin) were isolated in the laboratory.

I have been unable, however, to find any instance in which the presence of such substances has been demonstrated in meat which has caused disease. The statement, for example, that poisoning by cheese is caused by the presence of tyrotoxicon in cheese is based on inadequate evidence; even in the original outbreak described by Vaughan the possibility of bacterial infection of the patients was not excluded. Very little is known, moreover, either as to the nature of the toxic products of protein disintegration or as to the stage of disintegration at which they are formed, and the difficulties of investigation are increased by the fact that in come cases at least the ordinary laboratory animals are much less susceptible than man to poisoning by these products. Definite proof that a given case of meat poisoning is caused by ptomaines is therefore very difficult to obtain, and the diagnosis rests mainly on the absence of other possible causes of the illness; it is desirable always to exclude the possibility of specific bacterial infection of the food before attributing meat poisoning to ptomaines.

There is, however, a rather important group of cases caused by the consumption of tinned meat which may possibly be regarded as coming into this category. The principal symptoms of the disease thus caused are diarrhœa and vomiting; the disease is of short duration, not usually lasting more than two or three days and sometimes only a

few hours. I have recently had the opportunity of investigating several outbreaks of illness, one caused by tinned salmon, the others by corned beef. An interesting point which was noticed in all these cases was the rapid onset of symptoms after the consumption of the food, the interval being rarely more than five or six hours, and in two cases less than an hour. It was also observed that the meat taken from the freshly opened tin appeared to be more harmful than when the meat had been exposed to the air for some hours. The beef and salmon which had caused the illness were subjected to careful bacteriological examination. The food looked perfectly good and showed no signs of decomposition. A portion of the different samples was administered by the mouth to cats, mice, and guinea-pigs. The corned beef caused no ill effects, although a cat which was fed on tinned salmon had some diarrhœa. Saline extracts made from the various samples of corned beef were injected into mice and guinea-pigs, but the animals remained perfectly well. These foods were also examined for the presence both of aerobic and of anaerobic organisms, but except for a few cocci probably derived from the air they remained sterile. Finally, one sample of tinned beef was analysed chemically for the presence of poisonous metals such as lead, tin, or arsenic; the results were again negative. The negative bacteriological evidence, the very brief latent period and the short duration of the illness render it probable that these outbreaks were due, not to infection, but to a chemical poison, although the actual cause of the illness was not ascertained.

There are, however, cases of poisoning by tinned meat in which organisms are isolated from the meat. In an outbreak at Carlisle staphylococci were obtained, but their relation to the illness caused by the meat remained doubtful, since they were not pathogenic for animals. In another outbreak following the consumption of tinned mutton B. suipestifer was isolated both from the meat and from the spleen and alimentary canal of the patient who died. This case was not due to ptomaines, and it is interesting to note that in contrast with those just considered the latent period of the illness was from 24–36 hours.[2]

INFECTION.

The consumption of meat infected with B. enteritidis (Gaertner) or B. suipestifer gives rise to most cases of meat poisoning. Two other causes have been described—namely, infection of the meat with other organisms, and intoxication by the toxins of B. enteritidis (Gaertner) or B. suipestifer. It can hardly be doubted that purulent meat, or meat infected with pyogenic organisms, may give rise to illness if consumed; and pyogenic organisms of one kind or another have occasionally been found in meat which has caused illness; but cases of this kind do not appear to be either numerous or important.

INTOXICATION.

As is well known, B. enteritidis (Gaertner) and B. suipestifer produce toxins which are extremely resistant to heat, but it is not always clearly understood that they are entirely intrabacillary (endotoxins) and that no extrabacillary toxin is formed so far as we know. The amount of toxin present in meat, therefore, must vary directly with the degree of bacterial multiplication which has previously taken place.

There is no doubt that many, perhaps most, cases of infection with these organisms are accompanied by some degree of intoxication, but a simple intoxication, apart from infection, appears to be of rare occurrence, or at least seldom to have been demonstrated. One reason for its infrequency may be that, as is clearly proved (Rimpau, McWeeney), the ordinary process of cooking often fails to destroy these bacilli in the deeper portions of the meat. Further, intoxication by these toxins would be difficult to demonstrate since we have no adequate means of detecting their presence. Possibly the examination of the patient's serum a few days after the illness might be of assistance. We know, of course, that agglutinins are formed in response to the injection of killed bacilli; and in the present case the toxin practically represents the bodies of the dead bacilli. One might expect, therefore, that after an intoxication of this kind the patient's serum would agglutinate B. enteritidis (Gaertner) or B. suipestifer. This test would only be of value provided that a definite infection by living bacilli had been excluded. So far as I am aware, this method has not hitherto been employed.

Nor does there seem to be, at present, any clear means of distinguishing between intoxication and ptomaine poisoning. The only ground, indeed, for regarding a given case of meat poisoning as due either to intoxication by the toxins of B. suipestifer or B. enteritidis (Gaertner) or to ptomaines is the failure to obtain definite bacteriological evidence that the meat was infected. Even the onset of symptoms within two to three hours after the consumption of the meat does not furnish conclusive evidence that the cause of the illness was an intoxication or was due to ptomaines. In the Chesterfield outbreak, which was clearly proved to be caused by pies infected with B. suipestifer, some of the patients became ill two and a quarter hours after eating the pies.

It thus appears that, in a certain number of cases of meat poisoning, infection by organisms cannot be demonstrated. In many of these cases the latent period is extremely short, the illness is of brief duration, and the meat is not pathogenic for laboratory animals. These outbreaks are sometimes attributed to poisoning by ptomaines or by the toxins of specific organisms such as B. enteritidis (Gaertner), although conclusive proof as to their mode of causation is lacking.

MEAT POISONING CAUSED BY B. SUIPESTIFER, OR B. ENTERITIDIS (GAERTNER).

We may now consider the outbreaks of meat poisoning which are associated with the presence of B. suipestifer or of Gaertner's bacillus. In some of these cases the bacillus was isolated both from the patients and from the food which caused the outbreak; in others it was obtained either from the food or from the patients.

Prevalence.

In Germany outbreaks of this kind are of frequent occurrence, and during the years 1898–1908 at least 261 have been recorded. Although Germany is pre-eminently the home of meat poisoning, outbreaks occur from time to time in most European countries and in America. They appear to be more frequent in countries in which much uncooked meat is eaten; and there is reason to suppose that the extensive consumption of uncooked meat in Germany is in a large measure responsible for the prevalence of this disease in that country. In the British Isles the more important recent outbreaks have been those at Hatton, Murrow, Chesterfield, St. Ann's, Tollesbury, and Limerick.

It might be anticipated on general grounds that bacterial changes in meat would occur more readily in summer, and that cases of meat poisoning would be more numerous at this time of year; and such is actually the case. Hübener found that of 36 cases 16 occurred during June, July, and August, and 30 between May and October. In another series of 27 epidemics (Sacquepée) 11 occurred in June, July, and August, and 20 between June and November. B. suipestifer is found rather more often than Gaertner's bacillus in these outbreaks; in 72 outbreaks the former was found 40 times and the latter on 32 occasions.

Clinical Characters.

A study of the more extensive and fully described outbreaks reveals a remarkable uniformity in the clinical symptoms which are observed. After the consumption of the contaminated food the onset of symptoms is preceded by a latent period varying from 6 to 24 hours, occasionally as long as from 48 to 72 hours; in any given outbreak the latent period is usually of approximately the same length for all the patients. Even in the same outbreak, however, it may vary considerably according to the time during which the food is kept before being eaten. Thus in the recent outbreak at Chesterfield, which was caused by pork pies, the average latent period before the onset of symptoms among those who ate the pies, two days after they had been cooked, was 22 hours; when the pies were four days old the latent period was 20 hours; when they were six days old it was 14 hours; and on the seventh day it was 2¼ hours.

The illness often begins with a severe headache or with a rigor speedily followed by acute gastro-intestinal disturbance—nausea, diarrhœa, vomiting, abdominal pain. In the more severe cases restlessness, extreme thirst, and nervous symptoms, such as cramp, become prominent, and death may

[2] Illness following the consumption of meat taken from resoldered leaky or "blown" tins has been left out of consideration; in all the instances discussed above the tins appear to have been sound and air-tight.

be preceded by coma. Fever is usually present and the temperature may reach 102° to 103°. As a rule the temperature falls to normal in from two to five days, and the vomiting and diarrhœa cease. The total duration of the illness rarely exceeds a week, but convalescence is often delayed by general muscular weakness or by attacks of circulatory impairment. Occasionally cases occur in which the temperature is raised for two to three weeks. All degrees of severity are met with, from fulminating cases, which may die within 24 hours, down to those of slight diarrhœa or malaise insufficient to keep the patient from work; some of those who eat the meat may remain unaffected. The clinical symptoms do not differ from those caused by some irritant poisons, and in sporadic cases the relation of the symptoms to the consumption of unsound meat may be difficult to establish. In large outbreaks, however, the practically simultaneous occurrence of all the cases, and the comparative infrequency of secondarily infected patients, can usually be readily correlated with the consumption of some particular article of food.

Post-mortem Appearances.

In the few cases recorded the post-mortem appearances have been very much the same. The mucous membrane of the stomach and intestines is swollen, and often intensely congested; the Peyer's patches are not specially involved. Minute ulcers are not infrequently present, but show no tendency to occur in any particular region of the alimentary canal. Fatty change may be visible in the liver, which then shows numerous small yellowish areas. The other organs present no noticeable alteration.

Mortality.

The average mortality is from 1·5 to 2 per cent., that in outbreaks caused by Gaertner's bacillus being higher than in those caused by B. suipestifer. In an outbreak at Breslau due to B. suipestifer there were 80 cases and no deaths, whereas in the Limerick outbreak caused by B. enteritidis (Gaertner) there were 73 cases, 9 of which were fatal. Taking a large number of epidemics the average death-rate in those associated with B. suipestifer was just over 1 per cent. as compared with 3·5 per cent. in those caused by Gaertner's bacillus. A possible explanation of this difference will be discussed later.

Diagnosis.

During the course of the illness the bacilli can often be isolated in large numbers from the stools of the patients, but they generally disappear in a week or ten days after the onset of the illness. Blood cultures are not often made, but in many cases the bacilli probably enter the circulation; post mortem the bacilli can be isolated from the heart-blood, spleen, and other viscera. A positive serum reaction is usually present six to eight days after the onset of the illness, and may become very marked during the second or third week.

The same organism is not infrequently isolated both from the patients and from the food which caused the illness. Its isolation from both these sources suffices to establish the diagnosis; and the presence of agglutinins in the patient's serum furnishes additional proof of the existence and nature of the infection. Indeed, a diagnosis may be made with fair probability on the serum reactions of the patient alone, since it is extremely rare to find a positive serum reaction for B. suipestifer or B. enteritidis (Gaertner) in healthy individuals.

The inoculation of animals with emulsions of the food or the feeding of animals with the meat is undesirable as a means of isolating these organisms in cases of meat poisoning, since either of them may be normally present in healthy laboratory animals, such as rats, mice, and guinea-pigs.

The foregoing description holds good for infection either by B. suipestifer or by B. enteritidis (Gaertner). The two organisms, however, have a different distribution, and it will be convenient to consider separately their relation to meat poisoning.

AN OPHTHALMOLOGIST'S GIFT TO HIS OLD CLINIC.—Dr. Joseph Schneider, who was formerly assistant in the Würzburg Ophthalmic Clinic, but has long been resident in Milwaukie, U.S.A., has sent 100,000 marks (£5000) to his old clinic for the free treatment of poor people.

ABSTRACT OF

Sir Hunterian Lectures

ON

CERTAIN PHASES IN THE EVOLUTION OF MAN.

Delivered before the Royal College of Surgeons

BY ARTHUR KEITH, LL.D., M.D. ABERD., F.R.C.S. ENG.,

CONSERVATOR OF THE COLLEGE MUSEUM.

THE DISCOVERY OF THE IPSWICH SKELETON.

THROUGH the courtesy of Mr. J. Reid Moir, of Ipswich, Professor Keith stated that he had had the opportunity of examining, at the College, the remains of a human skeleton which had recently been discovered beneath a stratum of undisturbed chalky boulder clay in a sand-pit at Ipswich. He regarded the skeleton as of very great antiquity. Compared with other ancient human remains which have been found in England, he believed that the only one which stands in point of age is the Galley Hill man whose remains were found in a 100-foot terrace of the Thames Valley. The 100-foot terrace rests on the boulder clay, therefore the boulder clay formation is older than the 100-foot terrace, and consequently the Ipswich skeleton belongs to a much earlier date than the Galley Hill man. The flint implements which have been found in the boulder clay and in the mid-glacial sands which lie beneath the boulder clay, and in which the Ipswich skeleton was partly imbedded, are of a more primitive type. The lecturer was of opinion that there could be no question of burial, for the various horizontal lines and markings were continued across in the strata above the bones, showing that they were in the condition in which they had been originally laid down. As the bones were too fragile to be removed the overlying strata were cut away and the layer containing the bones was dug out in blocks and forwarded to the College museum. The skeleton is that of a man whose height is estimated at 5 ft. 10 in. With the exception of the Cromagnon races all palæolithic men yet known are of a low stature. Though the discovery at Galley Hill showed that the modern type of man was very ancient, Professor Keith said that he was not prepared to find beneath the chalky boulder a man of the modern type. Yet in teeth, in skull-form, and in the leading features of the skeleton, the Ipswich man does not differ in build of body from the men of to-day. He expressed the opinion that perhaps too much attention had been directed to the skull. It is very probable that the tibia, being so closely associated with the human manner of walking, will serve to distinguish various stages in man's evolution. The tibia of Neanderthal man recalls the same bone in the gorilla, but it is differentiated from the simian form by possessing a definitely marked anterior border or shin. In other palæolithic races and in all other human races the shin of the tibia is prominent and sharp. The shin of the Ipswich tibia is quite peculiar and unlike any form yet seen. In place of a sharp shin there is a flat surface. It does not represent a pathological condition, but is evidently due to a peculiarity in the gait of the individual.

NEANDERTHAL MAN AND MODERN RACES.

Some modern anthropologists were of opinion that Neanderthal man had gradually shed his simian features and become transformed into the modern type. On the other hand, others believed that such a transformation was impossible, and that Neanderthal man became extinct, leaving no progeny. The lecturer confessed that though at one time he had supposed that the transformation of the Neanderthal to the modern type was possible, the evidence which accumulated in recent years had compelled him to abandon this view. The many discoveries of this peculiar race, which had been made abundantly in France during recent years, belonged to a comparatively late phase of the Pleistocene period. Long before that period, not only in England, but also on the continent, men of the modern type existed. In quoting the case of the human mandible, Moulin Quinon, which Boucher de Perthes, the founder of our knowledge of

Palæolithic man, discovered near Abbeville, in the valley of the Somme, in 1863, the lecturer believed that the chief objection to it is that it so nearly approaches the modern type. Yet Boucher de Perthes took it with his own hand from a deep and old stratum which belongs to an age which preceded the Neanderthal period in France. The mandible is of the type we should expect in the race to which the recently discovered Ipswich skeleton belongs. Several of the Pleistocene crania found in France were pre-Neanderthal in date and yet were of the modern type. The most remarkable and best authenticated of all discoveries of man is that made at Castenedolo, near Brescia, Lombardy, by Professor Ragazzoni between 1860 and 1880. In strata belonging to an early Pliocene age and in conditions which showed that these strata had never been disturbed, he found parts of four human bodies, one the almost complete skeleton of a woman. Professor Sergi, who described these remains, found them to be of the modern type.

MAN AND MODERN ANTHROPOIDS.

In discussing ancient man and modern anthropoids Professor Keith was of opinion that, though the latter did not stand in the line of human descent, there could be no question that their ancestral stock did, for the resemblances between man and the African anthropoids were so many and so close that they could be explained only by a common origin. The African anthropoids were related to man only by a distant and very ancient cousinship, yet they undoubtedly represented the common ancestral stock much more closely than man did, and it was therefore possible to obtain by a close study of modern anthropoids some clue to the manner in which evolution worked in the primitive forms of man. Pleistocene man in Europe presented a condition exactly parallel to what was seen to-day among African anthropoids. The great, strong, brutal gorilla exemplified Neanderthal man; the more finely moulded, less brutal, nimble-witted chimpanzee, divided into a number of races, represented the modern forms of man. It was not to be supposed that there was any direct relationship between the human European and African anthropoid counterparts; in the one case both were men, in the other both were anthropoids. In the evolution of man and anthropoids similar physiological or evolutionary processes have been at work. In Neanderthal man the teeth are massive, the muscles of mastication large, the various bony processes of the skull—from which these muscles took their origin—greatly developed, while the skull was widely and strongly hafted to the neck. The gorilla showed similar characters. The various chimpanzees, like modern races of mankind, exhibited a strong tendency towards a reduction in size and development of teeth, with a corresponding lessened growth of the muscles and apparatus for mastication. At birth the skulls of gorillas and chimpanzees were very much alike. The chimpanzee as it grew up stood still at a certain point of brutalisation, while the gorilla pressed on to the ultimate limit. It would, no doubt, be found that at birth the skulls of modern man and Neanderthal man were very similar. Of the various existing anthropoids there could be no doubt that the gorilla showed the greatest assemblage of human characters.

THE GIBBON AND MAN'S EVOLUTION.

The gibbon was the most important of all surviving apes. Those who were familiar with the gibbon as seen in the Zoological Gardens, or who have kept them as pets, valued them for their mental and bodily characters. The student, however, was drawn to them because, structurally, they belonged to a very ancient world, and threw light on a very early stage in man's origin. The gibbon which lived in Europe in Miocene times was now confined to the jungles of further India, Borneo, Java, and Sumatra. There were two very distinct kinds—the large gibbon and the small or ordinary gibbon, spread over a vast jungle or forest country. The structural differences between the siamang and gibbon were similar in degree and in nature to those which separated the gorilla from the chimpanzee. Mankind, during the greater part of the Pleistocene epoch, was separated into two distinct types—the Neanderthal and the modern. When it was remembered that the gibbons, African anthropoids, and Pleistocene man represented three successive stages in the evolution of the highest primates, it was a remarkable fact that there should be in each stage a process at work which led to a separation into two kinds—one a massive and brutal form restricted in numbers and in distribution and divided into numerous varieties or races. The siamang, the gorilla, and Neanderthal man were the representatives of the brutal type, while the gibbon, the chimpanzees, and the modern human types were the representatives of the other. We were apt to think, said Professor Keith, of the upright posture as a human characteristic, but this was not the case. It was true that in man only were the lower extremities adapted for ground progression, but these changes, remarkable as they were, were minor ones compared with the transformation which we saw in the body of the gibbon. The gibbon was essentially an ordinary monkey adapted to the upright posture. There could be no doubt that in all the very ancient primates the axis of the body was carried horizontally; the gibbon was the earliest known form in which the axis of the body was carried upright; in its system we saw the introduction of a structural principle which served as the stepping-stone to a human posture. The period of the evolution of the gibbon dated back to soon after the separation of the fauna of Africa from that of South America, the latter continent being apparently the centre of evolution and of the earliest forms of monkeys.

EXTINCT ANTHROPOIDS.

From an examination of extinct forms of animals closely allied to mankind, the lecturer supported the opinion that the antiquity of man was very much greater than had been hitherto supposed. He attached great importance to dryopithecus, a great anthropoid which lived in the jungles of Europe during the Miocene epoch, and became extinct early in the Pliocene. It was about the size of the chimpanzee, and like that animal in several features, but it differed in certain points from all the existing great anthropoids and showed features which linked it with the small and much more primitive anthropoid—the gibbon. Dryopithecus was widely spread in Europe; the most complete remains have been found in the Middle Miocene formation of the South-West of France. Its teeth occurred in rather later formations in the upper valley of the Rhine and in the valley of the Danube. At least three forms of this great anthropoid had lived in Europe. The molar teeth of this ape had rather a close resemblance to the corresponding human teeth. It was possible that some of the molars attributed to this animal were really human teeth, or of the Miocene stock which gave rise to man. The molar teeth were the only points in which dryopithecus resembled man, and there was no reason to regard this extinct anthropoid more than another as a possible human ancestor. The teeth and jaws of the European gibbon of that long-past or Miocene period differ from those of their modern representatives to about the same degree as the corresponding parts of a modern Englishman differ from those of an aboriginal Australian. To students of human evolution the discovery of the gibbon at the beginning of the Miocene epoch is a matter of great importance, as we know thereby that the upright or vertical posture was already evolved. Professor Keith stated that an account of "the most important and surprising discovery" yet made regarding the early history of the primates was recently published (1910) by Dr. Max Schlosser. In the oldest of the Oligocene formation of the Fayum of Upper Egypt remains of three forms of monkeys were found. Two of these Dr. Schlosser regards as close allies of South American monkeys; the other he regards as an ancestor of the Miocene gibbon of Europe. The discovery had a double importance: it showed in the first place, that the Old World monkeys and anthropoids had, as many formerly believed, a common origin with those of South America; in the second place it showed that the basal anthropoid stock was in process of evolution at the beginning of the Oligocene period.

PRESENT POSITION OF THE THEORY OF HUMAN EVOLUTION.

In reviewing the state of knowledge concerning the evolution of man, Professor Keith was of opinion that all the evidence indicated a very great antiquity for later phases in the evolution of the human body. Mankind as seen in the world to-day—European, Mongolian, Red Indian, and Australian—were most diverse in type. Their evolution from a common stock demanded the elapse of an enormous length of time. In England we find the types of skulls of her most ancient inhabitants repeated in her modern population. With the exception of the Neanderthal type, all the ancient continental forms are still to be found in Europe. From predynastic to modern times the skull of the Egyptian has

changed only in detail. The oldest human crania found in America are of the Red Indian type. We are forced to believe, said the lecturer, that human evolution works slowly, and yet it has effected the extraordinary contrast seen between two such representatives of the modern type as the negro of Africa and the fair-haired native of North Europe. To accomplish such a degree of divergence one must carry the history of modern man at least well within the Pliocene period. Of the survivals of ancient human forms it is very likely the aboriginal Australian is the best living representative of Pliocene man. From such a type one can understand the origin of the negro on the one hand and of the European on the other. As regards the degree of relationships between man and the great anthropoids, the opinion of scientific men had changed very little since Darwin's time. Huxley regarded the structural difference between man and the gorilla as about equal in degree to that which separated the gorilla from ordinary monkeys. The divergence between the gorilla and monkey is undoubtedly the greater. It can be safely said that the brain of the gorilla represents an intermediate stage between the brains of man and of the small anthropoid, the gibbon; the brain of the dog-like monkey represents a still lower or more primitive stage. In 1904 Professor Nuttall confirmed the inferences which anatomists had drawn concerning the relationship of man to anthropoids and monkeys. He established the fact that the blood of the great anthropoids responds to vital tests to a degree almost equal to human blood; the reaction became less when the test was applied to the blood of monkeys. The response in the case of those of the Old World was greater than those of the New, thus bearing out the anatomists' opinion that the Old World monkeys are more recently related to the human stock than those of South America. There was also the evidence of disease. The great anthropoids were susceptible to syphilis—a human disease; the monkeys could be inoculated with difficulty. Anthropoids in captivity were liable to typhoid fever, and they frequently died from that very human disease—appendicitis. There was no evidence that appendicitis occurred when the anthropoids lived in their native habitats, and on their natural diet.

FEEBLE-MINDEDNESS AND THE MEASUREMENT OF THE INTELLIGENCE BY THE METHOD OF BINET AND SIMON.

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Now that the problem of the feeble-minded is passing from the stage of general and somewhat vague discussion to become a matter for practical and detailed consideration, it will probably be necessary to devote rather more attention than has hitherto been customary to the question, Who are the feeble-minded, and how are they to be recognised? It is a little remarkable that, despite the enormous output of literature dealing with this subject within the last few years, a point of such obvious importance should on the whole have received such very inadequate treatment. It is not, of course, neglected in the numerous text-books, but it cannot be said that the pages which they devote to its consideration take us very far; in most instances, indeed, the writer seems to realise that his success in meeting this difficulty is rather indifferent, for when, after some destructive criticism of the technically phrased definitions of his predecessors, he has propounded an equally defective one himself, he prudently winds up by counselling us to be content with the general indications on this point that are laid down in the Report of the Royal Commission on the Care and Control of the Feeble-minded. That report, it will be remembered, defined the feeble-minded, in terms suggested by the Royal College of Physicians of London, as "persons who may be capable of earning a living under favourable circumstances, but are incapable from mental defect existing from birth or from an early age (*a*) of competing on equal terms with their normal fellows, or (*b*) of managing themselves and their affairs with ordinary prudence."

This definition was admirably suited for the purpose for which it was designed—namely, to indicate the scope of the inquiry referred to the Royal Commission; but it is obvious that it does not provide, and is not intended to provide, what is required for the practical work of diagnosis. It does not furnish the medical examiner with any definite criterion by which he may judge whether the given individual with whom he has to deal is or is not feeble-minded; it does not suggest how an opinion can be formed in advance as to whether the individual will be "unable to compete with his normal fellows" or "to manage his affairs with ordinary prudence," or, if he has already shown his incapacity in these directions, it does not indicate the grounds on which it is to be concluded that the proved failure is due to mental defect. On the other hand, the definition has the very great merit of being founded on strictly empirical data; and until we know a great deal more than we have yet learned about the normal as well as the feeble mind, it is very certain that definitions of this modest character are all that we can usefully attempt. What appears to be needed, therefore, is a development of the empirical test of the Commission in a fuller and more precise form, so as to define feeble-mindedness by reference to an accepted standard of intelligence, and further to furnish a convenient method for applying this standard in practice. I propose in this paper to point out that such a standard and method may be found in the ingenious *échelle métrique de l'intelligence* devised some years ago by M. Binet and M. Simon for estimating the degree of intellectual development in school children. Possibly the scale may need some modifications to fit it for measuring the intelligence of the mentally defective of adult years, and at the time of his lamented death a few months ago the late M. Binet was, in fact, revising it from this point of view; but, as shall I have occasion to remark later on, it is probable that the necessary alterations will be even slighter than M. Binet supposed. The question, meanwhile, it is satisfactory to note, is engaging the attention of M. Binet's able and devoted fellow-worker, Dr. Th. Simon.

In principle the method of M. Binet and M. Simon is very simple. By extensive observations on French school children at different ages, they were able to arrange a great number of mental tests in a series of groups graduated according to their increasing difficulty after such a fashion that each group corresponds to what the average child of a given age can do. The tests in each group are of several kinds, and, though theoretical considerations are deliberately eschewed by the authors, it is evident that the choice of the tests has had in view the different aspects of intellectual activity. This can be seen from a glance at the list of tests:—

3 years.—(i.) Point out nose, eye, mouth; (ii.) repeat a number with two figures; (iii.) enumerate the objects in an engraving; (iv.) tell surname; (v.) repeat a sentence with six syllables.

4 years.—(i.) Tell whether a little boy or a little girl; (ii.) name key, knife, penny; (iii.) repeat three numerals; (iv.) point out the longer of two lines.

5 years.—(i.) Find which is the heavier of two boxes; (ii.) copy a square; (iii.) repeat a phrase with ten syllables; (iv.) count four pennies; (v.) reconstruct a card cut diagonally into two pieces.

6 years.—(i.) distinguish morning and evening; (ii.) define common objects—fork, chair, table, horse, mother—by use; (iii.) copy a rhomb; (iv.) count 13 pennies; (v.) compare a number of drawings of faces from an æsthetic point of view.

7 years.—(i.) Point out right hand and left ear; (ii.) describe an engraving; (iii.) do three simple errands; (iv.) count three pennies and three halfpennies; (v.) name four colours—red, blue, green, yellow.

8 years.—(i.) Make mental comparison between fly and butterfly, wood and glass, paper and cardboard; (ii.) count from 20 to 0; (iii.) point out features missing in incomplete figures; (iv.) give the date; (v.) repeat five numerals.

9 years.—(i.) Take 2*d*. out of a shilling and give the change; (ii.) define common objects (see above) otherwise than by use; (iii.) recognise all the current coins; (iv.) name the months; (v.) answer simple questions involving problems of ordinary life—e.g., "When you have missed the train, what should you do?"

10 years.—(i.) Arrange five boxes (3, 6, 9, 12, 15, and 18 grammes) according to weight; (ii.) copy two simple geometrical designs—a prism and a Greek moulding—from memory after having seen them for 10 seconds; (iii.) criticise a number of absurd statements—e.g., "The body of an unfortunate young girl, cut into 18 pieces, was found yesterday in Hyde Park; it is thought that she killed herself"; (iv.) answer questions of similar nature but more difficult than in test for 9 years; (v.) bring three given words into two phrases.

12 years.—(i.) Resist a visual suggestion made by a series of pairs of unequal lines followed by a series of pairs of equal lines, the subject being asked which line is the longer and passing the test if he recognises the equality in the later pairs; (ii.) bring three given words into one sentence; (iii.) say more than 60 words in three minutes; (iv.) define abstract words—charity, justice, and kindness; (v.) rearrange a simple sentence, the words of which have been put out of their order.

15 years.—(i.) Repeat seven numerals; (ii.) find three rhymes for a given word; (iii.) repeat a sentence of 26 syllables; (iv.) interpret an engraving; (v.) explain an unfinished account of a common episode.

Most of the tests in each group include several examples; the abstract terms for definition, for instance, are three in number; the simple questions are three and the more difficult questions five, and so on. In such cases the test is considered to be passed if a majority of the instances are successfully dealt with. A great deal, of course, depends on the way of putting the questions and judging the results, and to secure uniformity in these points the authors give minute directions in the published description of their method.[1] The tests are for the most part of such a character that, if these directions are closely adhered to, the influence of the examiner's personal equation is comparatively slight; in fact, in the case of pupils who have learned the method directly in M. Binet's laboratory this influence is practically inappreciable.

The arrangement of the series of tests was arrived at, as mentioned above, from the average results of a large mass of observations; and it is not, therefore, to be expected that individual instances will show exact conformity with it. Intelligence involves many factors, and cannot be measured as we measure a simple character like stature; the multiplicity of the tests is a recognition of this fact, which, however unfortunate, is inherent in the nature of the case and constitutes a difficulty which we can only deal with by means of a convention. And the convention adopted in the Binet-Simon method is a very simple and reasonable one. The problem is, how are we to proceed in the numerous cases where the person under examination passes some of the tests of a given age and fails in others? In such a case the system adopted is to try easier tests till we have found the level at which the subject can do all the tests of a group; he is then adjudged to have reached the intellectual development of that age, and for the tests which he can pass in the higher age-groups he is credited with a further degree of intelligence which is estimated by counting five such tests as equivalent to a year to be added to the mental stature. If, for instance, a boy of, say, 7 years old does all the tests of his age plus three tests of 8 years and two tests of 9 years, he is considered to have attained to the intellectual development of $7 + (3/5 + 2/5 = 5/5)$ years—viz., 8 years; that is to say, he is a year in advance of his age. This, of course, is very artificial, but it is only by some such convention that the difficulty can be got over; the important thing is that the convention should be universally accepted.

In applying the method to school children the way of working is simply to try first the tests corresponding to the child's age; if he passes these the examiner tries him with the tests in the higher groups until he has obviously got beyond the subject's capacity; if, on the other hand, he fails in some or all of the tests of his age, the lower tests are tried until the level is reached where he can do all the tests. The result of each test, indicated by a + or a −, is entered in the proper place in a sheet prepared with columns showing the series of tests. It is further required that a more detailed record of the examination be taken down giving the exact answers to such tests as the definitions, questions, criticisms, and so forth, this record serving as evidence to justify the examiner's estimate of the result with each of these tests.

This method has now been employed for some years with very excellent results in a number of the primary schools in Paris as a means for detecting and classifying cases of mental deficiency. It works very well for this purpose because the tests are nearly all of such a kind that they do not presuppose school knowledge; they show the capacity of the child independently of the formal instruction which he may have received, and thus obviate the risk of taking mere ignorance or backwardness for mental defect. This is peculiarly important in the selection of children for treatment in the special schools. As the value of such institutions is engaging attention in this country, it may be of interest to note in passing that the experience of those who have worked with the Binet-Simon method rather inclines to the view that the good results claimed for the special teaching have, at least in a good many instances, been gained with children who were not in fact mentally deficient at all.

Of course, intellectual development does not proceed in a uniform way or at constant rate, and it is necessary to take account of the range of individual variation in judging the results obtained with this method. So far as an opinion can be formed from the available evidence on this point, it would appear that a child may be two years below the intellectual level of his age without being necessarily defective; an inferiority of more than two years does not seem to be made good in subsequent development.

I now pass to consider the application of this method to the measurement of intelligence in the mentally defective who are over school age. In the view of M. Binet and M. Simon an intellectual development corresponding to the average at 12 years of age is sufficient for the ordinary needs of an individual fending for himself under present-day industrial conditions. A mental capacity falling short of that level is defective, and it is proposed further to divide the mentally deficient on the basis of this method into idiots, with an intellectual level under that of 2 years, imbeciles with an intelligence corresponding to what would be normal between 2 years and 7 years, and feeble-minded (*débiles*) with a development above that of 7 years but less than that of 12 years. Accepting this definition of feeble-mindedness, we have, then, to see the results obtained from applying to the cases of this sort the tests corresponding to the different levels from 7 to 15 years. The tests are, of course, applied in exactly the same way as with the children, the starting-point being chosen according to the impression the examiner may have formed of the subject's intelligence. It is generally desirable, however, to go through a rather wider range of tests than with normal children, so as to ensure a full appreciation of the individual's powers. To show the working of the method the accompanying table will be more useful than pages of description; it gives the results found in the examination of a dozen female prisoners of what is known as juvenile-adult age—i.e., between 16 and 25. The cases have been taken from a large series of observations which are being prepared for publication in the *Année Psychologique*. Six of the prisoners were selected as representatives of the ordinary run of London working-class girls; they were good wage-earners, and were either unconvicted prisoners without criminal antecedents or had been committed only for occasional, trivial, and quasi-criminal offences. The other six were criminals who had shown indications of weakness of mind.

On looking at the table it will be observed, in the first place, that the results very generally bear out the seriation of the tests; the only apparent exceptions are the test of copying geometrical figures from memory (10 years), which is missed by several girls who succeed in the higher tests, and the test of interpreting engravings, which, on the contrary, is often done by subjects otherwise of rather low intelligence. With regard to the former of these tests I think it possible that further experience may show that it is really too difficult, but that is a matter that time must settle. With the engravings it seems to be rather different; they enter, it will be noted, into three groups of tests. At 3 years of age the ordinary child is able to name the different objects in the engraving; at 7 years he will combine the objects in a description; but it is not till he is over 12 years that he will go further and interpret the picture as a story. For instance, one of the three engravings used by M. Binet and M. Simon represents a father and son moving their very poor belongings on a hand-cart. When shown this picture the young child puts his finger on the several figures—"a man," "a boy," "a cart"; the older child says, "a man and a boy pulling a cart with furniture"; the child of 14 or 15 will bring in the dramatic note and will speak of the poverty and sufferings of the homeless family. There is some reason to think that this interpretative tendency may develop with age and experience apart from intellectual growth; I am inclined to surmise that it may be a result of an affective influence connected with puberty; that, however, is a matter for further investigation. Anyhow, apart from these two exceptions, the order of the tests conforms to expectation. And the results in the several cases also go to prove the adequacy of the method in its present form. Taking first the girls of presumably normal intelligence, it is seen that they have all succeeded in passing the level of 12 years, most of them doing, indeed, the majority of the tests for 15 years. This probably gives a pretty accurate view of the average mentality of girls of the urban working class. Turning now to the girls suspected of being feeble-minded, we find that

[1] La Mesure du Développement de l'Intelligence chez les Jeunes Enfants, Bulletin de la Société Libre pour l'Étude Psychologique de l'Enfant; Paris, F. Alcan, price 1.50 francs.

four out of the six fail to reach the level of 10 years on the Binet-Simon scale, three of them being only just over the limit of 9 years, one barely reaches 10 years, while one, and one only, shows a degree of intellectual capacity equal to that in the normal group. With this exceptional case, which is peculiarly interesting, I will deal later when speaking of the relation of these tests to the factors of mind other than the intelligence. In the other cases the value of the method in giving a clear and definite view of the extent of the deficiency was patent; three at least of the girls, though their careers suggested some degree of mental defect, showed a liveliness of manner and an appearance of alertness which could, and in fact did lead casual observers to consider them as fairly bright and to attribute their conduct to the feeble-minded criminal, it is these latter factors of mind that are of most importance. Therefore the method is to that extent an instrument of limited value in the examination of the mentally defective. On the other hand, even in such cases, it is of no small assistance to be able to separate, as it were, this one factor of the intelligence, to measure it and to assign to its deficiency the due share in the individual's inferiority. And, moreover as the factors of mind are after all intimately connected, many of the tests specially directed to the intelligence necessarily give us also some indirect indications touching emotivity and impulse. We have a striking instance of this in the exceptional observation shown in the table and referred to above—the case of the feeble-minded criminal R. P. This girl, it will be

Results of Tests in 12 Female Juvenile-Adult Prisoners.

	Initials and age	V. H., 18	K. D., 18	M. H., 22	E. T., 20	E. W., 18	K. O'D., 19	S. H., 20	M. P., 20	R. P., 18	D. M., 22	A. W., 18	L. R., 21
7 years.	Left hand, right ear								+		+		
	Describe engravings								+		+		
	Do three errands								+		+		
	Count three pennies and three halfpennies								+		+		
	Name four colours								+		+		
8 years.	Mental comparison of objects							+	+		+	+	
	Count from 20 to 0							+	−		+?	+	
	Indicate missing features							+	−		−	+	
	Give the date							+	+		−	+	
	Count five figures							+	+		+	+	
9 years.	Take 2*d.* from a shilling		+				+	+	+		+	+	+
	Define objects otherwise than by use		+				+	−	−		+	−	+
	Identify current coins		+				+	+	+		+	+	+
	Name the months		+				+	+	+		−	+	+
	Answers easy questions		+				+	+	+		+	+	+
10 years.	Arrange weights in order	+	+		+	+	+	−	−	+	+	+	−
	Copy figures from memory	+	−		+	+	−	−	−	+	−	−	+
	Criticise absurdities	+	+		+	+	+	+	−	+	+	−	−
	Answer difficult questions	+	+		+	+	+	+	+	+	+	−	−
	Put three words into two phrases	+	+		+	+	+	+	+	+	−	−	−
12 years.	Resist suggestion by lines	+	+	+	+	+	+	−	−	−	+	−	+(?)
	Put three words into a phrase	+	+	+	+	+	+	+(?)	+	+	−	−	−
	Say more than 60 words in three minutes	+	+	+	+	+	+	−	−	+	−	−	−
	Define abstract words	+(?)	+	+	+	+	+	−	−	+	−	−	−
	Rearrange phrases in disorder	+	+	+	+	+	+	−	−	+	−	−	+
15 years.	Repeat seven figures	+	+	+	−	−	+	−	−	−	−	−	+
	Give three rhymes	+	+	−	+	+	+	−	+	+	−	−	−
	Repeat phrase of 26 syllables	+	−	+	+	+	+	−	−	+	−	−	−
	Interpret engravings	+	+	+	+	+	+	+	−	+	−	+	+
	Explain common episode	−	+	+	+	+	−	−	−	+	−	−	−
	Level on Binet-Simon scale	Nearly 15 years.	Nearly 15 years.	Nearly 15 years.	Nearly 15 years.	Nearly 15 years.	Nearly 15 years.	9½ years.	9½ years.	Well over 12 years.	9½ years.	9½ years.	10 years.
		Normal.						Feeble-minded.					

rather to flightiness and instability than to intellectual weakness. Under such conditions an objective measure of this sort is of material assistance in clearing up the difficulty. It will certainly not be necessary to dwell on its advantages for those who are called on to satisfy lawyers and magistrates in cases where the question of mental deficiency is at issue.

The foregoing account of the method and the examples of its application will, I trust, give the reader a fairly clear notion of its merits and limitations. But before concluding, I think it may be well in this connexion to refer specially to one of these limitations which is implied in the very description of the method as furnishing a measure of the intelligence. It is designed *only* as a measure of the intelligence; it does not purport to enlighten us as to the affectivity or the will. But, of course, in regard of feeble-mindedness, at all events as the question concerns the community, as notably with reference

noted, in contrast with the other weak-minded subjects, was found to have an intelligence of fairly high level. She did, in fact, and did extremely well, all the tests for 15 years, except the repetition of seven figures, and she only just failed in that. And she was also successful in all the tests for 12 years, except that for showing the power of resistance to suggestion. In this test the subject is shown two straight lines side by side on a sheet of paper, that on the left being a little shorter than that on the right, and he is asked to point out the longer; he is next shown a second and third pair in which the length of both lines is increased, but the inequality between them is preserved, and he is asked the same question; then, when the suggestion that the right is always the longer has thus been given, he is shown three other pairs in which the lines are of the same length, and

he is considered to have passed the test if he recognises the equality. In this test R. P., who did so well in the other tests, failed, and failed most egregiously, succumbing to the suggestion as completely as the least intelligent of the feeble-minded girls. The most probable explanation of this result is that suggestibility, or, at all events, the sort of suggestibility that we are dealing with by such a test, depends largely on affectivity and impulse, and that these factors rather than the intelligence are at fault in this case. And the facts as to the girl's delinquency tend to confirm this surmise. She had committed a very silly act of arson, setting fire to a chair in the house where she was employed as a servant. She admitted the crime but could not assign any motive for it, saying merely that the idea came to her and that she acted without being able to think what she was doing. This occurred within a few hours of a more serious outbreak of fire which appears to have been due to accident, but in which, at any rate, it was not shown that she had any hand. Further, she had been subjected from childhood to a peculiar form of pathological lying which would lead her constantly to confirm and supplement by imaginary details any statement or opinion emanating from a person who had gained some influence over her. It is difficult not to connect this morbid trait and the apparently imitative act of arson with the marked suggestibility revealed in the test with the lines. I have thought it worth while to refer at some length to this girl's case as an illustration of the point I wish to make regarding the indirect value of some of the Binet-Simon tests outside the field for which they are specially intended. In the interpretation of the engravings and in several of the questions and definitions the subject's affectivity is very frequently shown in an equally instructive manner.

It should, of course, hardly be necessary to point out that this method is not in any sense proposed as a substitute for that complete clinical study on which alone an opinion of any value can be formed with regard to a case of mental deficiency. What is claimed for it is that it supplements the clinical investigation, and enables its results, so far as the factor of intelligence is concerned, to be presented with a clearness and an objectivity which must considerably enhance their value. From this point of view it is likely, I think, to be found of very real service in medico-legal practice and in the certification of the feeble-minded.

In conclusion, it remains only to express my very deep appreciation of the great kindness shown me by the late M. Binet and his fellow-workers, to whom I have been indebted for the opportunity of making myself familiar with this interesting and valuable method. M. Binet, with the generous spirit of the true *savant*, not only allowed me free access to his laboratory, but gave me most freely the invaluable aid of his advice and supervision. Dr. Th. Simon, the distinguished physician of Morel's old asylum of St. Yon, whose charming hospitality I cannot sufficiently acknowledge, gave me the opportunity of seeing in his service the application of the method to a large number of congenital defectives of all grades, and also to a number of insane patients. To Mlle. Giroud, secrétaire de la Société Libre pour l'Étude Psychologique de l'Enfant, I am indebted for instruction in the details of the various tests, and I have to thank M. Vanney, the enlightened headmaster of one of the principal primary schools in the district of La Villette, for allowing me to practise the method on a large number of his pupils of different ages. I have also to acknowledge the kindness of the well-known philanthropist, M. Henri Rollet, who permitted me to test the intelligence of several adolescent criminals in one of his after-care homes. And finally I have to thank the Prison Commissioners for granting me the period of special leave during which I was enabled to undertake this study.

H.M. Prison, Holloway, N.

THE (Biennial) Health Conference and Exhibition, 1912, will be held at the Royal Horticultural Hall, Westminster, from June 24th to 27th, under the patronage of H.R.H. Princess Christian of Schleswig-Holstein, in coöperation with the National Health Society. The promoter and organiser is Miss R. V. Gill, 35, Ludgate-hill, London, E.C.

PHARYNGEAL SUPPURATION: COURSE AND DIRECTION OF VARIOUS TYPES.

BY GEORGE W. BADGEROW, F.R.C.S. EDIN.,
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IN dealing with this subject it is advisable to consider first the anatomy and physiology of a region so intimately concerned with all the vital processes, and then to apply well-established principles of surgery and pathology without being led either by the specialist's tendency to magnify fine clinical distinctions or by the general surgeon's desire for differences which, although not prominent, may be of great importance in diagnosis, prognosis, and treatment. It is also advisable in giving a comprehensive description of any surgical condition that we should avoid the use of terms which, though sanctioned by ancient usage, are not scientifically accurate, and may be misleading. Such terms as "quinsy" and "croup," for instance, should be relegated to the past. There is some danger, however, of substituting for these terms others which are more impressive, but which are, after all, only more evidences of our want of knowledge of the essential nature of the disease with which we have to do. In this category comes the expression "retro-pharyngeal abscess," an expression which neither describes nor defines the several conditions to which it is commonly applied.

The methods usually employed by medical writers in classifying diseases may be either anatomical or clinical. In classifying suppuration in the region of the pharynx, while it is a great advantage to possess a wide experience of the various and varied appearances which present themselves to the surgeon engaged in their treatment, only a thorough grasp of the anatomy and physiology of the region will furnish the principles which go to form reliable knowledge, and which will enable him to apply his technical skill in a manner calculated to bring the greatest amount of relief to the sufferer.

Points for Consideration in the Anatomy and Physiology of the Pharynx.

The most important structure to study in connexion with the pharynx is the strong aponeurosis which, known as the pharyngeal aponeurosis, forms a kind of fibrous bag, around which are applied the structures required for the performance of the important functions concerned and on which they act. This aponeurosis is attached above to the under surface of the basal portion of the occipital bone, immediately in front of the pharyngeal tubercle; then to a line extending along the under surface of the petrous portion of the temporal bone as far as the anterior border of the jugular foramen; then to the inner end of the Eustachian tube and along the border of the internal pterygoid plate, to the pterygo-maxillary ligament and to the posterior end of the mylohyoid ridge on the lower jaw. From this the aponeurosis passes down the side of the tongue to the hyoid bone. Here it ends, but under the name of the thyrohyoid membrane is continued to the middle of the posterior surface of the thyroid cartilage, where it becomes merged in the lining membrane of the larynx.

Posteriorly the bag formed by the pharyngeal aponeurosis is complete, and forms a continuous layer of tissue from the base of the skull to the sixth cervical vertebra, where it joins the fibrous coat of the œsophagus at the level of the cricoid cartilage. The soft palate may be considered as part of the pharynx, and the fibrous aponeurosis, which is clothed by mucous membrane in front and behind by both muscles and mucous membrane, forms an integral part of the pharyngeal apparatus and is intimately concerned in suppurative processes, especially in the neighbourhood of the tonsils. The soft palate when drawn back acts as a curtain separating the mouth from the naso-pharynx and nose.

Superficial to the pharyngeal aponeurosis is the mucous membrane, which is continuous with that of the several cavities or canals opening into it, but which has a distinct character of its own. Numerous mucous glands are to be found scattered over its surface, while an abundance of lymphoid tissue, which is especially marked during the earlier years of life, is responsible in great measure for the ease with which pathogenic micro-organisms produce their effects within its substance.

The lymphoid tissue is mainly collected into a series of aggregations called "tonsils," which form a ring extending from the roof of the pharynx down the sides of the faucial isthmus to the dorsum of the tongue. Lying beneath the body of the sphenoid is the collection of lymphoid tissue known as the pharyngeal or Luschka's tonsil. With this the name of "adenoids" is associated when it is hypertrophied; a smaller collection is that at the posterior lip of the Eustachian orifice and in the fossa of Rosenmüller lying above and behind it. At the sides of the buccal aperture, between the anterior and posterior pillars of the fauces in the recess known as the tonsillar recess, is the faucial tonsil or tonsil proper, while on the pharyngeal aspect of the dorsum of the tongue, lying between that and the epiglottis, is the lingual tonsil, which differs from the others in its relative insignificance during the years of childhood.

Having considered the aponeurosis and its overlying mucous membrane, we next have to deal with the muscles which lie outside the aponeurosis in a space between that and the strong layer of tissue known as the prevertebral fascia. This space has been described as the "retro-pharyngeal space," a description which is too vague, especially when we come to consider suppuration in the pharynx as a whole. We must bear in mind that there is an anterior as well as posterior and lateral surfaces to the pharynx, and we shall thereby be enabled to include various important forms of suppuration beneath the root of the tongue which lie in the same plane as the space in which the constrictors of the pharynx lie. The constrictors are three—the superior, middle, and inferior, which are associated in deglutition by the stylopharyngeus, the stylohyoid, the palatoglossus, and palatopharyngeus, together with the muscles of the soft palate. These muscles are important in connexion with suppuration, not so much from the point of view of cause as of effect, for their involvement gives rise to one of the most characteristic symptoms of that affection—viz., dysphagia or difficulty in deglutition.

Posterior to the muscle lies the strong prevertebral fascia, which stretches across the neck from the deep surface of one sternomastoid to that of the other, and thus separates the anterior surface of the bodies of the cervical vertebræ and the ligaments and muscles attached thereto from the muscles of the pharynx. Posterior to the prevertebral fascia on the rectus capitis anticus major lies the post-pharyngeal gland, which may caseate and form an abscess presenting on the pharyngeal wall. Behind these several structures we come to the bodies of the first six cervical vertebræ, and thus complete the list of the anatomical factors likely to be involved in suppuration of the pharynx.

Etiology of Pharyngeal Suppuration.

The etiology of suppuration in the region of the pharynx resolves itself into a question of bacteriology, and when we consider that in apparently healthy throats there are found, among other numerous pathogenic bacteria, the tubercle bacillus, the diphtheria bacillus, streptococci, staphylococci, pneumococci, bacillus coli communis, the micrococcus catarrhalis, and various forms of leptothrix, the only wonder is that inflammations and suppuration are not more common than they are. The structure of the lymphoid tissue itself predisposes to the entrance of micro-organisms, for in the epithelium of the crypts there are gaps which permit of the passage of leucocytes, and *a fortiori*, of the much smaller schizomycetes which set up disease processes. Placed at the entrance to the respiratory and digestive systems, and intended evidently by nature to act as a protecting filter, the tonsillar tissue must be admitted to fail to a great extent in the purpose which it is supposed to fulfil.

As factors predisposing to suppurative processes in the pharynx may be mentioned such causes of chronic irritation as smoking, alcoholism, and syphilis. The exanthemata, especially measles and scarlet fever, also predispose to infection, and the influenza bacillus by its effect on the accessory air sinuses is responsible for many cases of suppuration owing to the discharge into the naso-pharynx of the products of acute and chronic sinusitis. Middle-ear disease through its connexion with the Eustachian tube is liable to produce suppurative pharyngitis.

The mechanical causes of suppuration in the pharynx are foreign bodies, such as fish bone, chicken bones, rabbit bones, while such an object as a broken pipe-stem has been extracted from a tonsil, where it lay embedded for weeks. In children, wounds from pointed sticks give rise to suppuration not infrequently; while in lunatics and persons of suicidal tendencies we may have to deal with the results of infected wounds inflicted by knives, pieces of glass or metal, and by bullets.

Classification of Suppuration in the Pharynx and its Neighbourhood.

The only scientific classification of pharyngeal suppuration is an anatomical one based on the tendency which pus usually exhibits of travelling in the planes of cellular tissue. One is not unmindful of the possibility of this, as of all other disease processes, extending from the original seat to adjacent strata, but we should always endeavour to have before our mental purview a definite conception of a starting-point from which to follow the course and progress of the disease in each individual case. Suppuration originating in each of the layers which compose the pharyngeal wall has a definite character of its own, which often will enable the careful investigator to recognise and deal with it effectually as soon as the time for action arises.

The classification which I would propose is as follows. Pharyngeal suppuration, according to its seat of origin, may be: (1) Lymphoid; (2) submucous; (3) subaponeurotic; (4) prevertebral.

1. *Suppuration arising in the lymphoid tissue of the pharynx.*—Although this is by far the commonest seat of infection, it is seldom that we find any large collections of pus in this layer of the pharyngeal substance. In acute lacunar tonsillitis the crypts may contain pus which either confines itself to the separate lacunæ or spreads as a false membrane over the tonsillar surface. Occasionally one finds as a result of parenchymatous tonsillitis the whole tonsil becoming smooth and rounded, forming a localised abscess. In my experience I have only observed a slight number of cases in which suppuration resulted in a pure tonsillar abscess. It is rarer still in the pharyngeal and lingual tonsils. In Vincent's angina one sometimes finds a membrane due to staphylococcus infection which may be mistaken for diphtheria.

2. *Suppuration originating in the submucous tissue of the pharynx.*—This is the form of suppuration which most often presents itself to the surgeon, and is best exemplified by the well-known peritonsillar abscess to which the popular designation of quinsy is applied. It is characterised by a rapid infiltration of the loose submucous tissue over an extent of surface varying with the virulence and duration of the infective process. In the case of peritonsillar abscess the local manifestations are most marked in the soft palate, but may, if unchecked, spread over the whole of the submucous layer of the pharynx. In the form of pharyngeal suppuration described by Senator under the name of "acute infectious phlegmon" the disease may run its course and cause death in four or five days, either from œdema of the larynx or from the severity of the constitutional symptoms. Here the deeper layers of the pharynx may be practically free from pus.

The most prominent symptom in all submucous affections is dysphagia. This is due partly to the presence of the swelling, but mostly to the pain caused by pressure on delicate nerve endings. Trismus is also largely reflex in order to prevent pain.

3. *Suppuration arising in the subaponeurotic layer of the pharynx.*—To suppuration occurring in the space between the pharyngeal aponeurosis and the prevertebral fascia some writers would confine the term "retro-pharyngeal abscess." This, however, appears to me to favour the looseness of thought which in the past has done so much to prevent a clear understanding of the various processes which may result in an abscess in this region.

Adhering to the classification proposed above, the term "subaponeurotic suppuration" would include not only an abscess originating in the deep cervical glands and presenting at the back of the pharynx, but also the particular form of submaxillary phlegmon known as "angina Ludovici," while it would exclude an abscess the origin of which was due to caries of the cervical vertebræ or caseation in the post-pharyngeal gland.

4. *Prevertebral suppuration.*—The last of the forms of suppuration in the pharynx is that with which the name of retro-pharyngeal abscess is almost always associated in the mind of the general practitioner. Arising not in the

pharynx but as an abscess either of the vertebræ or of the lymphatic glands adjacent thereto, it has in reality no right to be designated as pharyngeal, and the name "prevertebral" ought, I think, to be employed instead to describe this condition. A prevertebral abscess may, of course, arise as a result of a penetrating wound of the pharynx, just as an abscess of the lung may result from a stab of the chest-wall, but in the latter case we describe the disease in association with the organ in which it is found. The subject of caries of the cervical vertebræ and of caseation of the post-pharyngeal glands, therefore, while of great interest to the surgeon, need not be exhaustively treated of here, for it is a subject which has been adequately dealt with by more than one writer. One or two points in connexion with diagnosis may be referred to. The history alone will do a great deal to enable us to distinguish the other three forms of suppuration from this one. The sufferer is often a child or young adult and the accompanying signs of spinal caries are mostly fairly evident. The duration, the absence of fever, the lack of muscular rigidity except where actual deformity exists, and the slow onset of dysphagia will decide us in making a diagnosis. The pus may present either in the middle line or laterally, and the presence of fluctuation will distinguish from sarcoma, while there is no superficial bleeding when the swelling is touched, as in the latter disease. The prognosis depends upon the extent of the spinal mischief and to some extent on the care with which the treatment is carried out, for although the symptoms may not appear urgent the tendency for the pus to track downwards, and so beyond the reach of the surgeon, and the risk of secondary infection if the abscess opens into the pharynx are considerations of weighty import in dealing with a case of this kind.

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A CASE OF ACUTE MYELITIS WITH OPTIC NEURITIS (NEUROMYELITIS OPTICA).

BY ERNEST F. CLOWES, M.R.C.S. ENG., L.R.C.P. LOND.

With Remarks by Dr. FREDERICK TAYLOR, *Consulting Physician to Guy's Hospital.*

THE following case of this interesting form of disease came under my care last year, and I have thought it worthy of publication. Dr. Frederick Taylor, who published a case of the kind some years ago in the *Guy's Hospital Reports*, Vol. LIII., p. 45, has very kindly added some remarks as to the literature of the subject.

The patient was a single woman, aged 39 years. She had two brothers and two sisters. The brothers were both healthy, but very sensitive and highly strung men. One of the sisters was very neurotic and had frequent hysterical attacks, and the other was mentally deficient. The father had died from senile decay at the age of 90 years and the mother from cerebral hæmorrhage when 78 years old. By all her family the patient was always regarded as very capable and industrious, and she was endowed with a strong personality which clearly dominated the whole circle. She came home from her situation to attend her mother's funeral, and remained at home afterwards to assist her sister, who was greatly pressed with her business; and to complete an order the patient and her sister worked for two whole nights. When the work was finished the patient delivered it, and coming home was caught in a severe rainstorm and got wet through. She had a hot bath and went to bed at 7 P.M.

On the following morning (July 14th) the patient was awakened at 2.30 A.M. by a severe "stabbing" and "burning" pain in the spine "just below the shoulder-blades." The pain radiated round to the front of the chest; it was agonising. Hot flannels and other means were tried, but the pain persisted in severity, and I was called to see her at 5 30 A.M. I found her sitting up in bed absolutely rigid and grasping the sides of the bedstead with each hand, thus keeping the body and neck perfectly straight. Her eyes were fixed and looked directly forward. She was quite sensible, and when I asked her what she complained of she said that if she moved in the slightest degree she had intense pain just below the "shoulder-blades." I proceeded to examine the back, but the movement of the bed-clothes caused her to shriek out with agony. The pulse was rather full, but regular, 73 to the minute, and the respirations were 18 to the minute. I injected hydrochlorate of morphia (gr. ¼) and waited to watch its effect. In less than 15 minutes the patient said she felt drowsy, and moved her head a little to the right side, and asked for some milk; she then gradually levered herself down into the recumbent position and dropped off to sleep. I saw her again at 11.30 A.M. and found her still lying down in the bed. She had had five hours sleep, and was fairly free from the pain in the back, so that I could make a more detailed examination. She did not look ill, and had a bright complexion. She complained of not being able to see clearly with the right eye, and said the left was also very weak. Round her waist she said there was a feeling as if a broad elastic band was applied very tightly, and the skin over this area was so tender that she could not bear the weight or touch of the bed-clothes. The right leg was everted and she said it felt weak; there was marked loss of power in this limb. The left leg was not everted, and apparently had normal power, as she could flex it against considerable pressure. There was no loss of power in the arms and a good strong grasp was present in each hand. There were no sensory changes in the legs or thighs; the patient was quite sensitive to the touch of a feather or pin anywhere, and could locate accurately the slightest touch. Over an area in front limited above by a line drawn round the chest about an inch below the nipples, and below by a line drawn round the abdomen 3 inches above the umbilicus, there was marked hyperæsthesia; touching the patient with a feather anywhere over this area, back or front, caused intense pain. Over the face, head, arms, chest, and back sensation was normal. In the right limb the knee-jerk was absent. Plantar reflex was also lost, but ankle clonus was very marked. In the left limb a very faint knee-jerk was present, but no plantar reflex and ankle clonus could be obtained. If either foot was flexed the foot remained so for a short time, the muscles slowly relaxing. There was no wasting of muscle in the legs, arms, or hands. The electrical reactions could not be tested. The bladder and rectum were unaffected. Of the special senses hearing was perfect. When tested for smell with the left nostril closed the patient could not detect the smell of ordinary scent (lavender water) or even the smell of an onion. With the right nostril closed she could but faintly tell the difference between the two scents mentioned. In taste a little liquor strychninæ applied to the left half of the tongue could not be appreciated, but when it was applied to the right half she could easily distinguish the bitter taste. Sugar and salt when applied to each half of the tongue could be distinguished on the right half but not on the left. Motion and tactile sensation in the tongue were normal. The patient could distinguish heat from cold when tried in the lower part of the body or limbs. The pupils were equal and they reacted to light and accommodation, there was no oculo-motor paralysis, and apparently no limit to the visual field except in the right eye. The right disc was blurred and indistinct but the left only slightly so. The urine was acid, of specific gravity 1016. No albumin or sugar was present.

July 16th: The patient had passed a very restless night. The pain in the back was most severe. She had tried to get out of bed and had badly bruised the left shin and knee. Sensory changes had developed since the day before and she could not tell the touch of a feather from that of a pin. When the left leg was touched she said it was the right. The left leg had lost its power and it fell quite limp when raised and allowed to fall. The reflexes remained the same as on the day before. She said her eyesight was more dim. The bladder and rectum remained unaffected and the band of hyperæsthesia remained the same in extent as before. The temperature was 100·4° F. From the 17th to the 21st the patient's condition remained unchanged.

July 22nd: The patient had had a bad night, and the motor symptoms had greatly changed. There was now almost total paralysis in the lower limbs and the knee-jerks were absent. Plantar reflexes could not be obtained, but marked ankle clonus was present. There was total anæsthesia over the lower limbs, extending upwards almost to the umbilicus. Breathing was almost entirely abdominal. The bladder and rectum remained unaffected. The arms, neck, and head could be moved easily and apparently without any loss of power. Both optic discs remained very blurred,

and the patient complained of great dimness of vision. She was moved to a cottage hospital, and all her symptoms slowly increased. On the 27th she had retention of urine and the catheter had to be used. Marked dysphagia set in, and she died at 5.30 P.M. suddenly while trying to swallow some milk. No post-mortem examination was allowed.

REMARKS BY DR. FREDERICK TAYLOR.

The case above recorded is an instance of a combination of lesions which excites interest, partly on account of its relative rarity, and partly from the difficulty in explaining the occurrence of the inflammatory lesion in two parts so remote from one another. When I published a case of the kind in the *Guy's Hospital Reports* in 1896 I was able then to give a bibliography of 25 references. Other cases have been since published, and in his thesis for the Doctorate of Medicine of Paris, 1907, Dr. H. J. T. Hillion gives 49 references, and reports more or less fully 45 cases dating from 1879 onwards. My own case is not given or referred to by him.

The name "la neuro-myélite optique," or neuromyelitis optica, was first proposed by Devic in 1894, and under that name recent cases have generally been recorded. I do not regard it as a happy one, since the application of the epithet "optic" to the substantive "myelitis" makes sheer nonsense; but it is very difficult to find a suitable alternative. Some French writers speak of it as Devic's disease—*maladie de Devic*. But after all there is not much more in it than the apparently accidental co-existence of optic-neuritis and myelitis; accidental because an explanation of the association of optic neuritis with myelitis is not so easy to find or suggest as that of an association of optic neuritis with a cerebral lesion. Hillion says under "Definition," "The name, acute neuromyelitis optica, is employed for a clinical syndrome characterised by a diffuse myelitis, most often acute, preceded, accompanied, or followed by an optic neuritis of parallel evolution."

Thirteen years previously to the publication of Hillion's treatise Gault had published his Doctor's thesis, at the University of Lyons, on the same subject, based on a fully reported case under Devic's care. The conclusions do not materially differ from those of Hillion, and very little seems to have been added in the interval between the appearance of the two theses.

As a result, the following propositions may safely be made.

Double optic neuritis is occasionally seen in association with acute myelitis. The optic neuritis generally precedes the myelitis by some days or weeks; but it may occur simultaneously, or first appear some days after the onset of the myelitis. The neuritis is in some cases only shown by a temporary amaurosis; in others there is obvious papillitis. The myelitis is, as a rule, not different in its symptoms and course from myelitis unassociated with an ocular lesion. The prognosis of the case must depend on the severity of the myelitis, and the mortality has been about 50 per cent. The optic neuritis has often subsided, and vision has been recovered.

There is no satisfactory conclusion as to the nature of the lesion; most authors are inclined to regard it as infection attacking the cord and the optic nerve separately. The evidence is strongly against the spread of infection, or inflammation, from the spinal cord to the optic nerve.

Pathologically, the lesion of the cord is seen to be a diffuse or disseminated myelitis, affecting either the cervical or dorso-lumbar region, or both; and histologically, in some cases, numerous endothelial cells undergoing fatty degeneration have been found around the vessels in the affected parts. To these importance has been attached by some authors, but others are satisfied that such elements are not peculiar to those cases. In a few of the fatal cases some indications of encephalitis have also been present. In two cases by Auerbach there was clinical evidence of cranial nerves being involved; and in the present case there were noted a diminution in the sense of smell and loss of taste in the left half of the tongue. A reference to a few cases will show some of the points of difference among them.

In my own case vision declined and was lost in the course of two days, and paralysis of the legs began a fortnight later. No papillitis was ever observed, but the optic discs were atrophied three months later, and I inferred that there had been a retrobulbar neuritis. Some improvement nevertheless took place in the patient's vision for a time to the extent of her being able to see objects, but it was still much impaired 12 months later. The arms were slightly involved, and hyperæsthesia of the chest wall was present at the upper border of the fourth costal cartilage. The patient died after 14 months' illness. There was no post-mortem examination.

The case which forms the subject of this paper was much more rapid. The disease was an acute ascending paralysis, commencing with indications of meningitis in the form of acute pain and spinal rigidity. Vision was impaired on the following day, and on the day after this evidence of slight papillitis, more on the right side, was observed. The upper limit of hyperæsthesia was one inch below the nipples. On the ninth day of illness the breathing was almost entirely abdominal, but the arms could be moved apparently without any loss of power. On the fourteenth day marked dysphagia set in, and she died while attempting to swallow fluid.

Dr. T. D. Acland read a case in June last before the Association of Physicians of Great Britain and Ireland. He has not yet published it, but has kindly allowed me to mention the following main facts. The patient was a man, 38 years of age, who was admitted into St. Thomas's Hospital on Nov. 12th, 1910, complaining of total blindness in both eyes, partial loss of power in both legs and in the left arm, loss of sensation over the lower part of the body and legs, and loss of control of the sphincters. The illness had begun eight days previously. The symptoms pointed to a considerable lesion of the spinal cord, extending, with intermissions, from the cervical enlargement to the lumbar enlargement, and affecting both grey and white matter. The right fundus showed thrombosis in, and hæmorrhage from, the retinal vessels, and it was thought probable that there was thrombosis of the vessels spreading across the chiasma. Two months after the onset the right disc showed signs of post-neuritic atrophy, and the left showed signs of primary atrophy. Three months after the onset the patient left the hospital, with no obvious loss of power in the legs, and with no difficulty in micturition; but he was completely blind.

Dr. James Taylor and Dr. J. Collier published a series of 12 cases of ocular lesions associated with spinal disease, in *Brain*, 1901, p. 532. Five of these are included by Dr. Hillion in his thesis as cases of optic neuromyelitis. In the other seven cases the spinal lesions were: Chronic myelitis, 1; spastic paraplegia, 1; caries of the spine, 1; fracture-dislocation, 1; hæmatomyelia, 1; and tumour of the spinal cord, 2. The interest of these latter cases is that they show that the spinal lesion associated with the optic neuritis is not necessarily an acute inflammation; and hence the difficulty of explaining the occurrence of the ocular lesion in neuromyelitis optica is increased. Dr. James Taylor and Dr. Collier show that the spinal lesion frequently, if not always, reaches as high as the upper dorsal or cervical region of the cord.

Wotton-under-Edge.

CENTRAL MIDWIVES BOARD.—A meeting of the Central Midwives Board was held on March 14th at Caxton House, Westminster, with Sir Francis H. Champneys in the chair. A letter was considered from the medical officer of health for Devonport inquiring: (1) As to the giving of a certificate of stillbirth by a midwife; (2) as to the attendance at a confinement of a pupil midwife not under the immediate supervision of a certified midwife; (3) as to whether, in the opinion of the Board, a midwife's superficial examination of the dead body of a child entitles her to certify that the child has not breathed. The Board directed that the medical officer of health for Devonport be informed that the replies to his questions are as follows: (1) That the midwife was wrong in giving a certificate of stillbirth as she was not present at the birth; (2) that the trainer is responsible for each case attended by a pupil; (3) that this question is covered by answer (1). A letter was considered from an inspector of midwives as to the extent of the obligation to attend to the comfort of the mother and child entailed on a midwife by Rule E. 11. The Board decided that the reply be that the midwife is responsible if the baby is not properly cared for.

DECORATIVE SURGERY.

BY W. H. BATTLE, F.R.C.S. ENG.,
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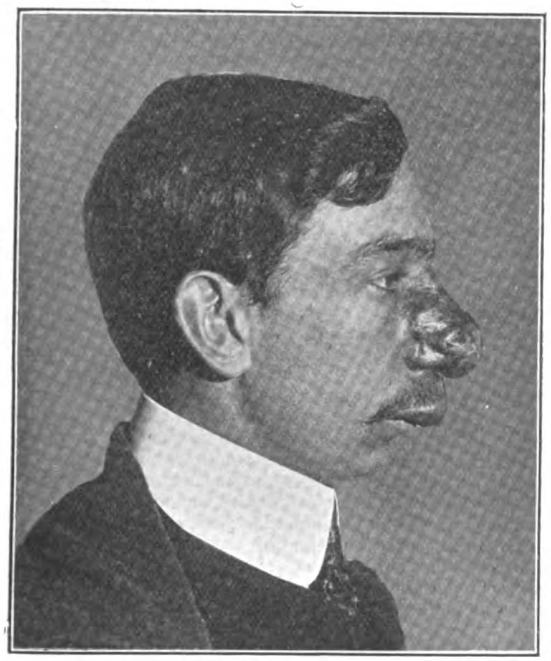
THE following three cases illustrate the importance of this branch of the surgeon's art to which allusion was recently made in an annotation in THE LANCET.[1] They also illustrate the fact that there is usually more than the mere appearance of the patient to be considered. In the two cases with vascular growths it was necessary to operate because of the increase in the disease; whilst in the cirsoid aneurysm there was also the danger to the life of the patient because of the liability to hæmorrhage which so often proves fatal when these growths have become large. In the third case removal was imperative to enable the man to follow his occupation.

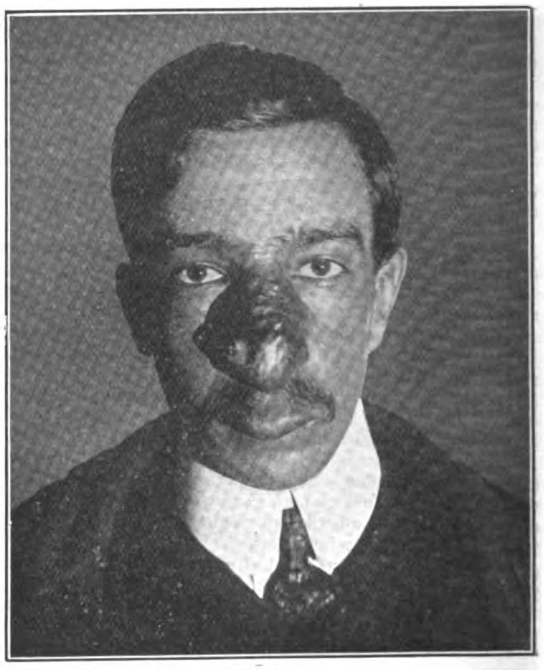
CASE 1.—In the year 1906 a patient was sent to me with a letter from Dr. P. Clennell Fenwick, of Wanganui, New Zealand. This patient, aged 24 years, had considerable disfigurement of his face in consequence of a congenital hæmangioma which affected it and the upper lip. He was not a man of means, and in order to assist the sum which he was able to get together for the expenses of the trip he offered himself as a steward for the voyage. The agents of the shipping company refused to allow him to take the post because it was thought that the passengers would be upset by his appearance. A few days after his arrival he was admitted to St. Thomas's Hospital, and remained there from June 18th to Sept. 12th, some weeks after which he returned to New Zealand.

FIG. 1.



Pulsating nose, side view.

FIG. 2.



Pulsating nose, front view.

The reproductions of the photographs (Figs. 1 and 2) show very well the general appearance of the nose. This caused him no pain, but he was much worried by the observations which were made about his appearance by strangers, and he found it difficult to get employment. On more than one occasion he had suffered from hæmorrhage. The nose was very large, appeared bulbous, was of a purplish-red colour, with some superficial dilated veins, and visibly pulsated all over. To the touch it was rather compressible, diminishing much in size, and rapidly filling out again when pressure was relaxed. The condition extended upwards between the eyes and downwards into the mid-portion of the upper lip, which was large and prominent. There was not much change in the mucous membrane of the nostrils.

On July 11th ligatures were applied to the external carotid, the superior thyroid, and the facial arteries on both sides. After these wounds had been closed the whole of the disease of the nose was cut away, leaving only the bony and cartilaginous framework. On the 15th electrolysis of some outlying portions of tissue was done. On the 27th this operation was repeated and the central portion of the lip was excised with part of the columella nasi. On August 3rd a flap of skin from the forehead was turned down after the Indian method to cover the granulating surface. It was adapted by its size and saddle-shape to cover the granulating surface, but no columella nasi was required, it being sufficient to excise a median portion, as the whole columella was too thick. On the 27th the denuded surface was grafted.

Dr. Fenwick has recently told me that the result of the operation at the present time is very satisfactory, as the man is pleased with his improved appearance and is able to make a living in an occupation which takes him much amongst strangers.

CASE 2.—In the case of the baby (shown in Figs. 3 and 4), under care in the children's ward, St. Thomas's Hospital, 1909, the nævoid growth gave him a wonderfully ancient appearance. It was, however, of limited extent, without pulsation, and yielded to treatment by electrolysis and the application of nitric acid. Nævoid growths on the nose are not very uncommon, but they do not often produce such a grandfatherly aspect as that which we found here.

CASE 3.—Figs. 5 and 6 show the common disease of lipoma nasi, or rhinophyma, and is only interesting from the fact that the patient had to have an operation. He was a tailor, and said that he did not care about his personal appearance, but was unable to work because his nose prevented his seeing to thread his needle. For some time he had managed by holding his nose down and his hands high up, but recently this expedient had failed him, and he was obliged to seek surgical assistance. The disease was treated in the usual manner, and he was much pleased with the result.

[1] THE LANCET, Jan. 6th, 1912, p. 38.

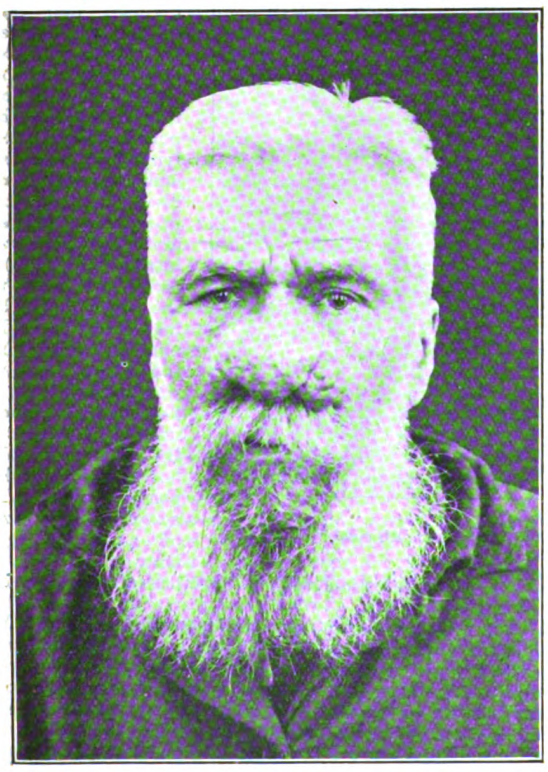
FIG. 3.

Nævus of nose, side view.

FIG. 4.

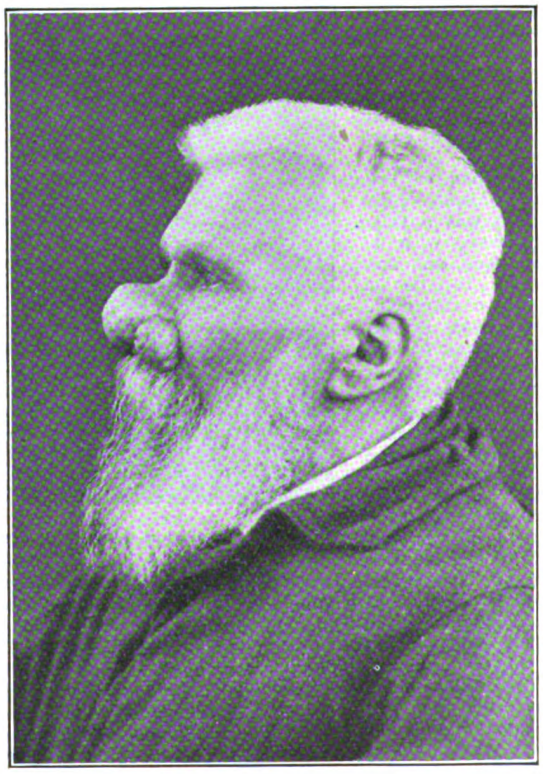
Nævus of nose, front view.

FIG. 5.



Rhinophyma, front view.

FIG. 6.



Rhinophyma, side view.

Note.—The chief interest of these cases lies in the extent of the disease which is shown in the illustrations. It is a matter of regret that I am unable to produce photographs of the patients as they appear now, but from the notes it will be seen that the result in the case of the adults was satisfactory, whilst in the second case there has been no return of the nævus and the mother appears satisfied.

A CASE OF PHARYNGEAL DIVERTICULUM.

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AND
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THE number of reported cases of pharyngeal diverticulum is small, and the points of interest in the treatment of this case make it worthy of publication.

The patient, a labourer, aged 40, formerly a soldier, complained of difficulty in swallowing, and he stated that for the past five years he had always returned a small quantity of food after each meal. These symptoms gradually increased in severity, and for the last three months he had noticed a swelling on the left side of the neck, which increased in size after taking food. If he compressed the swelling about an ounce of food and saliva regurgitated into the mouth, and this had increased in quantity during the past few months. Recently the difficulty in swallowing had become more marked towards the end of a meal, being distinctly noticeable after the first few mouthfuls. In addition he volunteered the statement that he was "short of breath" after food and on slight exertion.

Condition on examination.—The patient was a tall, thin man, with a long neck, and appeared to be a healthy countryman. There was fulness and bulging of the left sterno-mastoid muscle immediately below the level of the cricoid cartilage, and the swelling became more marked after taking food. On giving the patient food he was able to swallow the first few mouthfuls without trouble, but in order to take more he had to turn the head to the right and to flex the neck. By compression of the pouch he was able to return about half a teacupful of food. Examination by the laryngoscope showed a normal larynx and trachea.

Radiogram taken by Dr. Ironside Bruce after a bismuth meal.

The patient was then examined by the œsophagoscope. The pouch was emptied by compression, and the patient directed to wash it out by drinking and regurgitating water. The pharynx was then swabbed with a solution of 20 per cent. cocaine and adrenalin, and the œsophagoscope was introduced. At the level of the upper edge of the cricoid cartilage the orifice of the œsophagus was seen as a narrow slit, but on the posterior wall a larger opening was seen through which the tube passed easily, but after this point the view was obstructed by frothy saliva.

The tube could be passed another three inches, but was then obstructed. From this it was gathered that the pouch was about three inches in length. The tube could be passed into the œsophagus and no stricture was observed, but at this stage the patient became intolerant.

The radiogram taken after a bismuth meal, by Dr. Ironside Bruce is depicted, and was most valuable. The pouch was shown on the left side of the œsophagus and extended behind the clavicle.

With the X ray screen a flexible bougie which had been introduced could be seen in the œsophagus, and was obstructed about 10 inches from the teeth. The first few mouthfuls of the bismuth meal could be seen as large boli passing rapidly down the œsophagus, but as the pouch filled the boli became smaller and swallowing became more difficult.

Operation.—On Oct. 8th, 1910, Mr. Waggett operated and invaginated the pouch, a method described by Professor Girard.[9] The pouch was previously washed out by the patient swallowing and regurgitating boric lotion; he emptied the pouch by compression of the neck immediately before taking the anæsthetic. Chloroform was given without the administration of morphia or atropine.

An incision 4 inches in length, with its centre opposite the cricoid cartilage, was made along the anterior border of the left sterno-mastoid. The anterior border of the sterno-mastoid was defined and the muscle retracted outwards. The anterior belly of the omo-hyoid was then divided, and the dissection continued with Kocher's director between the carotid sheath and the trachea. The pouch was exposed lying free in a sac and requiring no dissection. At this point a silver urethral catheter was introduced by the mouth, but owing to the curve of the instrument it could not be passed into the pouch, and it was replaced by a flexible olive-headed bougie. The end of the instrument could be easily felt in the pouch, which was about the size of a hen's egg, and resembled a piece of small intestine with a net-work of veins on its surface.

It was found to open from the posterior wall of the œsophagus above the level of the cricoid constriction and opposite the cricoid cartilage. After careful isolation it was invaginated and pushed downwards into the œsophagus. There was no stricture of the œsophagus, and two fingers could be passed downwards with ease. When the pouch had been invaginated, its orifice appeared to be a small slit less than one inch in length in the wall of the œsophagus. If the patient vomited the pouch was extruded, and in order to produce vomiting the anæsthetic was stopped and the fauces tickled. Finally, the pouch was again invaginated and the slit-like orifice in the wall of the œsophagus was closed by one layer of four interrupted silk sutures. The patient was again made to vomit and the pouch proved to be secure. It remained in the œsophagus and was not again extruded. A

drainage-tube was inserted at the lower end of the wound, which was closed by deep and superficial stitches. A Symonds's œsophageal tube was passed through the nose into the stomach, but it was vomited on recovery from the anæsthetic. The tube was not reintroduced because its presence promoted vomiting and worried the patient.

The next day the patient swallowed 4 oz. of water without discomfort and was ordered soup and beef-tea. In addition he was given rectal enemata of glucose and saline, and from this point he made an uninterrupted recovery. The wound healed by first intention, the drainage-tube was removed on the fourth day, the patient got up on the sixth day, and he left the hospital on the fourteenth day.

On Jan. 27th, 1911—i.e., 3½ months after the operation—the patient was seen again, and said he could swallow anything without difficulty. He was examined with the laryngoscope and œsophagoscope, and the invaginated pouch could be seen as a pale polyp projecting upwards immediately behind the cricoid cartilage. It was proposed to admit the patient and to remove the polyp with the cautery snare introduced through the œsophagoscope. The patient was to have been shown that afternoon at the Polyclinic, but unfortunately he disappeared.

In August, 1911, the patient returned complaining that he had sneezed violently and felt "something break in his neck," and after this occurrence the old symptoms of difficulty in swallowing returned. The swelling of the neck was noticed, and a radiogram, following the bismuth meal, showed a pouch in the same position as before and of about the same size.

Second operation.—Mr. Waggett operated again on Oct. 5th, 1911, and on this occasion the pouch was isolated without difficulty. It was slightly adherent to the surrounding parts, but in other respects had exactly the same appearance as on the first occasion, being covered by the close network of veins, which had somewhat limited the number of stitches inserted at the invagination operation. The neck of the pouch was clamped and divided between forceps. The stump was carefully stitched with a continuous silk stitch and then buried by a layer of Lembert sutures. The wound was closed and drained as before.

The after-treatment consisted of keeping the patient in the prone position with the head low. He was fed by rectal enemata for three days and then allowed to take water by the mouth; this was not followed by leakage through the wound. On the sixth day he was given soft solid food. He made an uninterrupted recovery, and the wound healed by first intention, with the exception of the point where the drainage-tube was inserted, and that healed a few days afterwards. When the patient left the hospital he could swallow without the slightest difficulty or discomfort.

Remarks.—The following remarks are based upon a careful perusal of the records of cases of diverticula of the pharynx and œsophagus reported in English.

The symptoms and signs in the case recorded above were so well marked that the patient and his friends had made the diagnosis. The regurgitation of food, which increased with compression of the neck, was the most prominent symptom, and occurred in all the recorded cases; in the early stages it was difficult to differentiate cases of diverticula from those of stricture. The radiograms were most valuable, more especially after the recurrence of the pouch.

Anatomically this case corresponds exactly with that series of ten cases of retro-cricoid diverticula of the pharynx collected from the London museums, and described by Professor Arthur Keith In his demonstration at the Royal College of Surgeons of England. The demonstration is reported, and the reader is referred to the excellent description and diagrams of the report.[1] Professor Keith showed that these diverticula were sacs composed of the mucous and submucous coats, which had become gradually evaginated between two definite parts of the inferior constrictor muscle, consisting of the upper part, which acts as a force-pump, and the lower part, which is sphincteric in nature.

The observations made at the time of the operations in the above case, with the examination and microscopy of the sac, correspond in every detail with Professor Keith's description. The case recorded above was a propulsion pouch which originated from, first, a weakness of the œsophageal wall; secondly, increased pressure within the œsophagus. It will be seen that it corresponds in pathology to a hernia through the abdominal wall.

With reference to the first factor—*weakness of the œsophageal wall*—Professor Keith has established the fact that there is a weakness in the position indicated above. Professor Halstead,[2] in a paper in which he discusses the cause of propulsion diverticula, refers to a weakness in the posterior wall of the œsophagus immediately below the inferior constrictor muscle.

The late Professor Birmingham[3] described a triangular interval in this position, which is formed by a separation of the longitudinal muscular fibres into two bands which diverge and pass upwards on the front of the œsophagus and are attached by a tendinous band to the upper part of the back of the cricoid cartilage. The triangular interval, which is about 1¼ in. in length and is formed by the diverging bands of longitudinal muscular fibres, is sometimes known as the Lannier Hackerman area. The narrowest part of the œsophagus and the circular fibres of the inferior constrictor, known as the cricoid constriction, are above this point. Halstead records in the same paper the case he treated by invagination of the sac, in which the neck of the sac was below the lower edge of the cricoid cartilage and the sac apparently became evaginated through the Lannier Hackerman area of the œsophageal wall.

Mr. William Robinson[4] in the report of a case in which he excised a diverticulum, states that he dissected the œsophagus of a woman, and could not find the deficiency of the longitudinal muscular fibres in the triangular interval described above, but Professor Birmingham has clearly demonstrated that the deficiency does exist. The pouch in Mr. Robinson's case was connected to the œsophagus at its extreme upper end.

Mr. Bilton Pollard[5] describes a similar case and definitely states that the diverticulum arose immediately below the inferior constrictor in the mid line and through the triangular interval. Mr. W. Taylor's[6] description of another case tends to support Mr. Bilton Pollard's conclusion as to the position of the opening of the diverticulum.

One of the authors (E. D. D.) dissected a few specimens of the œsophagus obtained from recent necropsies, and the triangular interval in the longitudinal muscular coat was not easily made out. When the dissected œsophagus was subjected to water pressure by attaching one end to the tap and securing the other there was a uniform dilatation of the œsophagus below and above the circular and sphincter portion of the inferior constrictor. The circular fibres of the constrictor appeared as a waist belt, and no weakness could be demonstrated on the wall of the œsophagus immediately below the inferior constrictor. Moreover, small incisions were made through the longitudinal muscular coat and prolonged water pressure applied, but neither sacculation nor dilatation occurred at the incisions, showing that the remaining portion of the wall of the gullet was strong enough to resist any protrusion of the mucosa.

Halstead also refers to cases recorded by Freiburg, and others in which the œsophageal wall was weakened by traumatism, the result of impaction of a foreign body or by rupture in cases of severe injury. In these cases the diverticula developed rapidly, and resulted in starvation and death.

With reference to the second factor in the cause of propulsion diverticula—*increased pressure* within the œsophagus—in a few cases there was a stricture, but in most neither stricture nor stenosis of the œsophagus was discovered. Professor Keith has drawn attention to the circular fibres forming the lower part of the inferior constrictor, which acts as a sphincter, and in the case recorded above this circular band was well developed, producing a possible functional stenosis below the pouch. In Professor Halstead's case it will be noted that this constriction was stated to be above the opening of the pouch, and this fact does not support his theory that diverticula evaginate through the Lannier Hackerman area. A similar condition appeared to have existed in Mr. Bilton Pollard's case, to which reference has been made.

Stenosis of the œsophagus has been known to produce dilatation of the tube above the point of stenosis. One of the late Sir H. T. Butlin's[7] cases (Case 6) was a wind instrument player, and the increased pressure produced in the œsophagus by such an occupation was considered to be a determining factor in the formation of the pouch he developed. Even a persistent severe cough is recorded as being a possible cause (Bilton Pollard).

The theory that these pouches are of congenital origin has been abandoned for several reasons.

The most successful treatment of diverticula of the pharynx is by operation. Richardson [8] states that of the 56 cases recorded before May, 1900, 18 were treated by operation, 16 of the 18 by excision, and 2 by the invagination method described by Girard.[9] Since 1900 Butlin has recorded 12 cases, in 8 of which the pouch was excised. Charles Mayo [10] recently records 8 cases; 6 were excised.

Halstead recorded one case of invagination, but in a recent private communication he states that he has had two more cases of diverticula. In one case the diverticulum was dissected out of its environs, and left intact outside the neck until the cavity occupied by the diverticulum had closed, and then at the second operation the diverticulum was removed, after the danger of mediastinal infection had passed. Unfortunately, the patient died from pneumonia. In the other case the diverticulum was successfully resected and the stump invaginated by sutures. W. Robinson, Bilton Pollard, and W. Taylor recorded three more cases treated by excision.

In the majority of the recorded cases of excision there was leakage of food into the neck, and the resulting risk of infection. For that reason Mr. Waggett decided to treat the above case by invagination. Of the two cases of invagination recorded by Girard one case was eminently successful, but in the second case a fistula resulted, and closed later.

Halstead describes his case of invagination more minutely, in which he put a purse-string suture around the neck of the sac and invaginated it, and covered the stump with three layers of sutures. The patient did well and made an uninterrupted recovery. Halstead states that invagination is only suitable for those cases in which the sac is small, and the lumen of the œsophagus is normal.

In some cases of emaciation and starvation a preliminary gastrostomy was performed, but it was unnecessary in our case. In one case, that of an old man, the patient was taught to empty the pouch by compression and to syringe it out with boric lotion after taking food, but he was ultimately operated on with success.

Recurrence of the pouch after excision appears to be rare. Butlin records that seven of his cases had no recurrence of the symptoms and that all of the seven patients were well. Mr. Bilton Pollard's case was quite well two years after the operation. An attempt to ascertain whether the three cases of invagination reported by Girard and Halstead had recurred was unsuccessful. No later information concerning cases of invagination could be obtained.

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THE DIETETIC TREATMENT OF DIABETES.

BY P. J. CAMMIDGE, M.D. LOND.

ALL attempts at a specific or etiological treatment of diabetes have so far proved unsatisfactory, so that careful dieting is still the only reliable means we have of combating the condition. The more intimate knowledge, gained in recent years, of the chemical disturbances that are associated with glycosuria has placed the principles of its dietetic therapy on a much surer foundation, and permits of more accurate and scientific means being taken to adjust the food-supply to the metabolic powers of the body than was formerly the case. The aim of the modern treatment of diabetes is to balance the diet in such a way that nutrition is as perfect as possible without there being an unnecessary strain on the organs of metabolism in any direction.

It is now generally recognised that, while the administration of carbohydrates in larger amounts than the defective metabolic powers of the diabetic can deal with is injurious, their permanent exclusion from the diet is often not only unnecessary but positively harmful. A temporary exclusion is in some instances necessary and beneficial, for not only is the excess of sugar in the blood diminished so that the cause of many of the troubles to which diabetics are liable is lessened or abolished, but at the same time the metabolic powers, like a released spring, often recover their tone to a surprising extent, and the tolerance for carbohydrates is materially increased. Similar results are obtained in other cases by restricting the carbohydrates, both in quantity and kind, until the glycosuria is controlled.

Some diabetic patients have a marked susceptibility to proteins, which may yield 45, and in some instances 60, per cent. of sugar, so that their glycosuria is diminished more by restricting the protein intake, and allowing carbohydrates, than by excluding the latter altogether. The proteins of vegetables are, as a rule, found to be less harmful than those of meat, and consequently periods of vegetable feeding may be advantageously introduced into the treatment. For the same reason prepared vegetable proteins, soy beans, &c., may be made to replace meat to some extent in the ordinary diabetic diet.

No routine line of treatment, however sound it may be in principle, can be applied to all cases; the metabolic powers of each patient must be experimentally determined, and a diet adapted to his peculiarities and requirements be worked out—that is to say, we must treat the *patient*, not the *disease*.

Having discovered that a patient is passing sugar in his urine, the first point to settle is the gravity of the case. For this purpose we must ascertain: (1) the intensity of the diabetes; (2) the presence and degree of secondary abnormalities of metabolism; and (3) whether any disturbance of nitrogenous equilibrium exists. To this end the urine passed in 24 hours is collected, measured, the usual qualitative tests performed, and the total excretion of sugar, nitrogen, and ammonia nitrogen quantitatively determined.

1. In order that an accurate estimate may be formed of the power the patient possesses of dealing with sugar—that is, of the intensity of the diabetes—it is necessary that the intake, as well as the output, should be known. The latter is given by the urinary analysis; for the former the patient is put upon a diet of known composition, both as regards quantity and kind, for 48 hours before the urine is collected.

Since the amount of dextrose in the urine is dependent not only upon the quantity of ingested carbohydrate, but also upon the intensity of protein metabolism, the possible maximum of sugar that can be derived from broken-down protein must be included in the intake. According to Rubner, each gramme of protein nitrogen may correspond to 5 grammes of dextrose, so that if the total urinary nitrogen is multiplied by 5 the result will represent the sugar that may possibly be derived from protein, and this, plus the carbohydrate of the food, will represent the total sugar available for nutrition. If now the total output of sugar in the urine is divided by the total available sugar a figure is obtained that indicates the relationship between the two. Multiplied by 100 this figure gives the percentage of sugar eliminated unused, or Falta's "coefficient of excretion." [1]

On the ground that experiment has shown a constant dextrose to nitrogen ratio of 3·65 to 1 in the urines of dogs in which glycosuria has been produced by injections of phloridzin, after their glycogen store has been exhausted, and also in very severe human diabetes, when the patient was given a diet of meat and fat, Lusk [2] has suggested that the figures 3·65 should be substituted for 5 in determining the proportion of urinary sugar possibly derived from protein. This modified formula, which I now employ in my work, is stated as follows:—

$$\frac{\text{Total dextrose in the urine} \times 100}{(\text{Total urinary nitrogen} \times 3{\cdot}65) + \text{Food dextrose}} = \left\{\begin{array}{l}\text{Coefficient of}\\ \text{excretion.}\end{array}\right.$$

In collecting the urine for these analyses care should be taken that an early morning hour (before breakfast) terminates the 24 hour period. This is necessary, since the dextrose arising from the ingested proteid is eliminated before the corresponding nitrogen, and the long fast between the evening meal and breakfast allows of the excretion of both constituents. [3]

The coefficient of excretion may vary from 100 to 0, the former figure being obtained when there is total absence of tolerance for sugar, and the latter when carbohydrate intake and metabolism are balanced. It furnishes a definite numerical indicator of the severity of a diabetes in much

[1] Arch. Int. Med., 1909, p. 159.
[2] Journal of the American Medical Association, Dec. 17th, 1910, p. 2106.
[3] Lusk: The Science of Nutrition, 1906, p. 241.

the same way as a blood count and the hæmoglobinometer indicate the severity of an anæmia, or the thermometer shows the course of a fever. By determining the coefficient of excretion one case can be compared with another, and the progress of the same case can be judged from time to time more accurately than by the more commonly employed methods.

2. Of the secondary disturbances of metabolism that occur in diabetes, the most important is that associated with the imperfect oxidation of fats and proteins. The fatty acids contained in fats, and some of the oxy-acids formed in the breaking down of proteins, yield beta-oxybutyric acid if oxidation is incomplete. Thrown largely as it is upon its fat-burning powers to furnish the energy it needs, the diabetic organism may find that its capacity in this direction is also curtailed, with the result that beta-oxybutyric acid and its derivatives, aceto-acetic acid and acetone, are formed and excreted in the urine. The most serious result of the formation of these "acetone bodies" is the liability to diabetic coma. It is believed that they themselves are not toxic, but that they exert their poisonous effects in virtue of their acid properties; hence the condition in which they are present is spoken of as an "acidosis."

It is therefore important to detect the presence of these substances in the urine, and to estimate the degree of acidosis that exists. Unfortunately, there is no simple method for their quantitative determination, so that an indirect method of estimating the acidosis is very commonly employed. The index that is used is the amount of ammonia nitrogen that is excreted in 24 hours. Acids introduced into the blood are at first neutralised by sodium carbonate and other fixed bases, but when more acid enters the circulation than can be dealt with in this way a portion of the ammonia which normally goes to form urea is intercepted and combines with the acid, so that an increased amount of ammonia appears in the urine. The number of grammes of ammonia eliminated daily may be taken, therefore, as an approximate measure of the intensity of the acidosis. Normally from about 0·3 to about 1·0 grm. is excreted in the 24 hours, but in diabetes 2, 6, or even as much as 12 grm. may be passed. With an excretion of 3·0 grm. or over there is usually a danger of coma supervening.

3. The prognosis in cases that show signs of abnormal acid production is not, however, necessarily serious, for diabetics have been known to excrete 30 or 40 grm. of beta-oxybutyric acid daily and yet live comfortably for years.[4] According to Weintraud[5] acidosis is only dangerous when it is accompanied by a disturbance of nitrogenous equilibrium—that is to say, when more nitrogen is excreted than is being absorbed. For clinical purposes sufficiently accurate data for determining the nitrogenous balance are obtained by comparing the nitrogen-content of the food, estimated from diet tables, and allowing 1 grm. of nitrogen for each 6·25 grm. of protein, with the nitrogen excretion in the urine, plus 1 grm. to represent the unabsorbed nitrogen in the fæces, for a difference of one or two grammes a day is practically unimportant.

From the information obtained by these investigations there can be formed an accurate opinion as to the severity of the case, its prognosis, and the lines along which the treatment must be directed. It is advisable that the urine and fæces should, as a preliminary measure, be also examined for evidences of pancreatic disease, biliary affections, and intestinal trouble, so that means may be taken to deal with them if present, and thereby remove a possible source of metabolic disturbances which interfere with nutrition and may possibly be a factor in the production of the glycosuria.

When working out a diet for a diabetic it is important to bear in mind that he must be supplied with approximately 34 or 35 calories per kilogramme of his body weight, and that these must be contained in materials which experiment shows he can utilise. It is therefore necessary to ascertain, first, how much, and what kinds, of carbohydrate can be used with safety to supply the needful energy; secondly, what amount of protein is required to maintain nitrogenous equilibrium; and, thirdly, how much fat must be added to the diet to make up the balance of energy required. The answers to these problems can only be obtained by metabolic experiments, controlled by analyses of the urine and careful regular weighing of the patient.

The amount of carbohydrate that can be safely allowed is worked out by adding known quantities of various carbohydrates to a "carbohydrate-free" diet and watching the effect on the urine. If the patient has a low coefficient of excretion, the output of ammonia is not high, and nitrogenous equilibrium is well maintained—that is to say, it is a mild case—he should be put upon a diet containing about 3 oz. (85 grm.) of bread, which corresponds to about 47 grm. of added carbohydrate. If the urine is found to be free from sugar upon this, the daily amount of bread is gradually increased until glycosuria reappears. If, on the other hand, 3 oz. of bread are sufficient to cause sugar to appear in the urine, the amount is gradually reduced until either the glycosuria ceases or a "carbohydrate-free" diet is reached. In the former case, as in the first instance, the limit of tolerance for bread is that amount which just falls short of producing glycosuria.

In any case it is generally advisable to place the patient on a diet containing no added carbohydrate for a week or two, when his tolerance is again tested. In most cases it will be found to have increased, and may in some instances approach the normal. It is now tested for other forms of carbohydrate by adding weighed quantities of these to the "carbohydrate-free" diet on separate days. Finally, a mixed diet containing a little less carbohydrate than has been found to be the toleration limit, and calculated to yield the requisite number of calories, is worked out from these data. It will be generally found that some sources of sugar are better borne than others, and by selecting several of those that appear to be most suited to the idiosyncrasies of the case considerable variety can be given to the diet, a most important consideration from the patient's point of view. Every two or three months the collected 24 hours' urine should be re-examined and the diet changed according to the metabolic findings.

The procedure with severe cases, where the coefficient of excretion is high and there are well-marked secondary disturbances of metabolism, is necessarily different, for we have here not only to consider defective carbohydrate utilisation, but also the deficient powers of dealing with proteins and fats. The first thing to do is to restore the nitrogen balance as much as possible. As a preliminary step the sugar in the urine must be reduced to the lowest limit consistent with safety, since diuresis is thereby diminished, and nitrogenous equilibrium is impossible with an excretion of more than 1200 or 1500 c.c. of urine a day. It is usually unwise to attempt to remove all starchy foods from the diet and to render the urine sugar-free. Most patients will be found to do better when one variety is given alone than when several are taken together, and some kinds will generally prove to be more suitable than others, hence the introduction of the so-called oatmeal, potato, and rice "cures" for diabetes. The next step is to reduce the nitrogenous food until only 100, 80, or even 60 grm. of protein are being taken in the day and not more than 12 or 15 grm. of nitrogen are appearing in the urine. Rest in bed and small doses of codeia or opium are useful aids in obtaining nitrogenous equilibrium. Vegetable proteins and eggs may be substituted with advantage for an equivalent amount of meat, especially when there is marked and persistent acidosis. Periods of entirely vegetable and egg diet at intervals are also useful in controlling this condition.

The balance of the dietary must be made up with fat, for although the acetone bodies are chiefly derived from fat, very large additions to the diet are necessary to appreciably influence their output. Since the lower fatty acids are more prone to induce acidosis than the higher, substances containing them, such as unwashed butter, should be avoided. A diabetic with no tolerance for carbohydrate will require from 200 to 300 grm. of fat a day, according to his weight, but in order that such a large amount may be consumed all the resources of the kitchen and the art of the physician will be severely taxed to present it in an appetising and assimilable form. Spirits and dry wines are of distinct value in preventing the digestive disturbances that a richly fatty diet is liable to cause, but the total alcohol-content of these should not exceed about 40 grm. a day.

The experimental data obtained in the course of the investigation of a case of glycosuria, or other disorder of metabolism, are most conveniently collected together in the

[4] V. Noorden: v. Leyden's Handbuch der Ernährungstherapie, 1904, ii., p. 253.

[5] Therapeutische Monatschrift, December, 1908.

form of a chart, prepared by plotting out the results on squared graph paper. In this way the bearings of the urinary analyses on the diet, and the relations of one analysis to another, are much more readily and clearly appreciated than when the figures alone are studied. The specimen charts Nos. 1 and 2 indicate the way in which the method is employed, but for the sake of clearness all the data have not been inserted, as this necessitates the use of coloured inks.

CASE 1.—The patient was sent to me by Dr. J. Brunton Blaikie. The case was a serious one with a coefficient of excretion of 84 per cent., and an ammonia nitrogen excretion of 1·2 grm. in the 24 hours, on a diet containing 76 grm. of carbohydrate, including 3 oz. of bread. On reducing the bread to 2 oz. the coefficient of excretion fell to 66 per cent., but even with no added bread and a diet containing only 20 grm. of carbohydrate, it stood at 65 per cent., and the ammonia nitrogen rose to 1·8 grm. in the 24 hours. By cutting down the proteins of the diet the coefficient of excretion was reduced to 62 per cent., and the ammonia nitrogen excretion dropped to 1·5 grm. His tolerance for different forms of carbohydrate was tested by adding dextrose (25 grm.), levulose (25 grm.), milk (1 pint), oatmeal (3½ oz.), potato (3½ oz.), and apple (5 oz.) successively to the test diet, with the results shown in the chart. From these it is apparent that both pure dextrose and pure levulose were utilised with difficulty, but that the carbohydrates contained in oatmeal and potato were metabolised comparatively well. The addition of milk, oatmeal, and potato was found to be followed by a reduction in the output of ammonia nitrogen, so that they apparently diminished the acidosis. A diet based upon these results was worked out and taught to the patient. At the end of his stay in the nursing home he was put upon a diet containing 24 grm. of carbohydrate, and it was found that his coefficient of excretion had fallen to 55 per cent., as compared with 65 per cent. when the treatment was commenced, so that his power of dealing with carbohydrate had improved by about 10 per cent.

CASE 2.—Chart 2 illustrates the results obtained with a less severe case, sent to me by Dr. L. Vernon-Jones. In this instance restricting the carbohydrate was followed by a marked diminution in the percentage of food sugar passed unused in the urine, and by a progressive decrease in the excretion of ammonia nitrogen, whereas in the former case it caused a rise in the ammonia nitrogen and only a comparatively slight decrease in the coefficient of excretion. With a diet containing 85 grm. of carbohydrate, including 3 oz. of bread, the coefficient of excretion worked out at 43 per cent., with an ammonia output of 0·87 grm. in the 24 hours. The same diet with 2 oz. of bread gave a coefficient of excretion of 24 per cent. and an ammonia output of 0·68 grm. On a test diet containing 23 grm. of carbohydrate a coefficient of 20 per cent. and an ammonia nitrogen of 0·57 grm. were obtained. In this case there was no serious interference with nitrogenous equilibrium, so that it was neither necessary nor advisable to reduce the protein content of the food. On testing his carbohydrate tolerance with dextrose (50 grm.), levulose (50 grm.), milk (1 pint), oatmeal (3½ oz.), and potato (3½ oz.), it was found that levulose was more readily metabolised than dextrose, and that 1 pint of milk, 3½ oz. of oatmeal, 3½ oz. of potato, and 2 oz. of bread gave approximately the same coefficient of excretion. His diet was therefore worked out on this basis. A test diet containing 24 grm. of carbohydrate given at the end of the investigations showed a coefficient of excretion of 11 per cent., as compared with 20 per cent. at the beginning, and an ammonia nitrogen excretion of 0·55 grm.

CHART 1.

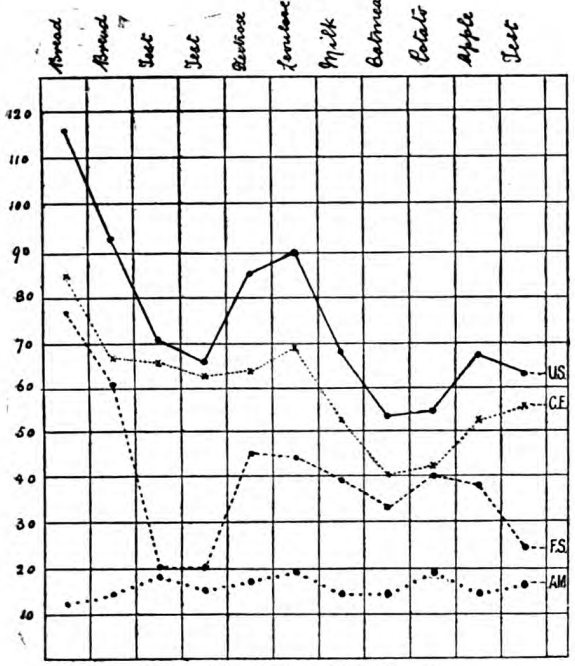

Chart of Dr. Brunton Blaikie's case.
U.S., Urine sugar. C.E., Coefficient of excretion.

CHART 2.

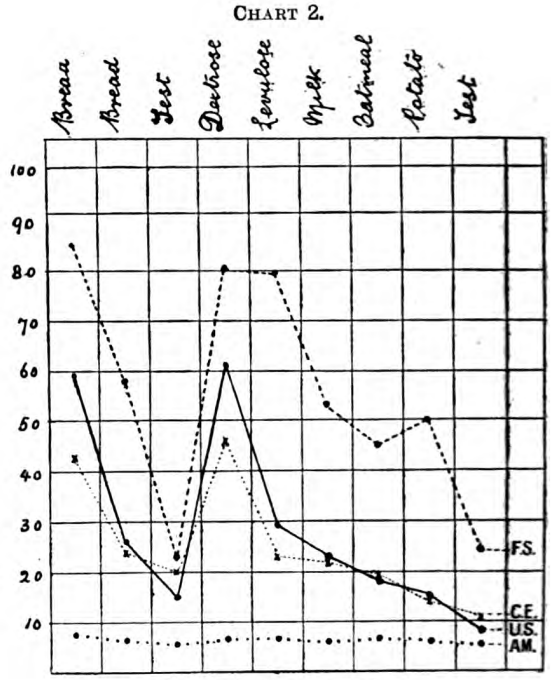

Chart of Dr. Vernon-Jones's case.
F.S., Food sugar. AM., Ammonia N (× 10).

In the treatment of diabetes everything depends upon systematic dietetic measures being instituted at as early a stage as possible, for the whole future of the case depends upon its management at this period. It is exceedingly important that the diet should be prescribed quantitatively, as well as qualitatively, and this is true, not only of the well-marked cases, but also of the mild forms, and even of transient glycosuria, which, if neglected, may pass later into typical progressive diabetes. To merely give a patient lists of foods that he may take, and must avoid, is less than half the battle. What he needs to be taught is how much of each permitted food he may, and must, take to keep up the supply of energy he requires. At first all his food must be weighed, but it is remarkable how quickly the eye can be trained to accurately estimate weights and measures, and after a time only an occasional appeal to the balance is necessary. One useful purpose that the preliminary experimental investigations serve is to provide an opportunity for such education, since observations of this nature can only be satisfactorily carried out in a nursing home or hospital, where the food is prepared under strict supervision, and both it and the excreta are accurately weighed and measured.

Nottingham-place, W.

THE IMMEDIATE RESULTS OF SANATORIUM TREATMENT

CONTRASTED WITH THE RESULTS OBTAINED BY A COMBINED SANATORIUM AND TUBERCULIN TREATMENT.

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WHILST the final judgment as to the value of any form of treatment in pulmonary tuberculosis must rest on the ultimate results, as shown by the after-histories of the cases, still some information can be obtained by an examination of the immediate effects. The most important result is the disappearance of the tubercle bacilli from the sputum, for if the treatment has effected this the patient has ceased to be a potential source of infection for those with whom he is brought into contact.

It has now been conclusively proved that practically all cases of pulmonary phthisis are due to infection with the human type of bacillus. Kossel[1] in a recent analysis gives the following figures: Number of cases investigated, 709; of these, 705 are human, 2 are certainly bovine, 1 due to a mixture of human and bovine, and 1 doubtful). Consequently, the serious source of infection is the patient with tubercle bacilli in his sputum. Any form of treatment, therefore, which can largely reduce the percentage of such cases is the one to be preferred, particularly from the public health standpoint.

At the present time the chief methods of treatment in pulmonary tuberculosis are: (1) the sanatorium, with or without graduated labour; and (2) tuberculin, either alone or preferably combined with the sanatorium.

It is of interest to compare the immediate results given by these two methods, taking as a standard for comparison the presence or absence of tubercle bacilli in the sputum at the termination of the treatment. For this purpose I have compared the results obtained in the King Edward VII. Sanatorium, without tuberculin, with those of some of the foremost sanatoriums in Germany, where tuberculin has established itself as an essential part of the treatment.

1. *Sanatorium Treatment Alone.*

The cases coming under this heading are all those admitted here during the past four years who fulfil the following conditions: (*a*) Have tubercle bacilli present in the sputum on admission; (*b*) remain a minimum period of 12 weeks under treatment. This latter condition excludes a fair number of severe and advanced cases who are admitted for one month "on probation," and whom it would not be correct to include as having undergone the open-air cure. Twelve weeks have been arbitrarily fixed as the lowest time admissible. During the four years under consideration 631 patients have been admitted who fulfilled the two conditions, and the immediate results are shown in Table I.

TABLE I.

Classification according to Turban-Gerhardt.	Total number of patients.	Number of patients who lost their tubercle bacilli.	Number expressed as a percentage.	Average stay in sanatorium in weeks.	Minimum stay in weeks.	Maximum stay in weeks.
Group I.	160	73	45·62%	20·16	12	46
„ II.	315	60	19·04%	21·82	12	63
„ III.	156	14	8·97%	21·03	12	61
Totals	631	147 =	23·3 %	—	—	—

The above table shows that of 631 patients, 147, or 23·3 per cent., lost their tubercle bacilli whilst under treatment in the sanatorium; and it also brings out very clearly the advantages of treatment (of the cases) before physical signs are well marked, for in Groups I. and III., which are almost equal in numbers, the percentages of those who became free from bacilli are 45·62 and 8·97 respectively—that is, the results in Group I. are more than five times as good as in Group III.

These figures are, on the whole, better than those obtained under similar conditions in Germany; as Loewenstein[2] states that the reports of the public sanatoriums (Volkheilstätten), which have paid special attention to this point, give a percentage of from 12 to 25 of the cases in whom sanatorium treatment alone has led to a disappearance of the bacilli from the sputum.

2. *Combined Tuberculin and Sanatorium Treatment.*

For this part I have taken the results published by some of the foremost of the German sanatoriums, which deal with large numbers of patients. First, Loewenstein[3] reports on the year 1909 in the *Heilstätte Beelitz der Landes-Invalidenversicherung*, Berlin. In his figures he includes all those who during treatment reached a state of immunity towards either 10 mg. of old tuberculin or 0·01 mg. of new tuberculin. His patients are only considered free from bacilli when the sputum has been examined with negative result on four occasions, using the antiformin method and always after an injection of tuberculin. This is a much more severe test than that to which our patients are submitted, and consequently makes his figures of very great value in estimating the effect of tuberculin treatment. He reports on 682 cases with tubercle bacilli present, who reached the state of immunity mentioned, and classifies them according to the variety of tuberculin with which they have been treated. His results are given in Table II.:—

TABLE II.

Treatment.	Total number of patients.	Number of patients who lost their bacilli.	Number expressed in percentages.
Old tuberculin	409	237	57·94
New tuberculin	204	86	42·15
Old and new tuberculin	69	38	55·07
Totals	682	361	= 52·93

Special importance is laid on the last group, in which both preparations were used, as these were severe cases belonging to the second and third stages. It is also pointed out that the results would have been even better if a higher state of immunity had been taken as the minimum, as it is only in a few cases that the "cure" is finished when 10 mg. has been reached. This amount was chosen because it is the maximum dose used in diagnosis.

Secondly, Bandelier[4] reports on 202 cases, with tubercle bacilli present in the sputum, who were submitted to the combined treatment, with the following excellent results:—

TABLE III.

Group.	No. of patients.	No. of patients who lost their bacilli.	No. expressed in percentages.
I.	10	10	100·0
II.	79	69	87·3
III.	113	50	44·2

Thirdly, Curschmann, of the Heilstätte der Badischen Landesversicherungsanstalt, is quoted by Bandelier and Roepke,[5] and gives the following results after a three months' combined treatment:—

TABLE IV.

Group I.	80% ...	Sputum negative at the end of the "cure."
„ II.	47·7% ...	„ „ „ „ „ „
„ III.	33·75% ...	„ „ „ „ „ „

In this table the numbers belonging to each group are not

[1] Kossel: Deutsche Medizinische Wochenschrift, 1911, p. 1972.

[2] Loewenstein: Handbuch der Technik und Methodik der Immunitätsforschung von Kraus und Levaditi, 1911; Erster Ergänzungsband.

[3] Ibid.

[4] Bandelier: Beiträge zur Klinik der Tuberculose, 1910, Band xv., Heft 1, p. 17.

[5] Bandelier und Roepke: Die Klinik der Tuberkulose, 1911, p. 163.

stated, but they are included as showing what can be accomplished by a three months' treatment. In the sanatoriums referred to tuberculin is given in small doses, gradually increasing in amount until very large quantities are tolerated, but avoiding as far as possible any severe reaction during the treatment. Reactions are even less likely to occur if the albumose-free tuberculin introduced by Koch be substituted for the old tuberculin. This can be followed, if necessary, by a course either of old tuberculin or, perhaps even better, by bacilli emulsion.

Summary.

1. With sanatorium treatment alone we can only reckon on 20 to 25 per cent. of all cases losing their bacilli as an immediate result of the treatment.
2. When a combination of tuberculin with sanatorium treatment is adopted, at least 50 per cent. of the cases will lose their tubercle bacilli.
3. The earlier the cases come under treatment the better the results. This is very strikingly shown in the tables in which the cases are considered in groups according to the stage of the disease.
4. A comparison of the immediate results is so much in favour of tuberculin that it is difficult to understand the opposition to its employment, both in treatment and diagnosis.

In conclusion, I wish to express my thanks to the consulting staff of the King Edward VII. Sanatorium for permission to publish this paper.

Midhurst.

ACUTE INTESTINAL OBSTRUCTION

CAUSED BY THE APPENDIX VERMIFORMIS, THE OBSTRUCTION OBSCURING AN ACUTE APPENDICITIS.

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THE following case illustrates an unusual combination of circumstances.

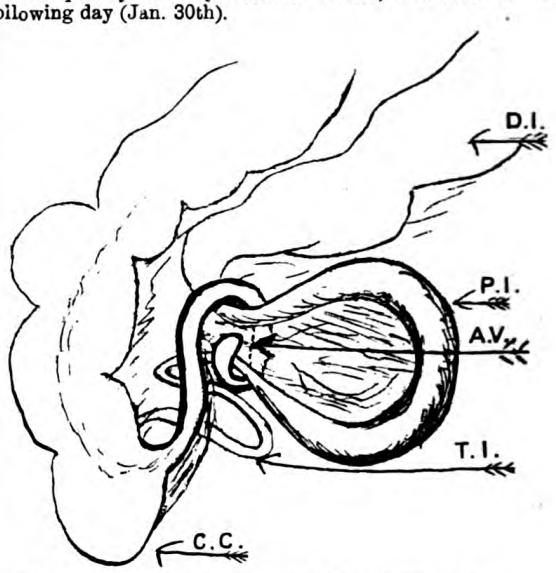
The patient, a male, aged 10, was admitted to the Prince of Wales's Hospital on Jan. 29th, 1912. The boy had always enjoyed good health. On Jan. 23rd he complained of abdominal pain localised round the umbilicus. He also vomited. The pain and the vomiting continued until admission, the latter becoming more frequent. The bowels were opened on the 24th, after an enema, but not since. On the 28th the condition was worse, and distension of the abdomen was noticed. The patient was admitted to hospital on the 29th.

Examination on admission.—The patient looked very ill. The face was cyanosed; the tongue furred and dry. Temperature 97° F., pulse 100, respiration 28. Before operation the patient had fæcal vomiting. The chest showed nothing abnormal. The abdomen was distended. Coils of intestine could be seen showing through the abdominal wall, and giving the step-ladder appearance of small intestine obstruction. The abdomen felt tense, but had not the rigidity of an inflammatory lesion. There was no localised tenderness on palpation. The movements with respiration were deficient. The percussion note all over was resonant. Rectal examination revealed a distended empty rectum; nothing abnormal was felt in the pelvis.

Operation (Jan. 29th).—Under general anæsthesia with open ether the abdomen was opened by the para-umbilical incision to the right of the middle line. Coils of distended and congested small intestine at once showed. On introduction the examining hand could feel a loop of intestine tightly constricted by a band. The portion of intestine was isolated and brought to the surface. The strangled loop was found to be about 18 inches of the ileum close to its lower end. The band was also a piece of intestine, stretched, and thinned out. Further search showed that it was the appendix vermiformis. It had encircled the loop, passing at first over and in front of it, then downwards behind. Finally, the tip appeared round the lower border and gained an attachment in front to the mesentery close to its junction with the gut. (See figure.) In addition the loop of intestine was rotated through about 90° from right to left of the patient on an axis lying in the length of the mesentery and at right angles to the intestine. It may be noted that this rotation was in the same direction as the appendix encircled the gut.

The appendix was freed and found to have a recent perforation close to the tip. The perforation had been sealed for the time being by the attachment to the mesentery. Appendectomy was performed. The intestine, which was quite viable, was returned into the abdomen. The incision was closed by a single layer of through-and-through sutures.

Subsequently the boy became weaker, and died on the following day (Jan. 30th).



Diagrammatic view of condition. D.I., Distended ileum above. P.I., Paralysed loop of ileum. A.V., Tip of appendix vermiformis attached to mesentery. T.I., Collapsed terminal portion of ileum. C.C., Caput cæci. The rotation is not indicated in the diagram.

Remarks.—1. Obstruction due to a Meckel's diverticulum in the above situation is well recognised. But a similar lesion caused by the appendix would seem to be much more rare. Treves quotes some cases in his "Intestinal Obstruction" in which the appendix after its tip had acquired a secondary attachment was the means of causing obstruction. In the case reported, however, the appendix was in an acutely inflamed state.

2. The position taken up by the appendix was a most unusual one. It is difficult to picture the sequence of events. To judge from the ease with which the appendix was separated the obstructing position must have been a recent one.

3. The complete obscuration of the signs of the appendicitis. The condition on examination pointed to an obstruction caused by a band or to kinking due to adhesion over a breaking down gland in the mesentery. Such, indeed, was the provisional diagnosis.

Harley-street, W.

ROYAL FREE HOSPITAL.—Sir Edward Durning Lawrence presided on March 13th at the Eighty-fourth Annual Court of Governors of this hospital. The report of the committee of management stated that the financial position of the hospital had been satisfactory. The statistical returns showed that the average cost per in-patient per week during 1911 amounted to £1 17*s.* 5½*d.*, against £1 14*s.* 3*d.* in 1910; the cost per out-patient attendance amounted to 11$\frac{1}{16}$*d.*, compared with 10¼*d.* during the previous year. The total number of patients under treatment in the wards and out-patient departments during the year was 35,596 There were 2204 in-patients admitted, in addition to the 140 who were in the wards at the beginning of the year, thus making a total of 2344 in-patients for the year. The average stay of patients in the wards was 23 days. Reference was made by the chairman to the conclusion of negotiations for the acquisition of a large area of land in the rear of the hospital upon which a new out-patient department would soon be erected.

Medical Societies.

ROYAL SOCIETY OF MEDICINE.

SURGICAL SECTION.

Pancreatic Calculus removed by Operation.—Multiple Growths of the Great Gut.—Hydrocephalus Internus; Rupture into the Subdural Space; Intracranial Tension and its Temporary Relief.—Multiple Fibromata of the Tunica Vaginalis.

A MEETING of this section was held on March 12th, Mr. CLINTON T. DENT, the President, being in the chair.

Mr. JOHN MURRAY read a paper on a case of Pancreatic Calculus, in which the stone had been removed by operation. The patient was a female, aged 40, who had suffered from attacks of pain in the epigastrium since 1888. The attacks came on immediately after food and usually lasted about two hours. There was no vomiting at first. These symptoms continued for seven or eight years, when the attacks became less frequent, and for a period of two years she was free from pain. Ten years ago she had a severe attack which lasted 18 hours and was followed by jaundice. In 1905 she suffered from occasional slight colic. In 1906 an attack was accompanied by vomiting, epigastric tenderness, and cardiac irregularity. On July 23rd, 1910, she had severe pain and frequent vomiting, and on the following day became jaundiced. The jaundice continued until the middle of September, when the gall-bladder could be distinctly felt to be enlarged. On Sept. 24th the abdomen was opened through the right rectus muscle. The gall-bladder was aspirated and several ounces of bile withdrawn. There were no stones in the gall-bladder, but a stone could be felt apparently lodged in the common bile-duct. It was found to be necessary to enlarge the incision in the abdominal wall, and after this had been done a prolonged and careful search failed to discover the position of the stone. The abdominal wound was therefore sutured, a drain-tube being placed in the gall-bladder. The wound healed, and the patient returned home, but on the same day she was seized with pain and vomiting, and soon became jaundiced, the attack lasting 22 hours. The gall-bladder became distended, and subsequently the scar broke down and a large quantity of bile escaped. On Nov. 7th the abdomen was reopened, when the stone was at once found occupying its original position, lying behind the second part of the duodenum. The peritoneum was divided on the outer side of the duodenum, which was then displaced towards the left side, and after tearing through some pancreatic tissue the pancreatic duct was exposed. This was incised and the stone extracted. The duct was sutured and the abdominal wound closed, two drainage-tubes being introduced, one into the gall-bladder and the other towards the outer edge of the duodenum. The patient made an uninterrupted recovery, and had had no further trouble.—The paper was discussed by Dr. P. J. CAMMIDGE and Mr. H. BETHAM ROBINSON.

Mr. G. H. MAKINS, Mr. CUTHBERT S. WALLACE, and Mr. PERCY W. G. SARGENT communicated a paper on Multiple Growths of the Great Gut. The authors thought that as the following cases had occurred in their practice in a comparatively short time it was probable that they were more frequent than the text-books would lead one to suspect. They seemed to offer some food for reflection, both from a clinical and pathological point of view. 1. Male, aged 39. Two ring carcinomata, separated by an interval of about 6 inches, were present in the parts removed from the transverse colon in 1905. A second ring carcinoma was removed from the junction of the iliac and pelvic colons in 1908. It was probably present in 1905. In May, 1911, an ulcerating ring carcinoma was removed from the transverse colon immediately above the scar of the first resection. No other growths could be felt anywhere in the abdomen; no enlarged glands could be detected; the liver was not enlarged, and the whole of its accessible surface felt uniformly smooth. 2. Female, aged 53. A ring carcinoma occurred at the middle of the sigmoid loop, and another ring carcinoma in the rectum at the level of the os uteri. The bowel was hypertrophied above the highest growth and between the two. The upper growth was microscopically a columnar carcinoma. 3. Male, aged 56. The whole large intestine was beset with polypi. There were also an ulcerating ring carcinoma 12 inches from the cæcum and a second similar carcinoma 8 inches below the first. 4. Female, aged 43. There were two growths—a contracting ring carcinoma of the splenic flexure and an ulcerating carcinoma within 4 inches of the anus. A non-ulcerative polypoid condition of the mucosa extended from the upper growth to the anus. The muscle coat of the bowel was hypertrophied above the splenic growth, but not to any appreciable extent below it. 5. Female, aged 66. There were a ring carcinoma of the ascending colon with secondary glands and many polypoid growths on the distal side of the carcinoma. No microscopic examination was made. 6. Male, aged 32. A ring carcinoma occurred at the junction of the pelvic and iliac colons. Many minute polypi were found above the growth (extent upwards unknown), and multiple masses of simple polypi and carcinomatous ulcers below it. The annular growth was a columnar carcinoma, whilst one of the polypoid masses was a simple adenoma. 7. Female, aged 34. A ring carcinoma at the beginning of the ascending colon was accompanied by infected glands. From this growth down to the hepatic flexure polypi occurred scattered over the mucous membrane at gradually increasing intervals. The ring carcinoma and the polypi were shown to be columnar-celled carcinomata. 8. Female, aged 51. A ring carcinoma of the splenic and of the transverse colon was present. Immediately proximal to it was a pedunculated adenoma, which had been impacted in the ring growth. Microscopically the ring growth was a carcinoma, the pedunculated tumour an adenoma. The cases seemed to fall into four classes. 1. Ring carcinomata with a length of normal bowel between them (Cases 1 and 2). 2. Ring carcinomata having the mucous membrane between them covered with simple polypi (Cases 3 and 4). 3. Ring carcinoma having the mucous membrane distal to it covered with (1) simple polypi (Case 5); (2) simple and malignant polypi (Case 6); (3) malignant polypi (Case 7); and (4) ring carcinoma having a simple polypus immediately proximal to it. It was a question as to what relation these various growths bore to one another. If one was secondary to the other, what was the method of dissemination? Lymphatic infection, permeation, and peritoneal dissemination seemed to be excluded. The lower growths would then be either primary tumours or infection tumours. The cases in which the mucous membrane below the growths was the seat of polypi suggested that the ring carcinomata might have produced some exudate which irritated the mucous membrane to produce benign growths which in their turn became malignant. It would of course be possible to suggest that the polypi were first formed and later underwent a malignant transformation into ring carcinomata and malignant polypi. Clinically the multiplicity and chronicity of the growths was the striking feature.—The paper was discussed by Mr. C. GORDON WATSON, Mr. BETHAM ROBINSON, and Mr. CHARTERS J. SYMONDS.

Mr. W. G. SPENCER read a paper entitled "Hydrocephalus Internus; Rupture into the Subdural Space; Intracranial Tension and its Temporary Relief." It was based on the following case. A boy, aged 5 weeks, was admitted, apparently suffering from hydrocephalus internus, who exhibited marked intracranial tension, rigidity, frequent vomiting, and screaming fits. With the object of making a communication between the cerebral ventricles and the subdural space the skull was trephined, when all the fluid was found in the subdural space. In order to afford an escape for the fluid several attempts were made to drain it into the subcutaneous tissue. Finally, a communication with the nose through the ethmoid plate was set up in order to produce the condition causing cerebro-spinal rhinorrhœa, such as has followed accidents, &c. This gave relief from tension until the child's death some time later, when it was found that the cerebral ventricles had ruptured into the subdural space, so that the membranous sac representing the cortex had quite collapsed. Finally, a comparison was made between the results obtained by Goltz from removing the cortex of the cerebral hemispheres in dogs and that which could be observed in the child.

Mr. MAKINS read a short paper on a case of Multiple Fibromata of the Tunica Vaginalis. The patient, a man aged 27, had noticed some nodules at the back of the right testis as long as he could remember. These had given rise to no inconvenience, but of late they had been increasing in size

and number. Examination revealed a group of nodules like a bunch of grapes in the back part of the scrotum. The skin was free, but the nodules were attached to the back of the testis. With this exception the testicular outline was perfect and the organ apparently normal in size and consistence. The growths were removed. They were situated beneath the serous layer of the tunica vaginalis, a large group over the centre of the epididymis and two small nodules on the outer surface of the body of the testis. No definite connexion existed between the separate nodules, and the whole were readily removed by dissecting away the tunica vaginalis. Only one similar case appeared to have been recorded, that by Tikhanovitch, quoted by Balloch in the *Annals of Surgery*, vol. i., 1904, p. 396. All other recorded instances had been of large soft fibromata showing often a tendency to central necrosis. Removal was indicated, since the tumours generally had shown a tendency to enlarge indefinitely and to necrose. In the case recorded the peculiarity consisted in the arrangement in multiple discrete nodules, and the hard character of the fibrous tissue forming the tumour. In nature the nodules were probably identical with the small fibromata occasionally met with in the subserous layer of the parietal and visceral peritoneum.

SECTION OF ANÆSTHETICS.

Ether and Hedonal Infusion Anæsthesia.

A meeting of this section was held at 15, Cavendish-square on March 1st, Dr. W. J. MCCARDIE, the President, being in the chair.

Dr. F. S. ROOD read a paper on Ether Infusion Anæsthesia. After quoting the results and describing the methods of ether infusion anæsthesia in various continental clinics, he proceeded to describe his modification of the apparatus. He commenced at first to employ a solution of 10 per cent. ether in normal saline solution, but finding that there was some hæmolysis as a result he next employed a 5 per cent. solution. Finding that the induction of anæsthesia was apt to be longer than convenient, and that the quantity of fluid injected was open to the objection of being unnecessarily large, he next used a 7·5 per cent. solution. This gave perfect results. There was no hæmolysis and the induction period was now reduced to a few minutes. The patient was given a hypodermic injection of morphia 1/6th gr., scopolamine 1/100th gr., and atropine 1/100th gr., about three-quarters of an hour before operation. The median cephalic or median basilic vein in the arm was exposed under local anæsthesia (produced with β-eucaine solution) and the cannula tied in. It was found that it was an advantage to close the wound so produced at once, leaving one stitch untied until the end of the operative procedure of the surgeon. Of course, any vein—e.g., the saphenous in the leg—could be used. The solution was warmed by being passed through a specially devised warming chamber before being allowed to enter the vein. At first the fluid was run in with the tap turned full on, and anæsthesia should be induced by running in from half to one pint of the 7·5 per cent. ether saline solution in from three to five minutes. After the induction of anæsthesia the tap which regulated the flow was so turned that a succession of drops was run into the vein practically continuously. This obviated any possibility of clotting and reduced the quantity of fluid injected to the minimum necessary to maintain anæsthesia. Respiration should be carefully watched and depth of anæsthesia carefully regulated by increasing or decreasing the rate of flow. Anæsthesia was so quickly lightened or deepened that the anæsthetist needed to pay great attention to the rate of flow employed. He had now employed this method in 136 cases and had practically no bad after-results; 6 patients only vomited, 3 of whom had swallowed blood.

Mr. C. M. PAGE next read a paper on Hedonal Infusion Anæsthesia. The method had been first introduced in 1910 by Federoff, of St. Petersburg. He reported 530 cases from several Russian clinics; in no instance was death attributable to the anæsthetic. The method adopted was one of *interrupted* infusion. Mr. Page reported on 75 cases in which he had used hedonal at St. Thomas's Hospital. The drug was infused *continuously* from a special tank and a 0·75 per cent. solution of hedonal in normal saline solution was employed. In all instances good anæsthesia was obtained. The largest amount of solution infused in any one case was 2000 c.c., the smallest was 40 c.c. The anæsthesia obtained was steady and associated with great muscular relaxation. The patient usually remained sleeping for from six to eight hours after the operation was finished. The only danger likely to arise during the anæsthesia was cyanosis, either from obstruction to the air passages or from a too rapid dosage. The solution should be allowed to run in at the commencement at a rate of 50 to 100 c.c. per minute.—Mr. L. E. BARRINGTON-WARD reported the first case of death during hedonal anæsthesia in this country. The patient was a girl aged 8, of fair size and development, and so far as could be determined quite normal, except for tuberculous glands in the neck and enlarged tonsils. The method used was that described by Mr. Page, to whom he was indebted for letting him see some cases of hedonal infusion anæsthesia. The injection was normal, the left saphenous vein being selected. The operation was started 10 minutes after the commencement of anæsthetisation, and at that time 300 c.c. of a 0·75 per cent. hedonal solution had been used. The child was of a good colour and not at all deeply under. After another 20 minutes the skin stitches were being put in when without any warning the patient stopped breathing. The colour remained good and there was no respiratory obstruction whatever. Efforts at resuscitation were made by artificial respiration, bleeding, injection of strychnine, atropine and ether, and massage of the heart through the abdomen, but, unfortunately, without success, though they were persisted in for 1½ hours. During the actual period of operative procedure another 200 c.c. of the 0·75 per cent. hedonal solution had been used, making a total of 500 c.c. used from the commencement of the administration until the respirations failed. Post mortem there was an enlargement of lymphoid tissue generally all over the body. The thymus was distinctly enlarged, and it enwrapped the great vessels at the base of the heart in a curious manner. The Malpighian corpuscles were especially prominent, the glands in the abdomen were hypertrophied, and there was a mass of lymphoid tissue about the ileum and cæcum. The tonsils were enlarged and there was a greatly hypertrophied ring of lymphoid tissue around the tonsil, tongue, and pharynx. The heart was not abnormal in colour, but it was dilated, and on subsequent microscopical examination exhibited fatty degeneration. The bases of the lungs were œdematous, and there was an excess of free fluid in the pericardium. Dr. B. H. Spilsbury, who performed the post-mortem examination at the request of the coroner, considered the case to be one of status lymphaticus. The dose in this case was not excessive for the age and weight of the patient. Mr. Barrington-Ward said that he did not propose to say more about the hedonal infusion method as his experience amounted to 20 to 30 cases at the Children's Hospital, Great Ormond-street, and that was too few to dogmatise from. He had had no trouble or anxiety in any of the other cases in which he had employed the method. He would be glad to answer any questions.—The PRESIDENT said the section was fortunate in having so much recent good work brought before it at one sitting, and both Dr. Rood and Mr. Page could be congratulated on the number of their cases, their results, and the improvement in technique they had effected. They were also indebted to Mr. Barrington-Ward for the clear account he had given of a fatal case under hedonal. He only wished equally good reports of all fatalities during anæsthesia were furnished, then more would be learned about the causes of such fatalities.—In the subsequent discussion Mr. G. A. BARTON said he was glad to see that infusion anæsthesia had been given a trial in this country. Two years ago he had expressed the hope that it would be. However, he did not think the method offered, in ordinary cases, better results than did scopolamine, morphia, and open ether. He thought all the advantages claimed by Dr. Rood for the infusion method were obtainable by inhalation. There were, of course, occasions when infusions would be useful. He thought the present apparatus should be simplified. Possibly some apparatus like that invented by Dr. Maguire for his formalin injections would be possible.—Dr. HAROLD LOW discussed the question of safety and the advantages and disadvantages of the infusion method, more especially with reference to hedonal. The anæsthesia obtained under hedonal was perfect. It was easily induced and maintained, respiration undisturbed, muscles completely relaxed, no after vomiting; the patient slept after operation during the time that pain was most likely to be felt. He did not think that either of

the methods discussed that night would take a place as the routine method, but they would rather take their special place for suitable cases.—Dr. J. F. W. SILK pointed out the not uncommon difficulty in finding the vein, on the importance of the anæsthetist being at the head of the patient, and on the danger of a possible clot being washed into the circulation. He thought the method would find its level, more especially for cases that needed transfusing for possibly-shock-producing operative procedures.—Mrs. DICKINSON BERRY asked Mr. Page what he considered were the advantages of hedonal over ether infusion as a method of anæsthesia.—Dr. J. BLUMFELD dwelt on the length of time the induction of anæsthesia took in ether-infusion when 5 per cent. solution was used, and advocated a stronger solution.—The PRESIDENT thought that in these new methods anæsthetists possessed an addition to their armamentarium which might be useful in selected cases for operations on the upper part of the body, just as spinal anæsthesia was especially applicable in certain cases in the lower half of the body.—In his reply, Dr. ROOD dwelt on the absence of after-sickness and bronchitis. He emphasised the necessity for strict asepsis. The largest amount of fluid he had ever had to use was between 4 and 5 pints. With regard to the rate of injection, he turned the tap full on at first. From 12 to 18 ounces would be necessary for a healthy adult male, and the period of induction averaged four minutes. For weakly people half that quantity would be necessary.—Mr. PAGE, replying, thought that there were less cyanosis and congestion in the air-passages with hedonal than with inhalational anæsthesia. With regard to the advantages of hedonal over ether infusion, he thought the apparatus was simpler; being composed of metal it was unbreakable and more capable of sterilisation. The solution could be boiled and remained stable. This latter advantage enabled the anæsthetist to run in his solution at a higher temperature than was possible with the ether method. Hedonal was said to be less irritating to the tissues than ether, and as it was excreted by the kidneys there was no irritation of the lungs. Being but slowly excreted less fluid had to be injected to maintain anæsthesia.

OTOLOGICAL SECTION.

The Value and Significance of Hearing Tests.

A MEETING of this section took place on March 15th at Chandos-street, Cavendish-square, Dr. W. MILLIGAN, the President, being in the chair.

A discussion on the Value and Significance of Hearing Tests was introduced by Dr. THOMAS BARR (Glasgow) and Mr. SYDNEY R. SCOTT (London).

Dr. THOMAS BARR took up the nature of bone conduction of sound, the basis of the information derived from it in pathological conditions of the ear, and the difficulties, apparent contradictions, and possible fallacies of the various tests by bone conduction. Secondly, the present position of the various tests as to their value and significance.

Mr. SYDNEY SCOTT considered the mechanism of the sound stimulus in the cochlea in relation to tone range and tone acuity by air or other forms of conduction, and gave some results of concurrent clinical and pathological investigations.

The opening addresses were illustrated with lantern slides and some instruments which are not in general use.

It was decided to defer the discussion until May 17th.

CHELSEA CLINICAL SOCIETY.

Disorders of the Circulatory System.

THE annual clinical debate of this society was commenced on March 12th at St. George's Hospital, Dr. JAMES A. MANSELL MOULLIN, the President, being in the chair.

The debate was inaugurated by Professor Sir T. CLIFFORD ALLBUTT with a paper entitled "The Physician and the Pathologist on Heart Failure." He began by pointing out the inexactitude of our present state of knowledge of heart failure and of the conditions which produce it. Clinical physicians will give a ready answer to the question of what cardiac failure is, but they can often neither foretell it nor prevent it. The pathologists are no less ready to explain fatty degeneration, various kinds of myocarditis, degenerations of the *a.-v.* bundle, and other lesions. But the correlation of the two aspects, clinical and pathological, is still often lacking. The physician and the pathologist are plotting, each upon his own side of the hedge, and for lack of mutual coöperation the paths of both remain full of complications. There is, for instance, no definite criterion whereby to distinguish inflammation of the myocardium, in a fever case say, from dilatation due to mere lack of muscular tone. From these introductory remarks the audience would infer that Professor Allbutt intended to say little about valvular diseases of the heart, for there the lesions are partly mechanical and can be estimated, nor does death, as a rule, occur suddenly. Dilatation and hypertrophy were also passed over with a brief reference to the fact that there is no constant relation between them; dilatation, it was emphasised, is no gauge of the histological condition of the myocardium. If delineation of the heart's dimensions gives little trustworthy information as to the condition of the myocardium, what of the indications afforded by auscultation? Even they are uncertain; a slapping first sound may mean much or little; defective impulse beat and feebleness of the second sounds are only too often equally misleading. These physical signs are equivocal; they are not criteria. Again, vertiginous phenomena often accompany cardiac disease; but they are so often due to other causes that, taken alone, they, too, are often equivocal symptoms. The pulse, too, as experience has shown, is often deceptive; even the rhythm of the pulse has ceased to be accepted as a guide to myocardial damage. There are, however, two pulse signs that are significant. One is persistent alteration of rate and the other is pulsus alternans. As to the latter, we must remember Dr. James Mackenzie's warning that it may appear in a tracing when it cannot be detected by the fingers. A permanent change of rate, whether bradycardia or tachycardia, is of much importance. Let a pulse-rate be normally 65 to 70 when the patient is at rest; let it be found later to have become permanently 75 to 85 under similar conditions. Then the inference is that there is some profound change in the wall of the heart; yet even this is not an absolute criterion. Of dyspnœa, slight œdema and cyanosis, pulmonary crepitations, and many other similar signs, there is no need to speak, for they usually signify late stages of the malady and speak only too plainly for themselves. On fatty degeneration pathological opinion has undergone of late wide fluctuations, but the distinction between this and fatty infiltration still holds its ground, although the two merge one into the other. In the midst of fatty deposits the cardiac fibres may be well striated, and Aschoff even holds that fatty infiltration may be a sign of healthy activity. At any rate, it is possible for no clinical symptoms to be caused by advanced states of fatty change. In so-called chronic myocarditis we may find no greater correlation between the clinical symptoms and the pathological appearances. Fibrosis of the myocardium, again, is not infrequently found in hearts which have been quite efficient during life, and Dr. Hale White has lately described this condition as practically undetectable. Syphilitic fibrosis is, of course, another matter. The site of the lesions does not give very much help, and there may be complete destruction of both limbs of the *a.-v.* bundle without any clinical signs of dissociation. There are probably many subtle agencies of which we have no idea capable of determining the delicate poises of life and death. There is a world of surface tensions, viscosities, and other physical phenomena of which we know little; and there is a world of chemical reactions and ionic effects of which we know almost nothing. When we speak further of toxic influences we realise how near the precipice the heart may be. The riddle I have done so little to solve is that of sudden death in the man who has had no symptoms of illness and does not suspect that he is ill.

Sir LAUDER BRUNTON remarked that a good deal could be said for the cause of sudden death once assigned—namely, shortness of breath—as contrasted with cardiac failure. According to Casper, 50 per cent. of drowned people did not die from suffocation but from shock, both cavities of the heart being found completely empty. On the other hand, he had seen a case of aortic regurgitation within two minutes after death, and the appearance was typically that of strangulation, the face being deeply congested and the jugulars distended. In a case of sudden death from angina pectoris he had kept the heart going for nearly an hour by artificial respiration, although he had been unable to recover the

patient. In cases of sudden death from shock or from poisoning by hydrocyanic acid, digitalis, or diphtheria antitoxin no anatomical lesion whatever could be found in the heart, although no doubt chemical changes occurred in its tissues. He agreed that no single symptom was pathognomonic of fatty heart, but he thought that by taking several symptoms together a fairly correct diagnosis might be come to. He thought that a low blood pressure without any apparent cause in elderly people was to be regarded with suspicion. Death occurred in children from want of food, improper food, or imperfect assimilation. In adults these were the causes of death, but in addition there was over-work. This simile might help them in regard to the heart, which was in the unique position of having to supply itself with nutriment, with oxygen, and to remove its waste products. When the heart began to fail its own nutrition and its own oxidation were diminished and the functions of the kidney were also lessened. It had been shown that the heart was exceedingly sensitive to a lessened supply of oxygen, and if the respiration ceased long enough the heart was certain to stop. The respiration might cease because the heart had failed to send sufficient blood to the respiratory centres, and thus there was an intimate interaction between the heart and brain, as well as between the heart and kidneys. The accumulation of waste products might lessen the vitality of both heart and medulla, and diminish their power to utilise the oxygen which was supplied to them. Oxygen was a powerful stimulant to the heart. In a case of cardiac asthma he had seen the blood pressure in the brachial artery rise in ten minutes during the inhalation of oxygen from 75 millimetres to 150. The use of oxygen in a case of heart disease was sometimes very beneficial as a cardiac tonic. One required to be very careful in heart disease to avoid extra exertion. He thought by attention to the old-fashioned methods of securing elimination of waste products, and by the judicious use of appropriate diet and of cardiac remedies, the use of which was now so much better understood, a great deal might be done to prevent cardiac failure and sudden death.

Dr. SAMUEL WEST said that Sir Clifford Allbutt's destructive criticism showed them how little they knew. He himself was disposed to bring these cases of sudden cardiac failure into line with the toxic conditions spoken of by Sir Lauder Brunton. Intense poisons might be produced in conditions of which they knew but little, as in snake venom, or in uræmia and diabetes; and he could see no other supposition which accounted for some of these sudden deaths from cardiac failure. He was not prepared with any constructive theory; but it seemed to him that toxic influences formed the direction for future inquiry.

Dr. C. C. GIBBES related four unusual cases that had a bearing on the question of heart failure from myocardial degeneration. In the patients with scurvy there was pure fatty degeneration of the heart, the result of toxæmia, somewhat resembling that of phosphorus poisoning. In the case of old-standing aortic disease there was an acute toxæmia (from which the patient had apparently recovered), producing a myocardial intoxication sufficient to cause a sudden and unexpected arrest of the heart's action. The fourth case was that of a lady suffering from so-called fatty degeneration of the heart, although he believed the more correct classification would be fibro-fatty degeneration. The first indication of any heart disease was a sudden apoplectiform attack with complete unconsciousness for 36 hours; she had no paralysis, but was aphasic for two days after consciousness returned. She was then aged 67. During the following 18 months she had three other slighter attacks, but was then able to resume her ordinary mode of life for four years, when she began to have a series of syncopal attacks. During the following five years she had a great many attacks, and on several occasions it seemed as though she would never rally. However, these ultimately ceased and nothing fresh supervened until four years later, when she began to have epileptiform attacks after any fatigue. The worst came on during a train journey to Plymouth two years before she died. No symptoms presented themselves until after Exeter was passed, when she suddenly had an attack presenting all the symptoms of *petit mal*. She had eight attacks in all before the end of the journey. These attacks were obviously due to cerebral anæmia from heart failure, for they passed off at once when her head was in a dependent position. After this journey she was prevented from over-exerting herself and she had no more attacks. She died at the age of 84 from senile decay, without any signs of heart failure whatever. This case seemed to answer the question, Can the heart muscle of old age make any recovery from fatty degeneration? He said that, broadly speaking, fatty degeneration of the heart arose from some defect in the quantity or quality of its blood-supply. When cardiac failure resulted from the former they could do nothing, but when it was due to a defect in the quality of the blood recovery was possible, provided they could remove the cause. It could not be denied that the severest cases of scurvy (where both the voluntary and involuntary muscles were in a state of fatty degeneration) recovered, and the patient resumed active service. The same might be said of enteric fever. In the last case there was a peculiar sequence of attacks resulting from cerebral anæmia, secondary to heart failure, yet the patient died at the age of 84 from senile decay without showing any symptoms of heart failure. He suggested that more knowledge was required of acute myocardial intoxications and their effects, because in his belief such intoxications might and did occur unrecognised, the patient recovering without any permanent injury to the heart.

Dr. WILLIAM EWART referred to the variety and the importance of the "unknowable" or at any rate unknown quantities in the problem. The pathological degenerations and the toxæmia offered unlimited scope for speculation. The versatility of their theories was illustrated by the recent prevalence of the diagnosis of "myocarditis" which had now been supplanted by that of "heart-block." He drew attention to mechanical risks which were both demonstrable and manifestly disturbing to cardiac rhythm, and in particular to the gastro-intestinal distensions which also interfered with the paired mechanisms of respiration, and carried with them toxæmic and nervous reflex possibilities of evil. Gastric distension was often undetected through their forgetting that the crura of the diaphragm fixed the fundus to the spine, thus tending to guide its inflations into the left thoracic groove, behind the heart, at the expense of the more squeezable lung; and through their never looking for it in the back where it was to be found. This practical point he had often insisted upon, but it was first published in 1899 in a preliminary note, and in the Transactions of the Clinical Society of London, Vol. XXXIII, p. 202, "On Gastric Distension Upwards and Backwards." Clinical experience of its frequency and of its relief as a cause of urgent respiratory and cardiac symptoms had impressed upon him that, although it was only one of many, it was not the least frequent or the least potent of factors in the etiology of unexplained cardiac failure.

Dr. HECTOR MACKENZIE referred to various types of heart failure which were met with in practice. There were, first, the cases where the existence of heart disease had previously been unsuspected. The heart that failed had sometimes been passed as sound in a searching examination for life insurance only a short time before. Death occurred during sleep or perhaps with dramatic suddenness during the day. In these cases structural changes of the heart were usually present, such as fatty degeneration, fibroid disease, sclerosis of the coronary arteries. The clinical recognition of these structural changes in the absence of symptoms and physical signs was impossible. The immediate cause of death in these cases was obscure. Some seemed to be associated with dilatation of the stomach, and the fatal termination had followed a heavy meal and indigestible food. Of the younger cases some were probably examples of the condition known as status lymphaticus. Secondly, there were the cases of heart failure in which there had been for a shorter or longer period symptoms of functional disturbance, irregularity, rapidity, intermittence, anginal attacks, or dyspnœa, but there were no obvious signs of valvular lesion. In this group were included the heart after fevers, the influenzal heart, the heart after diphtheria, the heart in Graves's disease, the smoker's heart, and so on. Changes in the myocardium were generally found post mortem and were the effects of poisons acting on the heart muscle. Here symptoms and physical signs should lead to the recognition of myocardial disease and the adoption of the proper treatment which might tide the heart over the period of danger. Thirdly, there were the cases where there was old-standing valvular disease or adherent pericardium. There was a striking difference in the way in which failure came about in the mitral and in the aortic cases. In the case of the mitral lesions, the heart usually failed slowly, while in

the case of aortic incompetence sudden failure was not uncommon. Various explanations had been given of this difference, but one important contributing factor was the more usual presence in aortic cases of degenerative changes in the aortic and the coronary arteries, as well as in the myocardium. Rheumatic affections of the aortic valve were, on the whole, less dangerous than those which came on in middle life in association with atheroma of the aorta. If the heart muscle recovered its tone valvular lesions might be adequately compensated for and life might be prolonged to old age. The problem of heart failure was, as Sir Clifford Allbutt had pointed out, very complex, and it was quite as difficult to explain why in some cases heart failure was averted as why in other cases it came about. It was wonderful how good the recovery of a heart badly damaged in childhood might be, and how, by means of compensation, it might maintain its vigour throughout a long and active life. Even when compensation seemed to have hopelessly broken down and there was general dropsy with waterlogging of the tissues, orthopnœa, and rapidity and irregularity of the heart so that the end in failure seemed inevitable, the heart sometimes proved itself capable of recovering, the signs of impending failure disappeared, and compensation was again restored.

The debate was then adjourned.

EDINBURGH MEDICO-CHIRURGICAL SOCIETY.

Discussion on the Treatment of Simple Fractures.

A MEETING of this society was held on Feb. 28th, Mr. J. M. COTTERILL, the President, being in the chair.

Mr. CHARLES W. CATHCART opened a discussion on the Treatment of Simple Fractures. He said that in later years a stimulus to the search for improved methods of treatment had been supplied by the Workmen's Compensation Act. The economics of the question, also, must attract attention, for every man unfitted for his work by a broken bone was a loss to the State. Within recent years the revival of massage, and its remarkable success in the treatment of sprains and bruises, the revelations of the X rays, and the antiseptic method itself, which allowed of the direct inspection of the broken bone, had called attention to the healing of fractures. For the treatment of a recent case of simple fracture there were three methods available: the old immobilisation method, the massage and early movement method of Lucas-Championnière, and the immediate operation method of Arbuthnot Lane. 1. The immobilisation method consisted in setting the fracture and fixing firmly not only the seat of fracture but also the joints above and below it until the bone was united, a period varying from six to eight weeks. The guiding theory that union could not take place if there was the slightest movement at the seat of fracture was now known to be erroneous, for broken ribs healed readily in spite of respiration, and the success of the massage and early movement had removed any lingering doubts. Rigid fixation impeded circulation and delayed the union of the bones, while it permitted the formation of adhesions. 2. The massage and early movement method of Lucas-Championnière. Here splints were used only to a limited extent to prevent displacement. Massage was used as soon as possible after the fracture and continued daily at first and afterwards at longer intervals. Movements of the adjacent joints, both active and passive, were cautiously employed. The theoretical bases were that rapid healing of the broken bone was promoted by the free circulation thus induced, while adhesions were prevented and the nutrition of the muscles maintained. Exact apposition of the ends of the bone was considered of less importance for future usefulness of the limb than free use of the joints and muscles. The objections were the greater time and attention required, and that it did not give good results in certain cases. 3. The immediate operation method, recommended especially in fractures of the long bones of the lower limb. The ends of the bone were exposed, the blood clot removed, and the broken fragments adjusted and held in exact position by steel plates fixed into the bone with screw nails. The theory was that restoration of function, especially in the lower limbs, demanded mechanical restitution of the shape of the bone, without which union was delayed, and pain when the limb was used by the altered strains in the bone. No account was taken of the additional laceration of the soft parts involved by the operation or of the delay in obtaining functional restoration owing to disuse of the muscles and joints during the healing of the wound. But the operation required much surgical skill and thoroughly reliable technique. He submitted that (1) it was not necessary to secure the joints above and below the seat of fracture more than was necessary for the patient's comfort and the limb might be massaged and the joints moved as required. This modified method gave good functional results in most fractures of the shafts in children as well as in adults (femur excepted) where there was no great displacement of the fragments nor severe laceration of the soft parts. 2 Massage and early movement gave more rapid results than the preceding method, although the final results might not be much better. This was the method of choice for fractures near or involving joints, and in fractures of shafts with much laceration of soft parts and irregularity at the seat of fracture, as long as there was not much angular or axial deformity or necessity for complete restoration of length of limb. 3. Immediate operation where reliable technique was available was the method of choice in transverse fracture of the patella in healthy adults, in joint fractures where the fragments mechanically hindered movement, where important muscular attachments were torn off and could not be approximated; where a nerve was involved; where soft parts prevented the fragments from coming into contact, or where angular or axial deformity could not be restored by manipulation or posture, especially in the lower limb; or again where the patient's occupation necessitated walking without a limp as in the army or police force. As to individual fractures: 1. In Colles's fracture reduction was advisable not only to prevent deformity but to re-establish range of movement of the wrist. The fragments should be brought into apposition under a general anæsthetic, and a splint provided for the anterior aspect. Warm fomentations and gentle massage gave relief. Massage was repeated daily. In correct massage muscles were soothed, swelling was rapidly reduced, and no pain caused. Passive movements were confined at first to the fingers and carried to the wrist as pain subsided. Active movements of the fingers began about the third day; the splint was discarded in from 10 to 14 days and the hand removed from the sling in about three weeks. Adhesions were seldom apparent when the massage and movement treatment was properly carried out. In this fracture operation was seldom called for, but immobilisation was likely to do much harm. 2. In Pott's fracture, while massage and movement was the method to be employed, operation might occasionally be called for. Prolonged fixation was likely to lead to stiffness of the ankle. 3. In fracture of the shaft of the femur in children Mr. Cathcart did not remember any case which did not mend with perfect recovery of function. He preferred treatment by extension and local splints after reduction under chloroform, combined with massage and early movement. He was satisfied that operation and plating for a simple fracture of the shaft of the femur in a child were quite unnecessary. In adults, however, surrounding muscles were massive and powerful, and swelled rapidly, so that no one could determine the form of the fracture or accurately adjust the ends even under the deepest anæsthesia. Consequently, he believed that the accuracy of alignment in different cases depended not on the surgeon's skill but on the nature of the fracture. In transverse fracture the broken ends would over-ride, separated by the thickness of the shaft. In oblique fracture the ends, though over-riding, would be more nearly in line. For his own part, in fracture of the shaft of the femur in adults he was not prepared to give up the massage and movement treatment in favour of operation, though he was willing to admit that the operative results might be better.

Professor ALEXIS THOMSON said he was a follower of Lucas-Championnière. If there was pronounced shortening beyond what might be overcome by extension with weights, he advised the use of Steinmann's apparatus—a pin inserted into the lower end of the femur, whereby extension equal to 40–50 lb. was obtained. To correct eversion, the long splint was very useful, as were also sandbags. Among his recent cases he found one case of fracture of the thigh up and walking about in six weeks; an old woman over 80 who could walk well in six weeks; and a man with fracture of the neck of

the femur, who was up on the twenty-first day and out on the twenty-eighth.

Mr. DAVID WALLACE thought it one's duty in every case of fracture to use the X rays not only to determine the displacement, but after the fracture had been set to determine if it had been properly done. Mr. Wallace used practically no splints in his wards. In Pott's fracture he kept the leg at rest, but did not use sandbags; in Colles's fracture he put the arm in a sling and encouraged the patient to make movements. In fracture of the femur good alignment was most necessary. If it could not be got without operation he would operate. He thought it more difficult to get a good result without shortening in the clavicle than in any other bone.

Mr. A. A. SCOT SKIRVING said that he operated more frequently now than formerly, but never on any fracture where there was no displacement. In Pott's fracture he thought there was a great tendency to displacement; it had to be carefully watched, the great risk being the development of traumatic flat-foot.

Mr. HENRY WADE narrated the procedure in the out-patient department of the Royal Infirmary, where massage and movement had been carried out for several years past. Quite exceptionally splints were used. Massage and passive movements were carried out from the first, and, even in the most severe cases, active treatment within the first week. In a number of cases the patient's wife was the masseuse, and they had been able to instruct her in a very short time.

Mr. E. W. SCOTT CARMICHAEL said that splints in the treatment of fractures should be looked upon as a rare accessory. Massage and movement required more supervision and care on the part of the surgeon and medical man than they usually got. Striking differences in results were seen according to the intelligence and skill of the masseur.

Mr. J. W. DOWDEN said that in treating a case in private he employed adhesive plaster, placed the arm in a sling, encouraged the patient to make active, not passive, movements, and he himself massaged the part. He had done away with splints and bandages, but unfortunately there was still shortening which had to be corrected by extension. In cases of fracture of the elbow if one began with a little passive movement, in the course of the next day the patient would be practically well.

Dr. H. G LANGWILL, in reference to compensation, said that the point of importance to his mind was not merely the union and fair restoration of movement, but the patient's ability to earn his livelihood. A great many of the old fractures would be found going about unable for work three or four months after leaving hospital but drawing compensation.

Dr. A. PIRIE WATSON said that in fractures of the upper extremity he did not consider the splint important, but he emphasised the point that massage and movement could not be begun too early. Massage should precede reduction; it was useful for overcoming spasm in the muscles. If it took more time at first, it saved time and vexation later. The best masseur was the doctor himself; massage should never pain but always soothe.

Dr. JAMES RITCHIE said that his practice was after reduction to apply a light splint with an elastic bandage, because of the tremendous comfort it gave to the patient.

Mr. J. W. STRUTHERS said that after the patient reached a certain stage, what he needed was voluntary movement, and this could best be obtained by work. If it were possible to get light jobs for such patients they would become fit in a much shorter time.

The PRESIDENT cautioned against putting patients into the hands of enthusiastic and muscular masseurs, which harmed certain cases. The long splint was an abomination.

Mr. GEORGE L. CHIENE and Dr. JOHN ORR also spoke, and Mr. CATHCART, in replying, said that the difficulty in compensation cases was that a large number of such patients were quite satisfied if they were getting compensation and they did not wish to return to work.

NEW LONDON DERMATOLOGICAL SOCIETY.—At a meeting of this society, held on March 14th, Dr. P. S. Abraham, the President, being in the chair, Dr. Tom Robinson showed a woman, aged 51, the subject of Myxœdema, who also presented several brownish, verrucose nævi upon the neck and abdomen, which had only appeared during the last 18 months.—The President showed a case of Unilateral Facial Hyperidrosis in a young woman aged 24.—Dr. C. G. Mack showed a little girl with severe Melanodermia in whom constitutional symptoms indistinguishable from those of Addison's disease had been present.—Dr. David Walsh showed: 1. A girl with Scrofulodermia of the Neck. 2. A young man with a curious lesion upon the front of the thorax, somewhat infiltrated and depressed. Two years ago there had been a deeply excavated ulcer upon this area, and the question of malignancy was raised. 3. A young man with old Keratosis Pilaris that was now complicated by the presence of a circinate, erythematous eruption upon the trunk and limbs, resembling a syphilide.—Mr. D. Vinrace showed a little girl with Multiple Lupus.—Mr. H. C. Samuel exhibited a case of Cheiropompholyx in a young woman who had been subject to periodic attacks.—Dr. G. Norman Meachen showed a boy with Favus of the Scalp, whose father was born in Amsterdam, but the mother and the boy were Londoners. The father, a sister, and a brother were also affected.

HARVEIAN SOCIETY.—A meeting of this society was held on March 14th, Dr. H. J. Macevoy, the President, being in the chair.—Dr. R. H. Cole read a paper on Hypochondriasis, its Significance and Treatment. He defined the condition as a subjective state of ill-health which was more or less chronic, and was out of all proportion to any disorder of the bodily mechanism. The hypochondriac was one who was painfully conscious of his organic sensations and which dominated his personality to the detriment of impressions from without. He stated that the conducting medium of the sympathetic system had not been found to be defective, and questioned whether the condition was the result of toxins or was due to an anomalous constitution of cortical neurons—possibly those connected with the visceral representation in the Rolandic area of the brain. Referring to the milder cases, for which little could be done except that they should be induced to follow their usual avocations, he based his communication on a scrutiny of 50 of the graver cases that had been under his close observation. Most of these cases required certification, owing to disorder of conduct dependent on illusions and delusions. These cases all belonged to one of the two classes of hypochondriacal melancholia or hypochondriacal paranoia, and were not associated with any obvious bodily disorder. They were further clinically considered in four groups according as the symptoms were general, or were associated with the alimentary tract, the sexual organs, or the brain. The suicidal element was discussed as especially marked in the sexual cases. Whilst the paranoiacs were regarded as inevitably chronic, the proportion of recoveries from hypochondriacal melancholia was relatively smaller than in other forms of melancholia. Some might be considered as having attacks of melancholia superimposed on a paranoiac basis. Differentiation was made between these cases and hypochondriacs that were general paralytics, cases of dementia præcox, epileptics, alcoholics, and cases of senile involution. As to treatment, although the milder paranoiacs derived benefit from change of surroundings the melancholics required rest and quietude. Freud's method of psycho-analysis was referred to in tracing the origin of delusions. Forcible feeding was resorted to in all cases of refusal of food, and a *résumé* was given of the medicinal and other modes of treatment adopted.—The paper was discussed by Dr. E. D. Macnamara, Dr. Maurice F. Squire, and Mr. Campbell Williams.—Dr. Cole replied.—Mr. V. Z. Cope read a paper on Latent Surgical Disease, by which title he indicated those pathological processes amenable to surgical treatment which might advance to a serious stage while yet giving no appreciable symptoms of their presence. He remarked that disease was manifested by derangement of function, alteration in physical characteristics, or simply pain. Function varied normally within such great limits that early changes due to disease were easily missed. Alterations in size and shape of internal organs were not detected early unless important structures were impressed upon; pain was an inconstant symptom, inasmuch as viscera supplied by the sympathetic system were not sensitive to ordinary stimuli. Latency was a feature of acute disease both at its inception and again after the acute stage; the early symptoms of an acute appendicitis might correspond to an advanced pathological progress, and the condition sometimes appeared quiescent even when an abscess had formed. Chronic infections of mucous

membranes which were furnished with diverticula and crypts frequently gave no symptoms except by occasional exacerbations which were mistaken for reinfection; nasal sinusitis and chronic gonorrhœa were cited as examples. The chronic granulomata and neoplasms were the common classes of disease which remained latent. Tuberculosis was especially prone to give no symptoms when it attacked the peritoneum or kidney. Syphilis was frequently latent for long periods; he mentioned a case of actinomycosis of the appendix which gave rise to no abdominal symptoms. Attention was called to the extraordinary latency of carcinoma of the colon and rectum and the need of early rectal and sigmoidoscopic examination emphasised. The late stage of carcinoma of the cervix at which symptoms sometimes first appear was also laid stress upon. Duodenal ulcer sometimes gave rise to no pain of any description; the first sign might be a severe hæmorrhage or general peritonitis. All the remarks made in the paper pointed to the important conclusion that early symptoms often meant late disease. The practical consequences of such conclusion were obvious.—The paper was discussed by Dr. W. Carmalt-Jones, Mr. Campbell Williams, and Dr. G. de B. Turtle.

LIVERPOOL MEDICAL INSTITUTION.—A meeting of this society was held on March 14th, Dr. W. B. Paterson being in the chair.—The following specimens were shown and described:—Mr. C. A. Adair Dighton: 1. A Large Osteochondroma removed from the auricle under cocaine anæsthesia. It was of interest on account of its huge size and also because it was diagnosed, previous to removal, as epithelioma. 2. A specimen illustrating Intrinsic Epithelioma of the Larynx. This showed involvement of the ventricular bands, ventricles, true vocal cords, and arytenoid cartilages. It was removed by complete laryngectomy.—Mr. G. C. E. Simpson: Tuberculous Osteitis of the Ulna.—Mr. Simpson and Dr. D. Moore Alexander: (1) Papilloma of the Nose; and (2) Carcinoma of the Kidney.—Mr. R. W. Murray: (1) Sarcoma of the Scalp; and (2) Enterolith from the Mesocolon.—Mr. W. Thelwall Thomas and Mr. H. C. W. Nuttall: (1) Recurrent Sarcoma in the Stump; and (2) Lymphatic Nævus of the Skin.—Dr. T. R. Bradshaw and Dr. E. E. Glynn: Chronic Tuberculous Pericarditis.—Mr. R. A. Bickersteth: (1) Enormous Urethral Calculus; and (2) three specimens of an Unusual Breast Tumour.—Mr. Bickersteth read a note on three specimens of Unusual Breast Tumour. He considered them to be fibro-adenomatous in character. The cystic nature of some specimens was due to hæmorrhages which might cause a rapid increase in the size of the tumour. Mr. Bickersteth laid stress on the importance of macroscopic pathology as well as microscopic and referred to old writers who had described these tumours accurately.—Mr. F. T. Paul said the adenomatous tumours of the breast commenced in two ways; one as a peri-acinous growth and the other an intracystic vegetation. The former developed into the fibro- or myxo-adenomata, and the latter into the cyst-adenomata. Though the two when fully grown might show points of resemblance, they could always be distinguished from each other, and were really essentially different, more so even than acinous and duct cancer.—Dr. Glynn agreed with Mr. Paul in regard to the pathology of these tumours.—Dr. Glynn read a note on the Detection of Anthrax in Industrial Material. He pointed out that the disease appeared to be spreading among domestic animals, and consequently a larger number of agriculturists were becoming infected. It was difficult to demonstrate anthrax spores in industrial material; two methods were commonly used—viz., agar-plate cultures and inoculation of guinea-pigs. The latter method seemed the better, and by its means anthrax spores had been found in 21·3 per cent. of 41 samples of raw hides, wool, &c., examined.—Dr. W. Blair Bell read a note on the Estimation of the Calcium Metabolism, and gave a description of a new clinical method of estimating the amount excreted in the urine. The method consisted in centrifuging and measuring the amount of calcium oxalate, precipitated by oxalic acid, the phosphates being dissolved with acetic acid, in a calibrated tube. The estimation was made by comparing the amount precipitated from the urine with that obtained in a similar manner from an artificial standard urine containing a known quantity of calcium.—Sir James Barr said that the profession was very much indebted to Dr. Bell for the great amount of work which he had undertaken in order to determine a clinical method for accurately estimating the amount of lime in the urine. This apparatus, which he now showed, would fulfil all the necessities of clinical work in respect of estimating the lime salts in the urine. His own method for estimating the amount of lime in the urine was a very simple one. He took an ounce of urine, neutralised it with a little ammonia, then added concentrated solution of oxalic acid with 5 per cent. of strong acetic acid. This precipitated the lime as oxalate of calcium, and all the phosphates were dissolved by the acetic acid. With some experience the eye soon recognised what was normal and what was abnormal. He also showed that the excretion of lime by the kidneys was much greater than was usually supposed.—Dr. H. R. Hurter referred to the simplicity and ingenuity of Dr. Bell's method of estimation. He expressed surprise and satisfaction that the results obtained by it had been shown to coincide so closely with quantitative chemical estimations. He suggested the possible employment of a saturated solution of sodium sulphate as an alternative reagent for precipitating the lime salt.—The council of the Institution have appointed Mr. Paul, Dr. Glynn, Dr. R J. M. Buchanan, and Dr. Bell to form a Pathological Reference Committee.

NOTTINGHAM MEDICO-CHIRURGICAL SOCIETY.—A meeting of this society was held on March 6th, Mr. W. M. Willis being in the chair.—Mr. Willis showed a man whose thigh had been amputated for Diabetic Gangrene of the Foot. Spinal anæsthesia was employed and the patient had no shock following the operation. Since the operation the amount of sugar passed had greatly diminished. Mr. Willis also showed a case of Compound Subastragaloid Dislocation of the Foot; excision of the astragalus was followed by very good functional result.—Mr. H. B. Tawse showed a girl with a Median Cystic Swelling in the Neck. This was attached to the base of the tongue. It was thought to be a thyroglossal cyst.—Mr. K. Black showed a child 4 years old who had been operated upon for Cleft Palate and Hare-lip. The hare-lip had been operated upon when the boy was 1 week old and the cleft palate when he was 5 months old; the flap operation was performed. The result was only moderately successful as far as voice sounds were concerned.—Mr. C. H. Allen showed a man of 73 years; the patient had Sarcoma of the Thigh. Spinal anæsthesia (stovaine) was used. The limb was disarticulated at the hip-joint by means of lateral flaps. The patient suffered from no shock after this very severe operation. A microscopic slide confirmed the diagnosis.—Mr. P. Tresidder showed a girl 16 years old with Hypertrophy of the Mammæ. No operation was advised.—Dr. F. H. Jacob showed a man with severe Leucoplakia of the Tongue; in view of the possibility of future malignant disease removal of the tongue was urged by several of the members.—Dr. W. T. Rowe showed a man of 50 years with a mass of Enlarged Glands in the left groin and much œdema of the left lower limb. The symptoms had existed for three months and first started with pain in the left knee, then swelling in the groin, and finally swelling in the left leg. There was no disease of the rectum, perineum, nor of the genital organs. A diagnosis of lympho-sarcoma of the femoral glands was made and the case was considered to be inoperable.

GLASGOW MEDICO-CHIRURGICAL SOCIETY.—A meeting of this society was held on March 1st, Dr. J. Galbraith Connal being in the chair.—Dr. Leonard Findlay showed a man, the subject of myotonia, who gave no history of heredity and presented no evidence of neurosis, but was in other respects a typical case of Thomsen's disease.—Professor Walter K Hunter read notes of a case of Elephantiasis occurring in this country. The patient was a woman aged 61, in whom swelling of the legs had begun about 30 years ago, subsequent to repeated attacks of erysipelas. For many years the swelling had been so considerable as almost to prevent walking, and ulceration had occurred in various parts of both legs. On admission to Glasgow Royal Infirmary in October, 1911, the patient suffered also from marked ascites with splenic enlargement, no apparent pulmonary or cardiac valvular disease, but slight albuminuria. Within the following four weeks the abdomen was tapped thrice, but on each occasion the fluid rapidly reaccumulated, and the patient died on Nov. 26th. Post-mortem examination showed fatty degeneration of the cardiac muscle, dense perihepatitis and perisplenitis, great enlargement of the spleen, slight congestion of the kidneys, the capsules of which were adherent, and enlargement of the

retro-peritoneal glands. Microscopic examination by Dr. J. H. McNicol revealed marked multilobular cirrhosis and fine monolobular cirrhosis of the liver, thickening of the spleen capsule and trabeculæ, catarrhal nephritis, and hyperplasia of the lymph nodes of the retro-peritoneal glands. Sections of the skin of the lower limbs showed hyperplasia of the subcutaneous tissue, but no thickening of the epidermis nor unduly fibrous condition of the cutis vera.—Dr. J. A. Wilson read a paper on Keratitis as a cause of Myopia. He had collected a series of 100 cases of corneal opacities, and found myopia in 69 per cent., and that the average amount of myopia was a little over 3 D. The keratitis that produced the opacities was, with striking frequency, said to have followed measles. A few of the cases seemed to be due to ophthalmia neonatorum, and among those affected at an older age were some due to interstitial keratitis. In 21 cases there were opacities in one eye only, and of these 21 eyes 13 were myopic. In the 10 most pronounced cases in this section there was a total of 38 D. of myopia in the 10 nebulous eyes and only 1.5 D. of myopia in the 10 non-nebulous eyes of the same cases. Dr. Wilson then considered three possible ways in which alteration in the structure or mechanism of the eye might effect this result: (1) by stretching of the posterior segment of the globe as in ordinary myopia; (2) by increased curvature of the cornea; and (3) by yielding at the sclero-corneal junction. He found some evidence of change at the fundus; a fair proportion presented increased curvature of the cornea sufficient to account for the myopia, others presented slight increase, but not sufficient to account for the myopia, while others showed flattening of the cornea. There was also evidence in some cases of yielding at the sclero-corneal junction. The condition as a whole resolved itself into an inequality between the intra-ocular pressure and the resistance offered thereto. The treatment was discussed with this finding kept in view.

MANCHESTER MEDICAL SOCIETY.—A meeting of this society was held on March 6th, Dr. E. S. Reynolds, the President, being in the chair.—Dr. W. Fletcher Shaw read a paper on the Treatment of Placenta Prævia based upon 100 consecutive cases. He considered the best treatment for both mother and child was to leave nature alone provided the hæmorrhage was not very great and the doctor could remain in the house until the labour was over. If the hæmorrhage was more severe manual dilatation of the cervix followed by rapid extraction of the child with forceps or version gave the best results. Simple podalic version gave excellent results to the mothers but generally sacrificed the child. Packing, Champetier de Ribes's bag, and Cæsarean section he did not advocate for this condition.—Dr. C. Paget Lapage read a paper on Certain Forms of Fever of Obscure Origin in Infancy and Childhood. The more common causes of obscure fever were discussed, attention being drawn to otitis media. Blood diseases and Hodgkin's disease might be either acute or chronic with exacerbations. In such cases there might at first be no evidence of the cause until the blood was examined. Infection of the genito-urinary tract with the bacillus coli communis, either as an acute pyelitis or in a less severe form, was very important, and emphasis was laid on the need of careful examination of the urine in infants. A case of this nature with the complication of perinephritic abscess in an infant of 2 years was described. Fever due to gastro-intestinal disturbances, such as chronic intestinal indigestion, and recurrent fever due to excess of carbohydrates were also discussed, and a case of fever from overfeeding with breast milk described. Finally, meningitis was dealt with.

EXTENSION OF CHESTER INFIRMARY.—The scheme for the extension and renovation of Chester Infirmary is to be proceeded with directly the necessary formalities have been completed. The board of management has accepted, out of 13, the tender of J. Mayers and Son, of Chester, for £37,490. Although no appeal has yet been made, a sum of £32,338 has already been promised towards the £40,000 which it is estimated will be required. The President (the Duke of Westminster) has promised £3000; Mr. Albert Wood, of Conway, £12 500; Mr. George Barbour, £1000; Messrs. Frost and Sons, £1000; the Mayor of Chester, £20; and in addition there is an anonymous donation of £1000. £1337 have also been realised from the pageant.

Reviews and Notices of Books.

1. *The Individualization of Punishment.* By RAYMOND SALEILLES, Professor of Comparative Law in the University of Paris and in the College of Social Science. Translated from the Second French Edition (1908) by R. S. JASTROW. London: William Heinemann. 1911. Pp. xxxviii.–322. Price 16*s.* net.
2. *The Modern Prison Curriculum.* A General Review of our Penal System. By R. F. QUINTON, M.D., late Governor and Medical Officer of H.M. Prison, Holloway. London: Macmillan and Co., Limited. 1912. Pp. 276. Price 5*s.* net.

IN both of these books, but, as we shall see, from different points of view, the objects and methods of punishment for crime are discussed. The much larger work by Professor Saleilles consists mainly of historical and scholastic disquisitions on the principles of punishment, while Dr. Quinton's book reviews the English prison system in its relation to the assumed objects of punishment, reform and restraint.

1. M. Saleilles's conclusions regarding what he names the "individualisation of punishment" appear to us as neither new nor commensurate with the elaborate process of his argumentation. His style, moreover, is marked by a wearisome iteration of phrase, and often by an indefinite or inappropriate use of words. It must be remembered, however, that some of these blemishes may be attributable to the fact that the book before us is a translation. Considerably more than half of this work is devoted to a somewhat nebulous discussion of such time-worn questions as responsibility, free-will, determinism, &c.; and seeing that the author's object is to advocate the individualisation of punishment and the consequent necessity of studying the criminal's personality as a whole in its nature and surroundings, we need to know exactly what he means by the terms he frequently uses. Yet we nowhere find a clear statement of what he means by "responsibility," and we wonder what sense he attaches to the word "freedom" which he speaks of variously as "a state of positive action," as "a moral conception," as a "datum of the personal consciousness," as "a capacity," and as "based on an individual belief." It is true that this book is based on a course of lectures delivered from a legal chair, and does not explicitly profess to be a treatise on criminal psychology. But in so far as the author's plan involves the introduction of some psychological and biological assumptions, as evidenced, for instance, by the use of the word "natural" as applied to criminality, as well as of many psychological terms, the absence of precision of language and clarity of style is much to be regretted.

In advocating the adjustment of punishment, not to the social gravity of the actual crime committed, but to the complex personality of the individual himself considered as a whole and in relation to his surroundings, M. Saleilles does but reiterate what most modern penologists are essaying to compass—the appropriate treatment of the criminal rather than either the exclusively retributive punishment for the crime committed, or, on the other hand, punishment for the exclusively social purpose of deterring others. In expressing his views on this he propounds an arbitrary division of criminals into three classes: the accidental criminal, who is psychologically normal and therefore responsible; the "incorrigible" criminal; and the criminal who presents a "natural criminality" which is to be eradicated and is amenable to reformatory treatment. The purely *deterrent* punishment, he says, is fitted for the accidental criminal; he is "psychologically normal and needs no reform." For the "incorrigible" the proper treatment is either *detention*

or *elimination*, in order to protect society. *Reformatory treatment* is to be reserved for the large intermediate class who are assumed to be "natural criminals." Yet, when speaking of the accidental class, assumed to be normal and responsible, the author contends that their normality is "not an original and wholly spontaneous condition, but a slow and progressive one [? acquired] which may disappear." For all this he justifies for them, as we have seen, a purely deterrent punishment. The true criminal, however, of the large intermediate class which he deems reformable is, in his opinion, a "natural criminal," an abnormality. But why "normality" should be at least partly of slow and progressively acquired growth, while abnormality is "natural," or what is meant by all these terms is nowhere explained; and it would thus seem that no one can be blamed for not understanding the implied denial of "responsibility" (whatever this word may be taken to mean) to the *reformable* criminal merely on the dogmatic assumption that he is "abnormal."

Many modern writers about penology do not perceive the simple fact that whatever "treatment" be applied by law to the criminal or law-breaker of any kind—no matter what the explicit object of the treatment may be—*must* be "punishment," and by consequence disagreeable. If a man be physically or mentally hurt, or fined, or deprived of anything of which he feels the loss, or restrained in any degree whatever from the full exercise of the legal liberty which is common to all men, that man *is* punished; he suffers pain. Further than this, whatever may be preached to the contrary, the most enlightened public opinion justifies that suffering on the ground, perhaps not always explicitly recognised, of the still living principle of retributive justice. If this principle were no longer vital, society itself would disapprove of inflicting pain of any form on a man in order only to deter others from committing crime; or, indeed, on the sole pretext of reforming him or doing him good. Be this, however, as it may, there is no possible system of dealing with or treating a criminal without "punishing" or hurting him. We may remark, by the way, that though there is no object in detaining insane persons, except for the good of themselves and the community, the pain of loss of liberty is suffered by them as much as, or perhaps more than, by most criminals; and that in the deprivation of privileges within asylums many insane persons both feel and profit by this form of punishment, which is practised and justified on the principle of deterrence applicable both to the individual concerned and to his fellow inmates.

Professor Saleilles, with many of his contemporaries, fails to perceive these things. If he had followed the example of a great criminal judge in this country, and insisted on the necessity of a clear conception of the meaning of the word "responsibility" in relation to crime and its punishment, he might have saved himself from much of the laborious logomachy which mars this book; and need not have entered into the arena where Free Will and Determinism are eternally fighting for the crown. Both of these combatants, like materialist and idealist philosophers, are practically at one in their methods when dealing with human affairs, however they may disagree in theory. Though the idealist may preach that science can deal only with phenomena and their inter-relations, he cannot, in practice, rid himself of the dominant notions of causation and reality; nor can any social student or moralist, whatever his "credo," deny the practical freedom, within the everyday sphere of action, of most men to choose their course of conduct. Responsibility, in the only sense which concerns penologists, must mean, as Sir James Stephen contended, "liability to punishment"; and, as Dr. Mercier has shown in his clearly reasoned book on "Criminal Responsibility," the further qualification is needed that the liability must be "right"—i.e., in accord with the general contemporary social sentiment. But M. Saleilles, in attempting to rid himself of the difficulty of dealing with the notion of the responsibility of criminals, which he admits that criminologists cannot afford (*sic*) to ignore, is led to indulge in such writing as this (see p. 272): "Instead of measuring or estimating the degree or extent of freedom exercised by the criminal we should look at the relative depravity of the emotion that incited to action. The subjective criminality of the action is to be substituted for responsibility." Even if this remark should be deemed intelligible when studied in its context, it is not easy to see how it helps the student of penology.

A little further on (p. 274) we find it written: "Having thus reached the heart of the question, let us supply a definite constructive system of specialised punishments to be applied according to the moral temperament of the criminal." Here follows more preliminary postulation before the practical issue is reached. There is, it is argued, static (or passive) and dynamic (or active) criminality; active criminality should determine the duration of the punishment; passive criminality, or "character," should determine the nature or kind of punishment. Criminals, therefore, must be classified psychologically in order to reach an adequate classification of punishments. But here the author makes a halt, or almost a *volte-face*, and warns us against the "serious primary difficulty of losing ourselves in minute details and distinctions." We must not go too far into the investigation of *causes;* "we lack a sufficient scientific criterion for this; we must not aspire to the impossible lest we descend to the ridiculous. All we can do is to classify criminals with reference to the provisions at our command, which are limited to measures of repression, together with suitable varieties of discipline." "The *law* should not go far into the causes and types of crime, into heredity, environment," &c., but should "confine itself to social standards" and deal chiefly with the *degree* of crime. The classification should be adapted to the results which the law seeks to secure. Finally, after more circumlocution, the author urges that there is a fundamental and ancient three-fold classification which is "classic" in its traditions and has not yet been replaced. It includes (1) offenders without true criminality; (2) offenders whose criminality is but superficial; and (3) offenders tainted with a fundamental, and thus ineradicable, criminality—the incorrigible. This, he urges, is a "fundamental" division, to which should correspond the three classes of punishment—"deterrent," "corrective," and "protective," this last word implying, we presume, solely the protection of society. This conclusion is offered as a "basis and point of departure for future criminal law"! Apparently, if the inquiring penologist examines this somewhat addled egg, which has undergone such a tedious and prolonged term of incubation, the pabulum he will find is this: the offender who has "no true criminality," or, in other words, the "normal" man, must be punished for the sake only of deterring others. The offender whose criminality is superficial must be punished with a view to reform, while the "incorrigible" is to be punished for the sake of society; or, in other words, the least criminal and the most criminal are to be punished for the sake of others only, while the intermediate offenders, who are by far the more numerous, are to be punished primarily for the sake of themselves. To round off this gospel of penology, which is something strange though not altogether new, M. Saleilles says that even the *judicial* individualisation of punishment (which he has before stated to be the best kind of individualisation) is inadequate; that the classification of offenders and punishments must be general, as it is

impossible to consider an indefinite variety of punishments adjustable to the precise moral temperament of each individual. Therefore the law must give to the *administrators* of punishment sufficient power to adjust discipline to educational and moral requirements. For reformation and moral regeneration no fixed term of punishment is appropriate. The criminal must be treated like a patient—in the moral sphere. And the treatment he prescribes is the indeterminate sentence and detention in institutions of the type first known in the establishment of the Reformatory at Elmira in the State of New York.

It is clear to anyone duly conversant with the practical side of penology as well as with the principal literature of the subject that, however erroneous and nebulous, or however profound and scientific, M. Saleilles's theory and doctrine may be deemed by critics to be, the three classes of offenders that he exhibits to the reader of this book are just the same as have long been recognised under other names by most modern penologists: the accidental offender (a large class), whom *detection* alone is generally sufficient to "cure," whatever the nature of his "crime" may have been; the ordinary heterogeneous criminal of many colours (also a large class), who is but little deterred by loss of liberty and other apparent inconveniences which form the sum total of most modern "punishments"; and the "incorrigible," who, whether approximately sane or frankly insane, cannot be in any way impressed for the better by any punishment at all. But it must be remembered that there is no "natural" class, including all incorrigibles; nor can the diagnosis of incorrigibility be made without personal study of each case. It may indeed be said that after deducting such criminals who, apart from their actual crime, show marked evidence by their general conduct of mental defect in some sphere, it is rash to say that anyone is incorrigible. Even the ablest and most inveterate offender, who forges or steals or embezzles as a profession in spite of frequent detection and punishment, and without the initial temptation of poverty, may either from very weariness or belated reflection turn over a new leaf. But there is no means in such cases of making an early forecast of the probability of such a spontaneous reform in any individual case, and most of them should be detained for the benefit of society.

As the author proceeds to the more practical or constructive part of his essay he seems somewhat less troubled with the numerous speculative difficulties which he has raised and laboured to grapple with in the earlier pages. Treating in his last chapters on the legal, judicial, and administrative individualisation of punishment he warns against "false sentimentality" and says: "Obviously punishment must be severe, otherwise it would not be a penalty; it would cease to intimidate"; and he congratulates, in all justice, "the French school on its acceptance of truth, wherever it finds it, without too close allegiance to systems—a school of practical methods and happy solutions, one of good sense and fine Gallic insight." In spite of our criticism of this particular French book our French *confrères* will doubtless justify us in claiming some "Britannic" insight into penological questions on similar grounds to those put forward by M. Saleilles on behalf of his countrymen. While freely admitting that the criminological literature of England cannot compare with that of France either in quality or quantity, the course of penal legislation in Great Britain shows that we too adopt practical methods and happy solutions without too close allegiance to systems.

2. A study of "The Modern Prison Curriculum," by Dr. Quinton, will help to justify the claim just made. The author, who is an experienced medical officer and prison administrator, writes about what he has seen and reflected upon himself. He has, he says, "no startling theory to propound on a subject about which the evident differences of opinion are consistent with a genuine desire to promote progress." The general view he holds recognises the interests of society as a legitimate factor for consideration in the settlement of penal policy, but does not ignore the rights or interests of the criminal. We think that his book successfully supports his contention that the interests of society and those of the criminal in this country correspond in the long run much more closely than most people imagine. Although he is careful to emphasise his opinion that reluctance to punish and reluctance to detain criminals are signs of the times which are not wholly without drawbacks, Dr. Quinton fully recognises the value of the most modern methods and proposals in the direction of reforming criminals and of the prevention of crime, such as have been instituted by the English modification of the Elmira treatment, known as the Borstal system, or adumbrated in a late scheme for "suspension of sentence." In the whole of this general review of our penal system the author shows that he is well informed in the literature of penology and of the practice of other countries, and that his comments on both the virtues and defects of existing systems of punishment are the result of no small knowledge.

The chapter on "Reclamation" appears to us to give due weight to the increased importance rightly attached by modern public opinion to all possible efforts directed towards the reformation of persons convicted of crime, while keeping clearly in view the desirability, as well as the general *inevitability*, of the element of punishment, if only that of enforced detention, in order to compass this object. In this connexion the actual advantages and proved success of the Borstal system in England in the treatment of youthful offenders are well set forth. This system, devised by Sir Evelyn Ruggles Brise, has been tried now for several years, and was definitely formulated and established by the Prevention of Crime Act of 1908, which ordained that certain classes of juvenile criminals could be sentenced directly to reformatory treatment instead of being sent to prison. We find also in this chapter a thoughtful appreciation of the new legislation contained in Part II. of the above-mentioned Act, which is concerned with the treatment of persons sentenced to penal servitude and found by the court to be "habitual criminals." This legislation is but now about to take effect, all criminals sentenced to preventive detention since the passing of the Act having been obliged to serve their penal sentences before entering on the period of further detention. It is not possible, therefore, at present to make any useful forecast of the result of this measure, which is intended to prevent the commission of crime by the habitual offender and at the same time to encourage all possible efforts at reclaiming him. It appears to us that since the maximum period of preventive detention is but ten years, and since the Secretary of State has power to shorten this period at any time by earlier discharge on licence, the success of this part of the Act will depend wholly on the way it is administered in each case. This experiment in the direction of the "indeterminate sentence" will be watched with deep interest by all students and practical administrators of penal measures.

We congratulate Dr. Quinton, who had the advantage of exceptional opportunities of studying mentally defective criminals at the convict prison at Parkhurst for many years before he was appointed to the Governorship of Holloway prison, on having made such good practical use of his professional knowledge and experience. Although this book will primarily attract the attention of penologists, it will not fail to be of considerable interest to many medical readers.

The Internal Secretions and the Principles of Medicine. By CHARLES E. DE M. SAJOUS, M.D., LL.D., Professor of Therapeutics in the Temple University of Philadelphia. Fourth edition. London: Stanley Phillips. Philadelphia: F. A. Davis Co. 1911. Two Vols. Pp. 1873. Price 50*s.* net, cloth; half morocco, 63*s.* net.

IMPRESSED with the shortcomings of physiological science as at present set forth by its votaries, the author attempts in the book before us to construct a new system of physiology based on the importance of the ductless glands. We cannot attempt within the compass of a review to give more than an imperfect sketch of his *novum organum*. Put shortly, the basis of life is the secretion of the suprarenal glands, which supplies the oxidising principle to all living tissues. This secretion is carried to the lungs by the vena cava inferior, and there some of it is taken up by the erythrocytes and combined with hæmatin to form hæmoglobin. The important part of the blood is, however, the plasma, the red cells only forming a storehouse for the "adrenoxidase" as the principle is named. The plasma of the blood penetrates all organs and excites their activity. Thus, carried to the muscles it combines with myosinogen and gives rise to muscular energy. Carried to the nerves, it produces nervous energy, by the action of the oxidising ferment on the lecithin of the myelin sheaths, which stands to nerve in the same relation as myosinogen to muscle. The so-called axis-cylinders are merely tubules through which the ferment flows. Indeed, not only is adrenoxidase a ferment, it is the ferment of ferments, as it enters into the composition of all ferments, which consist of this substance in combination with nucleo-protein and a specific zymogen. In the case of the pancreatic ferments, the zymogen of trypsin is secreted by the islands of Langerhans, that of the amylopsin by the other cells of the gland. Products of digestion are taken up by the leucocytes and by them conveyed to the cells of the tissues. Thus neutrophile leucocytes supply myosinogen to the muscles, basophile cells convey myelin, derived from fats, for the use of the nervous system.

But if the suprarenal glands are thus all-important, they are themselves subject to the control of a higher centre—the pituitary body. This organ is in part a test organ, the homologue of the "osphradium" of mollusca, which is supposed to test the purity of the water in which the animals live; but it is also a most important nerve-centre, controlling all vital functions. Among other duties, it controls the immunising processes of the body, regulating as it does not only the suprarenal functions but also those of the thyroid and parathyroid bodies. Of the substances active in immunity the amboceptor is only adrenoxidase, while the opsonins and agglutinins, and to some extent antitoxins, consist of thyroid secretion. The latter is also an important stimulant to cellular activity, its iodine constituent regulating phosphorus metabolism. Incidentally Dr. Sajous denies that the cells of the thyroid are epithelial in nature, regarding them as leucocytes. The concluding chapters of the second volume set forth a theory of therapeutics founded on the foregoing physiological basis. Interspersed among the theoretical discussions are valuable accounts of the different diseases, such as Graves's disease, acromegaly, cretinism, and so forth, generally recognised as due to disturbances of the functions of the ductless glands.

So far as the new physiology is concerned, we must admit that, taken in bulk, it is rather too big a dose. That existing physiological knowledge is sadly defective we readily admit; indeed, if we were to subtract from an ordinary text-book all descriptions of instruments and all purely hypothetical explanations, the remaining body of facts—or as Sir Clifford Allbutt would prefer to say, truths—could be compressed into a very moderate-sized volume. But Dr. Sajous's system is too revolutionary to be accepted without much stronger evidence than he here affords. Indeed, the arguments, though supported by a vast amount of painstaking research in the byways of physiological literature, seem rather flimsy. Thus it hardly follows that because iodine and phosphorus react chemically, therefore the thyroid secretion, containing iodine, is the controlling agent in vital phosphorus metabolism. Nor do the facts that chlorine and hydrogen combine at a temperature of 39·5° C. and that the warmth of the gastric cavity is about 38° C. help very much in understanding the formation of gastric juice. These are merely samples of the reasoning employed. If, however, we cannot subscribe to the author's conclusions we cannot fail to recognise the diligence with which he has collected all possible information bearing on the subject of his studies, while some of his speculations, as, for example, the suggestion of the homology of the pituitary body, are interesting and ingenious. Incidentally, we may question whether oxyphile cells are to be understood as "oxygen-loving," the term merely implying affinity for "acid" dyes; while "*extra corpore*," a frequently recurring phrase, would, we fear, hardly pass muster in an English school.

An Index of Treatment by Various Writers. Edited by ROBERT HUTCHISON, M.D. Edin., F.R.C.P. Lond., Physician to the London Hospital and Assistant Physician to the Hospital for Sick Children, Great Ormond-street; and H. STANSFIELD COLLIER, F.R.C.S. Eng., Surgeon to St. Mary's Hospital and Surgeon to the Hospital for Sick Children, Great Ormond-street. Sixth edition, revised and enlarged. Bristol: John Wright and Sons, Limited. 1911. Pp. 1039. Price 21*s.*

THE first edition of this excellent work was published in November, 1907; the fact that it has now reached the sixth edition is sufficient proof of the extensive favour with which it has been received by the profession at large. In preparing a new edition, opportunity has been taken to revise thoroughly all the old articles and to include several new ones. Amongst those appearing for the first time are puerperal sepsis, hydro-, photo- and thermo-therapy, and treatment by carbonic acid snow. The last-named agent is of special interest to dermatologists. For instance, capillary nævi may be completely removed by a single application of forty seconds' duration with firm pressure. Moles and warts can also be successfully removed by this method. One of the latest of the many satisfactory applications of solid carbon dioxide is in the treatment of rodent ulcer. Details are given of the preparation and application of the remedy.

We can cordially recommend this work to all practitioners. It contains a vast amount of valuable information arranged for ready reference. It is most complete as regards both medical and surgical affections, and therefore will be found especially valuable to the general practitioner.

A Manual of Diseases of the Eye. By CHARLES H. MAY, M.D., New York, and CLAUD WORTH, F.R.C.S. Eng. Third edition. London: Baillière, Tindall, and Cox. 1911. Pp. 427. Price 10*s.* 6*d.* net.

IN the third edition of May and Worth's "Manual of Diseases of the Eye" the general character of the work is maintained, and it has been brought up to date. The most important addition is a chapter on vaccine therapy, by Mr. S. H. Browning, bacteriologist to the Royal London Ophthalmic Hospital, than whom no one in England is better qualified to write upon this special branch of the subject. The wealth of coloured and other illustrations, the conciseness and accuracy of the text, and the wholly practical nature of the teaching make this book especially attractive to the student of medicine who has only a limited time to devote to this particular branch of his subject. For him,

and as an introduction to more exhaustive study of ophthalmology, the book can be confidently recommended as a reliable guide. Considering the severe restrictions which the authors have set themselves, a wonderful amount of information is conveyed in a small space. It is well marshalled, so that the relative importance of various pathological conditions is duly emphasised—a point not infrequently lost sight of in some larger text-books. Particularly commendable are the short anatomical introductions to the chapters on the diseases of the different structures. They show an appreciation of the scientific basis of pathological detail which cannot be too thoroughly inculcated into the student's mind, and which creditably distinguishes this work from the ordinary cram book. The use of heavy type and short paragraphs simplifies the reader's task, and occasional tables of differential signs and symptoms facilitate recapitulation.

Modern German Hospital Construction. By WILLIAM MILBURN, jun. London: Royal Institute of British Architects. Pp. 142. Price 3*s.* 6*d.* net.

IN a compact form and with numerous illustrations Mr. William Milburn, jun., A.R.I.B.A., has given us a graphic description of the construction of hospitals in Germany. This is a welcome contribution to a highly technical subject, and it is good to see with what scientific care and studious forethought the Germans have endeavoured to build hospitals that will render the maximum service. Hospital building in Germany is not left, as it recently was with us, to the fancy of a few charitable persons; it is treated as a national problem. The compulsory insurance against sickness makes the prevalence of illness a matter that affects the entire population, since those who are well have to pay for those who are sick. Every town must provide at least one hospital, and the municipalities of large towns build, equip, and maintain several hospitals. All classes are admitted to these hospitals, but the patients pay from 2*s* 6*d.* to 15*s.* or 20*s.* per diem, according to the accommodation provided. The medical and surgical staff are paid for their services. The university hospitals, or "Royal Clinics," are the centre of medical education and study, and these are maintained by the State. Nevertheless, something yet remains of the old days when the poor had to depend on private charity and voluntary subscriptions, generally organised by some religious body. Thus, we still have denominational institutions in Germany of the kind so well typified by the Jewish Hospital at Cologne.

As a great number of the hospitals are of recent construction the sites selected have been suitable in view of the modern extension of the large towns. Care having to be taken to secure ample space, pure air, light, and freedom from noise and dust, the hospitals are mostly found outside the towns and on the side where the prevailing winds should not be overcharged with the results of commercial industry. The area of the site per bed varies from 72·7 square yards at St. Georg, Hamburg, to 152 square yards at the Virchow Hospital, Berlin. But for the most part it seems to us that the German hospitals are too large. The Hamburg Eppendorf and the Virchow at Berlin have more than 2000 beds, and in our opinion half that number of beds are as much as can be conveniently managed in any one establishment. Nearly all the large towns have one general hospital, but there are two at Dresden, three at Hamburg and Munich, and four at Berlin. A general hospital should provide for all class of medical and surgical cases, including maternity, children's diseases, and venereal diseases. The greater part of the medical staff have to reside on the premises. The nursing staff is organised on much the same lines as in England. The building of modern hospitals date from the construction of the Moabit Hospital at Berlin in 1872. It is acknowledged that the great reform then commenced is based on the lessons learnt during the Franco German war of 1870–71. The Moabit Hospital consists of pavilions of only one storey well separated one from the other.

Mr. Milburn gives the ground plan of all the leading hospitals, and notably the Eppendorf Hospital at Hamburg, with its 2150 beds and its staff numbering 820, of whom 670 live on the premises. There are here no less than 100 separate buildings, of which 85 are for the patients. Then the details are considered, such as the construction of the administrative blocks and their relation to the reception hall. The possibility of patients introducing infectious diseases and the painful sights when accident cases are brought in are also taken into account. At Charlottenburg West End this difficulty is overcome by admitting patients to a one-storey wing with a separate entrance on one side of the administration block, and this is balanced by a similar wing at the other end containing the dispensing department. Then we have plans and photographs of aseptic and septic operating theatres, for both are provided in most of the hospitals, that of St. Georg Hospital at Hamburg being considered among the best. The methods of heating and ventilating are dealt with, though only briefly, both with regard to operating theatres and the sick wards. In this respect we are told that in mild weather natural ventilation is preferred, and for this purpose the English sash window is not approved, for only half the area of the window can be opened. Mechanical ventilation is indispensable in the colder weather, and in some cases it is necessary to filter and humidify the air before it is admitted into the wards. The usual amount of air demanded in the specifications for large wards is 2650 cubic feet per bed renewed twice per hour. In the lavatories the change should be five times in the hour.

Much other useful information is given on thoroughly practical questions, and the volume should prove of use to all who are interested in hospitals.

Handbuch der Pathogenen Mikroorganismen. Herausgegeben von Dr. W. KOLLE und Dr. A. VON WASSERMANN. Zweite vermehrte Auflage. Jena: Gustav Fischer. 1911 and 1912. Pp. 200, 128, and 160. Price 5 marks each.

THE third instalment of the second edition of this important work deals with the general morphology and biology of pathogenic micro-organisms; and it completes the account of the occurrence of pathological organisms in water, in various articles of food, and in the houses and clothes of human beings. The next section is concerned with the general methods of bacteriology. The microscope with its various adjuncts suitable for bacteriology is described, and a good account is given of the methods of examination of preparations, both unstained and stained. The last portion of this part deals with the culture of bacteria. In the fourth instalment this subject is continued, and is followed by a section dealing with the examination of tissues, air, and water for bacteria. The employment of animals in the investigation of bacteria is described, and the final chapter deals with auxiliary apparatus in the investigation of bacteria. The fifth instalment consists of a very full account of the bacteriology of cholera and the question of the possibility of producing immunity against it. The thoroughness with which the subject is treated will be recognised when we say that the account of the cholera bacillus occupies 109 pages. The subject is considered from every possible point of view with satisfactory results.

The re-issue of this valuable work contains much more than the first edition, and will be most valuable to the bacteriological laboratory.

LIBRARY TABLE.

Shop Slavery and Emancipation. By WILLIAM PAINE. With an introduction by H. G. WELLS. London: P. S. King and Co. 1912. Pp. 125. Price 1*s.* net.—The hard lot of the shop assistant, more especially in the drapery and grocery trades, is only one more of the evils resulting from modern industrialism and the reign of the big store. Mr. Paine draws a dismal picture of the wretched state of the shop assistant under the living-in system, a picture which Mr. Wells, who speaks from personal experience, says is in no way overcoloured. Mr. Paine's remedies may be divided into two. Firstly, in order to get rid of the "living-in" system he strongly recommends the establishment of hostels, such as those inaugurated in Edinburgh by Professor Geddes for young graduates and students of the University (p. 60), or again for shop assistants, sempstresses, clerks, and the like, both men and women, in a Midland manufacturing town. If such a system is found to be successful in these two instances there should be no insuperable difficulty in extending it to other towns. The other, and more general, remedy is that sketched by Mr. Paine in Chapter VI., entitled "The Way Out," a plan of which Mr. Wells says, "I do not at present see any prospect of its immediate and special application to the employees of the distributing trades." Mr. Paine's idea is, if we understand him rightly, the formation of an organisation which should be capable of bringing about a sectional or universal strike. The first step towards this organisation is "the reckless love of comrades, and the development through it of a reckless note of desperation." We can quite see the point of view from which Mr. Paine writes. Every wage or fee or salary earner wishes for reward proportional to work, and also for the right to do his work without subjection to irritating control. These are the benefits for which the medical profession is at present fighting, and there is no reason why other professions, occupations, or trades should not fight for them too. Mr. Paine's little book is certainly worth reading and thinking over, not only by the employers chiefly concerned, but also by the rest of the British people, who are all "shoppers" at one time or another, and especially by members of friendly and coöperative societies.

Heredity in Relation to Evolution and Animal Breeding. By W. E. CASTLE. London and New York: Appleton. 1911. Pp. 184. Price 6*s.* net.—Dr. Castle, who is professor of zoology at Harvard, is the leading exponent in the United States of experimentation and theory along the line initiated 50 years since by Mendel. In the volume before us he sums up in a perfectly intelligible fashion the leading conclusions to which cross-breeding along Mendelian lines has led us, conclusions with which we are in this country very familiar by virtue of the striking work of Professor Bateson and others who think with him. The author addresses this little *résumé* to students and general readers, which latter class is always hopefully viewed by those of us who write books. It is to be doubted, however, whether the general reader comes up to our sanguine expectations. The present volume, for example, needs for its due understanding a very considerable appreciation of the minute histology of the sexual cells, to attain to which understanding needs much study at first hand. For the real student, on the other hand, who is not well acquainted with the department of biology interpreted by Professor Castle, this work contains an admirable survey of what he must know in the matter before proceeding to deepen and widen his outlook upon the problems of heredity, and to such it is to be heartily commended as a valuable introduction. The student can hardly stumble while following Professor Castle through the graduated series of conclusions to which the facts of crossing lead. The author begins his illustration of the Mendelian theory by a perfectly simple case of mating of a black and a white guinea-pig; these and their offspring are figured in reproduced photographs, and the whole process of crossing is displayed in a diagram so plain that it can be followed by the most slowly moving intellect. Thereafter an expansion and inevitable complication of the previously simple facts should find the reader prepared.

MISCELLANEOUS VOLUMES.

WE have received a number of small text-books, chiefly of a practical type, on chemistry, physics, chemistry and physics, analysis, elementary hygiene, and so forth, which may conveniently be reviewed together.

In *A Practical Hygiene* (Newcastle: Doig Brothers and Co., Limited. Pp. 31. Price 1*s.* 4*d.* net) Mr. J. STEPHENSON has collected an interesting series of simple experiments illustrating hygienic principles and applications. The work is quite well done and the directions are free from ambiguity. The illustrations are neat and the instructions for performing the more important tests are in the main in tabular form. Air, water, food, soil, poisons, heating, and lighting are amongst the subjects and materials which the reader is instructed to examine.——*Practical Chemistry for Medical Students*, by ALEXANDER CHARLES CUMMING, D.Sc., and J. WALKER (Edinburgh: James Thin. Pp. 171), is the title of a book prepared for the use of students attending the medical practical chemistry class in the University of Edinburgh. From a glance at the subject matter it is evident that the book will meet the requirements of students elsewhere. It is essentially a companion for the laboratory bench, and the paragraphs are eminently practical in character. As far as we have examined them the tests described are free from pitfalls. The sections on preparation of simple salts and volumetric analysis are valuable.——*Experiments in General Chemistry*, by JOSEPH H. JAMES, B.S., Ph.D., and JOHN A. SCHAEFFER, A.M., Ph.D. (New York: McGraw-Hill Book Company. Pp. 118. Price 4*s.* 6*d.*), is written chiefly for engineering students. The authors put the experimental directions in clear terms, and have chosen materials which are appropriate for an elementary practical course with engineering applications in the foreground. The sections on galvanising, water purification and clarification, common materials and rocks, industrial applications of the heat developed in intense chemical reactions, are cases in point. The book thus supplements "a course of lectures and quizzes," and so may be a useful companion to the general text-book.——The same publishers have issued *Experimental General Chemistry*, by JAMES H. RANSOM, Ph.D. (Pp. 145. Price 4*s.* 6*d.* net), which exclusively presents the experimental side of general principles. The object of the book may be gathered from a statement in the preface to the effect that the experiments set out require about 125 hours of laboratory work, but by omitting a few of those marked "optional" the work can be completed in three hours per week. This suggestion narrows the scientific value of the book.

In *A Handbook of Physics and Chemistry*, by HERBERT E. CORBIN, B.Sc.Lond., M.R.C.S. Eng., L.R.C.P. Lond., D.P.H., and ARCHIBALD STEWART, M.A. T.C.D., B.Sc. (London: J. and A. Churchill. Fourth edition. Pp. 519. Price 7*s.* 6*d.* net), we find evidence of an earnest endeavour to help the student preparing for the Conjoint Board examinations, and the syllabus of work in physics, inorganic chemistry, and organic chemistry issued by the Royal Colleges of Physicians of London and Surgeons of England has largely guided the authors as to scope. In the present edition some additions have been introduced—e.g., the polarisation of light and the

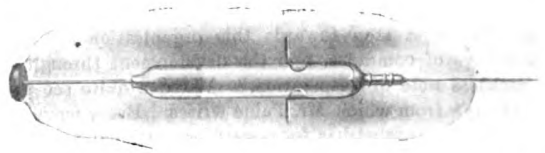
Roentgen rays, in accordance with recent advances upon the subjects, but it is disappointing to find no reference to the ionic theory of solution. In these days, when the dissociation theory has led to definite applications in medicine, we should expect to find in a comprehensive handbook a few words about it, more particularly as that book is intended for students of medicine. The illustrations are copious and well executed.——With a similar end in view, Mr. HUGH C. H. CANDY, B.A., B.Sc., F.I.C., has written his book, *A Manual of Physics* (London: Cassell and Co., Limited. Pp. 384. Price 6*s*. net). There is no attempt here to couple with physics the chemistry required by the Examining Board in the same volume. That is dealt with in *A Manual of Chemistry* by the same author, of which we have also taken a favourable view. The manual on physics bears evidence of the writer's practical acquaintance with the needs and opportunities of the medical student, for whom primarily it has been written. In spite of a fair sprinkling of mathematical formulas his account is not involved, and, of course, the student is intended to keep the manual by him when attending practical demonstrations, in which case it will aid his memory and understanding.——An eminently practical book is *Notes on Practical Physics*, by A. H. FISON, D.Sc. (London: Edward Arnold. Pp. 144. Price 3*s*. 6*d*.). The experimental directions are clear and concise, and the examples chosen form an excellent foundation for more elaborate work. His advice and suggestions are a model of sound teaching.——An interesting feature of *Elementary Experimental Chemistry*, by F. E. WESTON, B.Sc., F.C.S. (London: Longmans, Green, and Co. Pp. 140. Price 2*s*.), is the insertion of historical references to the chemical substances under experimental observation. We should like to see this plan in elementary text-books more general than it is, for there is a risk of losing sight of the early work of pioneers and of the time which has elapsed since this work was done. Mr. Weston's book contains a number of familiar experiments, and he has presented them in a wise order, so that the student begins with matters essential to the understanding of the final chapters.

The needs of those beginning their studies are again carefully studied in *Elementary Quantitative Analysis*, by F. M. OLDHAM, B.A. (London: Mills and Boon, Limited. Pp. 90. Price 1*s*. 6*d*.). The course in volumetric analysis (Part I.) and that in gravimetric analysis (Part II.) are well arranged and the directions are clearly outlined. We do not like the following expressions: "Calculate the weight of SO_4 in the barium sulphate and hence the percentage of SO_4 in the copper sulphate," or "in this way the weight of PO_4 ..... can be determined." SO_4 and PO_4 do not exist as separate entities and cannot be weighed. The method reminds us of an instruction (often found in text-books) such as the following: "Drop a small piece of K into a basin of H_2O," or "Put a small piece of P in a deflagrating spoon." The author has provided a simple working course of elementary quantitative analysis.——In *A Handbook of Organic Analysis*, by HANS THACKER CLARKE, B.Sc. Lond., A.I.C. (London: Edward Arnold. Pp. 264. Price 5*s*. net), we find a fairly wide field of organic substances covered. We quite agree with Dr. J. Norman Collie in the introduction which he has written to this book, that at the present time hardly any books exist which deal with the systematic testing of organic substances. Many there are which describe their preparation or give quantitative methods or deal with the special analysis of distinct classes of compounds, "but the book that would enable the chemist to find out qualitatively the nature of the multitudinous carbon derivatives met with in ordinary work in an organic laboratory—that book is wanted." The most valuable, as it is the biggest, section of this book is the one containing classified tables of common organic compounds. These tables will be of the greatest service to the chemist in his attempts to recognise unknown organic substances. The chapters on general matters are also good. Mr. Clarke's work is sure to be appreciated, and not the least because he has initiated an excellent movement to reduce the testing of organic substances to something like system and order.

New Inventions.

THE "HYPOSOL" AMPOULE SYRINGE.

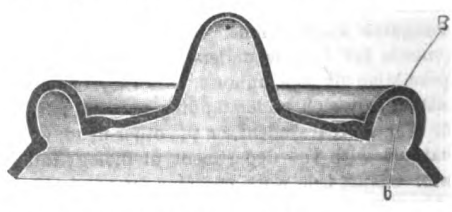
Messrs. Allen and Hanburys, of Lombard-street, London, E.C., have introduced a very ingenious form of ampoule syringe, which is intended to obviate most of the troubles and disadvantages incident to the subcutaneous injection of drugs. It is essential that the syringe, the needle, and the solution employed should be completely sterile; this is of the first importance, and usually no little time is taken up in preparing these for the injection. By the use of the ampoule syringe the greater part of this time is saved. A dose of the solution is contained in a sealed glass tube, which is drawn out at each end. In the tube at one end is a firm plug which acts as a piston. A sterilised needle is contained in a separate sealed glass tube. Before administering an



injection the two ends of the tube containing the solution are marked with a file and are then broken off. On one end of the tube which has been ground to a standard size the needle fits, and through the opening in the other passes a little rod, by means of which the piston is pushed down the tube, and in this way the injection is given with no risk of infection. Thus it is seen that the ampoule itself forms the syringe by which the solution is injected. The specimen tube sent to us worked quite satisfactorily, and the preparation occupied only a few seconds. The cost is by no means prohibitive. Most of the tubes of solution are supplied at 8*d*. each, but it must be remembered that the use of the ampoule syringe renders an ordinary syringe unnecessary, with its occasional need of repair. Vaccines prepared by the Lister Institute of Preventive Medicine can also be obtained in this form, but the cost is naturally higher.

A NIPPLE SHIELD.

THIS appliance, invented by Dr. A. Stern, is made of rubber and can be cleansed by boiling. Round the shield is a rubber margin forming an elevated circle (B) raised above the surface. In applying the shield the edges are drawn out so as to obliterate the raised portion, and as this tends to assume



its original form, on its doing so a vacuum is formed which keeps the shield tightly applied to the surface of the breast. The shield has been used by many obstetricians abroad, and is favourably reported upon. It is supplied by Messrs. A. Strauss-Collin, Bush-lane House, Cannon-street, London, E.C., and Frankfort-on-the-Maine.

THE LANCET.

LONDON: SATURDAY, MARCH 23, 1912.

The National Insurance Act: An Indictment.

DURING the past few months several books have appeared in explanation and defence of the National Insurance Act, and have been duly noticed in our columns. Some of these were obviously partisan from cover to cover, while others, accepting the Act with studied neutrality, set out to unravel its complicated provisions for the benefit of the public. These whitewashings and interpretations have, however, given small space to the real problems of "medical benefit," for their authors either failed to see, or chose not to see, that by its medical provisions a scheme of national health insurance must stand or fall. Of course, an immense amount of criticism of the medical provisions of the Act has appeared in our own columns and elsewhere in the medical and lay press during the past ten months, so that our readers are by this time familiar with the main arguments on which the medical profession relies for its objections to the Act in its present form. Nevertheless, there are many who will welcome a small volume, of which we have received advanced proofs, entitled "Can the Doctors Work the Insurance Act?"[1] They may agree with it all, they must agree with much of it, and they will have in their hands a compendium of the obvious objections which can be taken to the measure from a professional point of view.

The book is in essence a destructive criticism of the Act as it stands, disputing its present financial basis and controverting its spirit by supplying arguments in favour of payment for work done. It is intended to be a direct reply to the challenge of certain apologists of the Act who demanded information as to what is fair payment for medical services. The author declares that the profession will, and can, only work the Act upon the terms embodied in the "six cardinal points," to which he would add an essential corollary, "no *per capita* contracts whatever." He is in favour of national health insurance, provided always that the two interdependent conditions of adequate treatment for the patient and adequate payment for the medical men are guaranteed. The question he asks is not whether any medical men *will* work the Act as it stands, but "Can a doctor give adequate time and attention to his patient while earning a living for himself under the terms of the Act?" Mr. LOWRY naturally covers a good deal of ground which we have already gone over time after time, and many of his conclusions accord almost exactly with our own; but even so, he has a fresh way of putting familiar facts and well-worn arguments. He very wisely refrains from comment on the action taken by the leaders of the British Medical Association, or by their professional critics: these domestic matters he leaves altogether on one side, while throughout his vigorous pages he is careful to avoid unnecessary personalities.

He regards an income limit for those who would benefit under the Act as essential to the welfare of the profession. Only so long as the Act is limited to the struggling poor can the medical profession work it without irreparable injury to itself and to the public; he can see no necessity for extending the principle of compulsion in matters medical beyond the poor. He condemns the Act for imposing upon the medical man those very risks which the State itself has rejected, and he draws a sharp distinction between the club practice of the past and the State practice on a wholesale *per capita* system proposed by the framers of the Act. He abominates contract practice, and he maintains that such a system as that adopted for many years with success by the National Deposit Friendly Society would, if combined with an income limit, satisfy all the demands of the profession and guarantee adequate medical service without retarding the progress of scientific treatment. We do not intend to refer in further detail to Mr. LOWRY'S views. His style is rather controversial, and some of his figures and assumptions will scarcely escape challenge from those whom his irony touches; but on the whole he is on safe ground. His case, put briefly, is that the minimum demands of the medical profession are reasonable, and beneficent alike to profession and public; that these demands are not yet secured definitely; and that until they are so conceded the profession cannot work the Act in a manner consistent with its own honour or profit, or with due regard to the health of its patients. His volume supplies a closely reasoned answer to the oft-repeated question of the party politician, "Why should a profession which accepts 4*s.* with drugs reject 4*s.* 6*d.* without drugs?"

[1] Can the Doctors Work the Insurance Act? By E. W. Lowry, M.R.C.S. London: Watts and Co., 17, Johnson's-court, Fleet-street, E.C.

Surgery in the Middle Ages.

Mr. D'ARCY POWER has recently traced for us the evolution of the London surgeon[1] from the time of Master JOHN ARDERNE, "a gentleman at the most courtly and picturesque time of English history, when EDWARD III. was on the throne and the Order of the Garter had been recently established," down to Lord LISTER, who passed from among us but yesterday. The story of Master ARDERNE ("Master," because he was a master surgeon, entitled to wear the cap and gown of the guild or fraternity of surgeons of London, from which custom perhaps derives the English practice of styling all surgeons "Mr.," irrespective of degrees) is of great interest, for it shows us that even in mediæval times there were surgeons with a keen appreciation of what constitutes the basis of good surgery. Long prior to ARDERNE, indeed, in the thirteenth century, there were those who vigorously opposed the idea (prevalent even up to our own times) that pus in wounds was inevitable; who aimed at,

[1] The Evolution of the Surgeon in London. The Mid-sessional Address delivered at the Abernethian Society on Jan. 11th, 1912. St. Bartholomew's Hospital Journal, February, 1912.

and got, union by first intention; who practised drainage in suitable cases; and it is even stated induced anæsthesia by the inhalation of some volatile liquid—but here, it seems to us, we are greatly in the realms of fancy. ARDERNE himself unsparingly condemned the too prevalent practice of frequent dressing of wounds. Further, when others used caustics or ecraseurs, ARDERNE, who was by no means afraid of hæmorrhage, made clean incisions with a scalpel, stanching the bleeding with compresses, styptics, and the cautery. In those days of jousts and constant warfare, practice in the surgery of wounds must have been remarkably common, and involved, as Mr. POWER points out, not only good surgery but good nursing also. The nursing, he tells us, "was done by ladies, the wives, sisters, and sweethearts of the patients, who had been familiar from their youth upwards with the treatment of wounds, sword thrusts, and sprains, for the customs of the day gave ample opportunity of practising their skill, and all the romances of the time show them to have been excellent nurses." ARDERNE was a member of a knightly family of Saxon origin which was the first in England to adopt the Norman custom of a surname. He was born in 1307 and lived until nearly the end of the fourteenth century. He was educated at Montpellier University, and practised surgery for a while in France, but from 1349 until 1370 he practised at Newark-on-Trent. Finally, however, he yielded to the lure that even many modern provincial surgeons and physicians find so resistless, and removed to London.

Mr. POWER contents himself mainly with a picture of the ethical characteristics of ARDERNE'S times, and lays stress on the fact that ARDERNE was able to demand and obtain fees which, making due allowance for the purchasing power of money in those days as compared with our own, would make many a modern surgeon envious. In short, in the fourteenth century "the surgeon was able to hold his own with the best in the most chivalrous time and at the most courteous and extravagant court in Europe." According to another writer[2] who has made the field of mediæval medicine the subject of his own particular study, ARDERNE also used to keep case records, and was as proud of his statistics as any modern surgeon. Mr. POWER draws an outline of the attempt made in 1423 to combine the surgeons and physicians of London into one corporate body. He gives a brief account of WILLIAM CLOWES (1540–1604), a surgeon first in the army, then in the navy, who settled in London in 1569, and was appointed surgeon to St. Bartholomew's Hospital in 1575. But the wars again claimed him, and he served in the Low Countries in 1583 and in 1588 in the English fleet against the Spanish Armada. Mr. POWER quotes Dr. NORMAN MOORE'S estimate of CLOWES'S writings, that "they are the very best surgical writings of the Elizabethan age." He next refers to JOHN WOODALL (1569–1643), who inferred the efficacy of lime juice in scurvy from the happy accident of two ships' crews, one of which was smitten with scurvy, the other free from it, the conditions differing only in the fact that one had lime juice and the other had not. WOODALL published in 1617 the "Surgion's Mate," and in 1628 the "Viaticum, being the Pathway to the Surgion's Chest," text-books of surgery which long formed part of the library of every surgeon and surgeon's mate or assistant on sea or land. RICHARD WISEMAN (1621?–1676), like WOODALL, helped in the raising of surgery from a handicraft into a profession, and engaged in battle royal with quacks. Mr. POWER tells us that WISEMAN "differs from all his predecessors in his power of arguing from the particular case under discussion to a generalisation upon the principle involved." Into the stories of the later surgeons of whom Mr. POWER writes—WILLIAM CHESELDEN (1688–1752), PERCIVAL POTT (1714–1788), JOHN HUNTER (1728–1793), JOHN ABERNETHY (1764–1831), and greatest of all him whom we have so recently lost full of years and honours—Lord LISTER—we have not space to follow Mr. POWER, and, moreover, information concerning them is more generalised and more easily accessible. It would be well to study more closely the medical worthies of the Middle Ages, as far as possible in their own works and in the literature of their own times, for with their passing, it is daily becoming more and more likely, was engulfed a whole continent of potential knowledge.

[2] J. J. Walsh, M.D., Makers of Old Time Medicine.

The Nomenclature of Diseases.

SPEAKING precisely, there is no such thing as a disease. This truth has once more been forcibly enunciated by Sir CLIFFORD ALLBUTT, in an article on the Importance of Precision in Nomenclature,[1] in the following terms: "Diseases, then, are not things or 'entities,' but general concepts in our minds of various disorderly ways of function, swerving now this way, now that, in infinite variety, though on a larger view observing certain main lines of divergence and advance; so that for the convenience of thought, which is unable to grapple with things as wholes, we are enabled and are wont, not without a certain arbitrariness, to separate them into classes, and to form, for each class, a type, or mental ideal, ideals rarely realised in full, even in 'typical cases,' but which are standards to work by." The so-called names of diseases are, then, mere labels given to "a certain assemblage and succession of symptoms, normal and abnormal, recurring with fair uniformity." But in order to know what we are talking about in medicine it is clear that "we must use the names of these series respectively with the closest precision that conditions permit, although with no less clear a recognition of the arbitrary and provisional nature of our classification."

In consequence of a realisation of this truth efforts have been made from time to time to systematise the nomenclature of disease by drawing up tables of diseases. For this country the Royal College of Physicians of London has long undertaken this task. But in these days especially a progressive tendency towards internationalism is manifest, and in nothing more than in the medical sciences, for the essentials of man's structural organisation and functional activity are for the most part *humani generis totius*, and even the most marked racial or national characteristics affect little more than the surface. The need has thus made itself felt for a wider comparison of data than can be attained within the geographical boundaries of any one nation, however extensive,

[1] Universal Medical Record, vol. i., No. 1, January, 1912.

and the first essential for this international comparison is an international nomenclature. Hence arose the International List of Causes of Death, which, under the distinguished editorship of Dr. JACQUES BERTILLON, underwent its second decennial revision at Paris, July 1st to 3rd, 1909. The object of this List is to group together under the fewest possible headings the greatest possible number of more or less related causes of death. The necessity for such grouping lies in the fact that the number of possibly fatal diseases is so great that separate returns of each would be out of the question in tables showing the relation of cause of death to sex, age, locality, occupation, and other similar groupings. The numerical or hygienic importance of individual diseases, it is true, may require such tables to be made out for them individually in a few instances—e.g., bronchitis or plague—but for the most part a classification under group headings is essential.

The International List having been adopted as the basis of future registration in England and Wales, a manual[2] thereof has been recently published by the Registrar-General's office, which reflects great credit on Dr. T. H. C. STEVENSON, superintendent of statistics, by whom it has been prepared. It is intended to provide means for the compilation of mortality tables on an identical plan throughout the entire country, so that these may in future be truly comparable with each other, and also to supply the reader of the tables prepared by the Registrar-General with an opportunity of ascertaining as far as possible the precise significance of every item contained in them. With the assistance of Dr. ARTHUR NEWSHOLME an abbreviated list, while conforming to the International List, has been made identical with Skeleton Table III. issued by the Local Government Board to medical officers of health for their guidance in making their returns, and this coöperation, together with the adoption by the Registrar-General of the "Sanitary Area" as the geographical basis of tabulation, secures uniformity between the Registrar-General's statistics and the reports of the various medical officers of health. Frequent consultations with Dr. J. C. DUNLOP and Dr. NINIAN FALKINER, the statistical superintendents respectively of Scotland and Ireland, both of whom have approved the adoption of the International List, have also tended to further uniformity of the methods to be used throughout the United Kingdom. Moreover, Dr. CRESSY L. WILBUR, the distinguished chief statistician for vital statistics of the United States Census Bureau, in 1902 brought out for that bureau an American Manual, similar in scope to the one now under consideration; and the proof sheets of a new edition thereof, rendered necessary by the revision of the International List, were kindly placed at the disposal of Dr. STEVENSON. By this means a closer approximation in the practice of the two great English-speaking countries has been effected than would have been possible by the separate adhesion of both to the international system. It is to be regretted that circumstances prevented the adoption of a similar course with regard to Canada, Australia, and New Zealand; but as these countries adopted the International List before this country, the present step tends to uniformity.

A serious objection to the adoption of the International List lay in the disturbance of the continuity of English records necessarily attendant on the alteration of their basis of compilation; but this seems to have been successfully surmounted by a cross reference table showing the headings or titles used up to 1910 with numerical references to the corresponding headings or titles in the International List. Several other points of importance are dwelt on in the explanatory introduction of the manual—the rules in use in the General Register Office, England, for the selection of one from two or more jointly stated causes of death; a list of 200 indefinite or undesirable terms; an explanation of the terms "primary" and "secondary" causes of death as used in the death certificate, in which the former confusing definition of "primary" as first in order of appearance has been replaced by the more logical one of chief in importance; and the mode of registration of "transferable deaths"—i.e., deaths of persons who, having a fixed or usual residence in England or Wales, die in a district other than that in which they resided. In the adoption by the United Kingdom of the international system of mortality statistics an obvious advantage accrues through facility of comparison of English mortality with that of other countries; while Dr. STEVENSON by his adaptation of that system to this country has effected a great stride towards complete uniformity of registration throughout the United Kingdom and, indeed, all the chief English-speaking communities. It remains to be seen whether this undoubtedly great advantage and other incidental ones will be counterbalanced by the disadvantage adduced by Sir JOHN W. MOORE, and referred to in the special article on the manual in our issue of Feb. 24th (p. 528)—viz., that the transference to local affections of, for example, cerebro-spinal fever, pneumonia, epidemic diarrhœa, and puerperal fever from their rightful position under the heading of epidemic diseases places a formidable block in the path of sanitary reformers and medical officers of health.

[2] Manual of the International List of Causes of Death as Adapted for Use in England and Wales. Based on the second decennial revision by the International Commission, Paris, 1909. London: Published by His Majesty's Stationery Office. To be purchased either directly or through any bookseller from Wyman and Sons, Limited, Fetter-lane, E.C.; or Oliver and Boyd, Tweeddale-court, Edinburgh; or E. Ponsonby, Limited, 116, Grafton-street, Dublin. 1912. Pp. 128. Price 1s.

Annotations.

"Ne quid nimis."

THE STRIKE BILL.

THE measure introduced in the House of Commons on Tuesday by the Prime Minister is tentative. It is an emergency remedy, comparable (say) to opening an abscess, where the abscess is but the particular indication of some general condition, though the one that is producing the greatest disability in the patient. The keenest faculties of diagnosis are called for in those who have charge of our body politic, and the country will expect in the consultant practitioners to whom the therapeutic course is entrusted the exhaustive care and absence of party or personal prejudice which can alone make the methods of treatment trustworthy. But appearances are against the discussion of the measure with this calmness, and the existing symptoms are urgent.

THE ATTEMPT ON KING VICTOR EMANUEL'S LIFE.

THE civilised world, without a dissentient voice, has proclaimed its horror at the attempted assassination of the King of Italy and its congratulation with His Majesty and His Majesty's subjects on his providential escape. The attempt itself has nothing to distinguish it from others of the kind, all too familiar as those have been to the former generation and to the present. A degenerate creature, one of the type in whom microcephalism is a concomitant, if not, indeed, a condition precedent, of megalomania, has, it would appear, been told off by an anarchist camarilla to "save society" and to earn the martyr's crown by assassinating the head of the State; and he plays his part accordingly, with the due observance of traditional detail. He selects the place and the time of his attempt with an eye to that publicity which is supposed to make it most impressive, and he fires a succession of shots at his august victim in the full light of day and in the city's chief thoroughfare. He fails in his purpose, wounding only a member of the Royal escort, and he incurs the immediate attentions of the indignant crowd, whose wish to lynch him he well knows will be frustrated by the very authority against which he is a declared rebel. He is further gratified by the consciousness that, for the day, he is the one theme of conversation at home and abroad, and he awaits his trial with the serenity of one who knows that on that occasion the interest in him will be revived, till he receives the penalty which at worst will leave him the life he tried to take from another. Have we not here, in Antonio d'Alba, a replica of the Passanantes, the Casserios, the Angiolillis, the Luchenis, the Brescis, who have maintained for Italy in regicide the sinister priority she has long held in homicide? How she is to break that unenviable record may well employ the time and the thought of her best public men, many of whom see in it not only the outcome of idiosyncrasy, ethnological and national, but of tradition in the family and in the State. There is no doubt, as Italy's great criminologist, Baron Garofalo, has pointed out, that vendetta has a place in social life peculiar to the Latin races in general and to the Italian in particular; that it has acquired something of the force of a pious obligation, transmitted from father to son, an obligation fostered, if not justified, by absolute distrust in the integrity of the law, and stimulated by the unconstitutional promoters of Italy's "Risorgimento." Of this last concurrent cause of vendetta as an institution, it is freely admitted that the gospel of the "stiletto morale" (the moral dagger) as preached by the burning eloquence of Mazzini, has been a powerful coefficient, all the more powerful from the lofty *morale* of the man, from his patriotic ideal, from his whole life—sacrificing as he did, according to Carlyle, one of the grandest literary careers of the nineteenth century to the work of underhand, sometimes underground, plotting against the prevailing order. In his famous letter to a brother revolutionist, Daniel Manin, he glorified the knife of Timoleon, the dagger of Brutus, the arrow of Tell, the stone of Balilla, and the poniard of Palafox, in language all too effective with his compatriots, uninstructed and even illiterate as the majority of these were, investing their impulse towards lethal methods with a moral sanction that seemed to justify them on the most slender provocation. In the prisons set apart for homicides undergoing life sentences the inmates are often found to have their bodies, generally their forearms, tattooed with mottoes taken from the revolutionary vocabulary, mottoes which ring the changes on the rubric under which the anarchist societies to which the said inmates belonged march in procession on gala days: "Né Dio, né Padrone" (neither God nor Master). Such is the moral atmosphere from under which an Antonio d'Alba has emerged like all his counterparts, aye, and will continue to emerge till Italy's appalling percentage of "analfabeti" is reduced from thousands to units. In furthering the movement and the methods antagonistic to this "analfabetismo" no man has taken a more enlightened, a more devoted, a more self-sacrificing part than the true disciple of Cavour and scion of the House of Savoy who has just escaped the anarchist's vendetta, and the spontaneous, the universal outburst of indignation at the attempt and of joy at its failure attests the soundness of the national sentiment if undepraved by ignorance or unperverted by vindictive agitation. "Ha tirato contro l'Italia" (he fired against Italy) was the exclammation of her great poet, Giovanni Pascoli, on hearing of d'Alba's deed. Let us hope that Italy, from the Alps to Etna, will so respond to that sentiment as to renew with redoubled effort her educative propaganda so often postponed to that of political interests in which those of the people are forgotten, if not lost.

FEEBLE-MINDEDNESS AND THE MEASUREMENT OF THE INTELLIGENCE BY THE METHOD OF BINET AND SIMON.

WE publish on another page of this issue a valuable communication by Dr. W. C. Sullivan, medical officer in H.M. Prison Service, on a new method of estimating degrees of feeble-mindedness, devised some time ago by M. Binet and M. Simon. The method was originally intended to be applied as a gauge of intellectual development in normal children, but its wider applicability can be readily realised by perusal of Dr. Sullivan's article. Absence of any suitable and practical standard whereby to estimate degrees of intellectual impairment in children and young adults has always been a stumbling block in the way of scientific advance towards a solution of the problem of the feeble-minded. Where criteria are wanting, the question as to what constitutes feeble-mindedness remains unanswerable. It is true that the physician with experience soon learns to distinguish approximately the *arriéré* from the normal child, but individuals differ in their interpretation of what is within physiological limits and what is outside, and unanimity on the matter has never been attained. The definition of feeble-mindedness supplied by the Royal College of Physicians of London to the Royal Commission on the Control and Care of the Feeble-minded, as Dr. Sullivan justly points out, is based on empirical data and is of little value as an aid to diagnosis; indeed, this was not the intention of its originators. The tendency of scientific research is ever in the direction of reducing general expressions to their lowest terms, of testing phenomena by the application of some fundamental rule or rules to the circumstances under which they appear—in a word, of standardising data so that comparisons and contrasts may be accurately drawn. That such scientific principles should be applied to the problem of the backward child is a sign of advance. The scale devised by M. Binet and M. Simon is based on extensive observations on French school children at various ages, and may be taken to represent average attainments of average children at any given age. It is a kind of examination in general knowledge, and in it theoretical considerations are avoided as far as possible. If some such scale of intellectual attainment were utilised by preceptors, and more particularly by physicians whose interests are with backward children, it is clear that a great step would be taken towards the obtaining of those data on which alone a scientific definition of feeble-mindedness can be based. It is noteworthy that for each age five tests are arranged, so that the results can be expressed in figures, and however artificial they may appear, as

Dr. Sullivan himself states, without some accepted convention of this description the classification of a child as feeble-minded or otherwise will still depend to a certain extent on the whim of the examining physician. Dr. Sullivan has applied the method with interesting and suggestive results to the juvenile offender. An excellent opportunity for its application might be found in the case of young epileptics, who are often mischievous, restless, inattentive, spiteful, cruel. But are they really feeble-minded? The criteria of M. Binet and M. Simon might well be utilised in this connexion. There is, also, the very large class of backward children, using the term in a general sense, who do not present any sign of physical disease; anxiety for their welfare and interest in their development lead the parents to seek medical opinion on the possibility of these children being able to earn their living, and the physician would be in a better position to formulate a reasonably accurate prognosis if he had the results of systematised mental tests at hand. Of course, the chief difficulty, as Dr. Sullivan is fully aware, is that the individuals to whom these tests may be applicable are often characterised not so much by mental inferiority as mental inequality. Intelligence involves many factors. Many children possess faculties abnormally developed with others that are in abeyance. It is rare to find equality in maldevelopment on the part of all the factors that combine to form a child's mental "make-up." It is notoriously otherwise. Sometimes memory is extraordinarily acute. There used to be a patient in one of the county asylums who could enumerate all the occasions on which any given member of the institution had played tennis. We have heard of a youthful diplegic whose memory for dates was prodigious, though in other respects he was a typical *arriéré*. Dr. John Kerr, late H.M. Inspector of Schools for Scotland, has recorded in a recent volume of reminiscences the case of a child who could tell on what day of the week any day of the whole year, or of several years preceding, fell, by some mental process of which we have at present no clear conception. Cases of this kind are no doubt exceptional, but the fact remains that the physician will, as a rule, have to deal with a mind unequally developed, not uniformly inferior. Now we note that in Binet and Simon's scale not a few of the tests are pure tests of memory—e.g., in the case of the 15 year children two, if not three, are pure memory tests, out of five—and it may be questioned whether some modification in this respect may not be desirable. In this connexion, however, it is proper to note that Dr. Sullivan considers the scale should not be held to be final, and experience will soon remedy any defects which it may possess. The main argument is that some convention is necessary, and the plea which Dr. Sullivan has advanced for the adoption of the principle we cordially endorse.

AMŒBIC DYSENTERY IN GREAT BRITAIN.

THE use of the term "tropical" as a synonym for amœbic dysentery sufficiently indicates the prevalent view that this form of intestinal infection is only met with in tropical countries; nevertheless, cases have been reported from time to time as occurring in European countries, and even Great Britain. An instance of this nature is reported in the current number of the *Edinburgh Medical Journal* by Major D. G. Marshall, I.M.S., in the case of a ploughman who had never been out of Scotland. The disease had apparently existed for seven weeks before he was admitted for treatment at the Royal Infirmary, Edinburgh, the symptoms being increasing diarrhœa, with slimy stools containing "whitish specks like pieces of mutton fat." The appearance of blood in the motions had been a late occurrence, but was present after admission. Amœbæ were found on examination, but no bacilli of the "Flexner" type could be cultivated. Treatment consisted in the administration of powdered ipecacuanha in doses of from 20 to 30 grs. and rectal lavage with solution of quinine. Recovery ensued after one relapse. The origin of the infection in this case was obscure. It was suggested that the patient might have contracted the disease from a time-expired soldier from India, who lived near by, through the medium of infected drinking water, the abnormally high temperatures prevalent during the summer of 1911 having enabled the organisms to exist outside the body. The alternative possibility that the ordinary harmless amœbæ of the bowel may, under certain conditions, take on pathogenic properties cannot be entirely discarded in view of the defective state of our knowledge of the life-history and specific characters of different amœbæ; but all the evidence at present available seems to support the distinction drawn by Schaudinn between the innocuous Entamœba coli and the pathogenic Entamœba histolytica.

SHYNESS.

ALTHOUGH shyness, like egotism, may be said to arise from a pathological degree of self-consciousness, the presence of this elusive and illogical failing in an otherwise normal individual is by no means easy to explain; and if we are to judge by the way in which they ignore the subject, the psychologists find no less difficulty in its definition and classification. They are content, for the most part, to include it under the headings of "shame" and "modesty" in their analysis of the emotions, but this is by no means satisfactory. Shyness is, psychologically, much more nearly related to fear than to shame. That it does not necessarily proceed from even a sense of moral, mental, or physical deficiency, still less from the actual existence of these, is well known, and it is this fact that makes the curious predilection of the malady for certain individuals one of its most aggravating features. Speaking broadly, we may say that shyness consists essentially in a state of morbid self-consciousness of one's personal characteristics, whether physical or mental, in relation to the opinions of others. There is a certain amount of evidence to show that shyness is hereditary; but however this may be, it is largely a matter of temperament in individuals and finds a fruitful ally in a too active imagination. It is as protean as influenza in the forms in which it betrays its presence, and may exhibit itself in a thousand little gaucheries which in extreme cases may render the life of its unhappy possessor a burden to him. "Sins may be forgiven," said Nathaniel Hawthorne—himself a victim to shyness—"but shyness has no forgiveness in heaven or earth." Not infrequently the malady takes the form of excessive rudeness, with the result, it may be, that the most gentle and kind of characters is shunned at all costs as a boor. It may literally paralyse movement and speech. There has been recorded the case of an excessively shy man who, in reply to the toast of his health at a dinner given in his honour, went over his carefully prepared speech in pantomimic gesture only. This dread affliction is no respecter of persons. Charles Matthews, Garrick, and Byron were instances of men who suffered from shyness in their relations to the social life of their time, and there is a well-known author-dramatist of to-day who, it is understood, suffers tortures from the disease. Sir Isaac Newton was morbidly shy, and had an objection to the publication of his discoveries lest it should lead to an increase in the number of his acquaintances. The late Prince Consort was terribly shy. It has been remarked, and with some truth, that this extraordinary affliction is largely confined to the Teutonic races, and Georges Sand humorously attributed the Englishman's stiffness and awkwardness, especially when travelling abroad, to what she called the

"fluide Britannique," which she averred he carried about with him in self protection. As a national characteristic, however, this abnormal aloofness and shyness has its compensations. It throws a man more upon his own resources; society ceases to be a necessity to him, and this may have been one of the reasons of the Anglo-Saxon's supremacy as a pioneer in the untrodden regions of the earth. Those with a more intense social instinct have been less successful colonisers. Shyness has its compensations as a racial characteristic.

THE PEST-HOLE OF THE PACIFIC.

THE term "pest-hole of the Pacific" is applied by some American writers to Guayaquil, the main seaport of Ecuador, situated on the western coast of South America, not much more than 800 miles by sea from the Panama Canal. Another name applied to Guayaquil in recent years is "the clearing-house of the western hemisphere for cholera, yellow fever, small-pox, and bubonic plague"; and by yet others it is known as "the plague-spot of the west coast of South America." From all accounts this evil reputation is not altogether undeserved. Yellow fever, for example, has for a long time been endemic, giving rise now and again to virulent epidemics. During the last three years, according to consular reports, more than 1000 persons have been attacked in the town by this disease. Plague also for some years has been constantly appearing, and in the period 1909–11 no fewer than 2424 attacks have come under official observation. Small-pox, too, is of frequent occurrence, and severe outbreaks occur at comparatively short intervals. Though Guayaquil possesses one of the finest harbours to be met with along the whole coast of the Pacific, its sanitary circumstances leave a great deal to be desired. A large section of the poorer population are idle and apathetic, their habits are filthy, and their squalid homes are infested by rats, fleas, and other vermin, while in the neglected spaces around these dwellings the yellow fever mosquito finds many favourable breeding places in which it multiplies exceedingly. In anticipation of the opening of the Isthmian Canal at no very distant date, public opinion in the United States is becoming somewhat uneasy as to the outlook, and this has found expression of late in the lay and medical press. In THE LANCET of Feb. 10th we discussed the possibility of the Panama Canal facilitating the diffusion of exotic disease, particularly yellow fever and plague. Our contemporary, the *Journal of the American Medical Association*, in its issue of Feb. 17th, draws attention to the danger that may be expected to arise for the United States from certain South American States, more especially Ecuador, when the new commercial water-way is opened for traffic. The article is headed "What is Sauce for the Ecuador Goose is Sauce for the American Eagle," and it is pointed out that as all civilised nations now forbid the use of dum-dum bullets, submarine mines in peaceful harbours, or floating torpedoes in the track of commerce, therefore in the same way the export of yellow fever, cholera-polluted drinking-water, or disease-transmitting insects such as might be carried by ship from one port to another should similarly be forbidden by all advanced nations. On the other hand, if the right of the United States Government to intervene with the view of compelling Ecuador to place the sanitation and administration of Guayaquil on a proper footing is admitted, there would be nothing to prevent the Italian Government from insisting that the city of Pittsburg, for example, should be forced to provide uncontaminated drinking-water for the many Italian workmen employed in the steel mills of that city; or to prevent the Russian Government from putting pressure on the United States to "clean up" the tuberculosis-breeding tenements of Greater New York, in which every year thousands of Russians cough away their lives. Such procedure would be in line with the march of civilisation, but attended with many difficulties. If the United States forced Ecuador to "clean up" its one main seaport, ought not the former first of all to put its own house in order by "cleaning up" some of the backward cities in its own territory, where each year thousands of deaths occur from preventable causes? In the *New York Medical Record* of Feb. 17th attention is also directed to the subject of the danger arising from Guayaquil's unhealthy condition. Referring to a despatch which stated that yellow fever was increasing and threatening to become severely epidemic in Guayaquil, it is mentioned that General Plaza, who quelled the recent revolution in Ecuador, had been attacked by the disease. Our readers may remember that not long ago one of the assistant surgeons of the United States Public Health and Marine Hospital Service, who was attached to the Consulate-General at Guayaquil, contracted yellow fever, from which he died in a few days. The public departments of the United States concerned with the subject, as also the officials of the Panama Canal Zone, have offered their aid to the Government of Ecuador to carry out the necessary sanitary reforms at Guayaquil, but with what result we do not know. It is, perhaps, a favourable indication of advancing public opinion that Ecuador was represented at the International Sanitary Conference which assembled last November in Paris. The delegates should be in no doubt as to what is needed to satisfy international requirements, and we have no doubt that having this knowledge in their possession any courteous and diplomatic representations made by the Government of the United States would meet with a satisfactory answer. Before long we may see the unenviable notoriety of Guayaquil removed, when it will be no longer appropriate to apply to Guayaquil the opprobrious epithet of "the pest-hole of the Pacific," but Ecuador, judging from recent occurrences, is plunged in barbarism, and not much can be hoped for from the initiative of its leading men.

PRESENTATIONS TO PROFESSOR P. W. LATHAM.

THE occasion of the departure from Cambridge of Dr. P. W. Latham, who for 20 years held the chair of the Downing Professorship of Medicine, has been used by his many friends to testify their warm esteem of himself and Mrs. Latham personally, as well as their sense of the value of his public work. A meeting was held in the Combination Room of Gonville and Caius College on Thursday, March 14th, for the purpose of making a presentation to Professor Latham. The presentation, consisting of a pair of silver entrée dishes and a parchment scroll containing the subscribers' names, had been subscribed for by the medical men of Cambridge and district and other medical friends. A large meeting was presided over by Sir T. Clifford Allbutt, who in a very interesting speech spoke of Professor Latham's distinguished career since the time they were undergraduates together at Caius. Mr. N. Beverley, of Norwich, and Professor Sims Woodhead also spoke to the value of Professor Latham's work in a professional and scientific regard. On Friday evening, March 15th, at Trinity Hall, presentations were made to Professor Latham and his wife. To Mrs. Latham was presented a diamond pendant brooch, and to Professor Latham a piece of plate suitably inscribed. The Master of Trinity Hall, Mr. E. A. Beck, presided over the meeting, and the Master of Peterhouse made the presentation. In so doing he spoke of the high esteem in which Professor Latham was held as physician, of his brilliant career as a student, of his great work for Addenbrooke's Hospital, and of his services to the University, particularly as Downing Professor of Medicine for 20 years. Professor Latham will carry with him into his well-earned retirement the good wishes not only of a large

circle of private and professional friends, but of several generations of students at the School of Medicine in Cambridge, which during the term of his professoriate made such remarkable strides forward.

SUNSHINE AND RAINFALL FOR 1911.

—	Sunshine.		Rainfall.		
	Number of hours.	Difference from average.	Total fall.	Difference from average.	Number of days with rain.
		Hours.	Inches.	Inches.	*
Scarborough	1538	—	26·6	− 0·7	197
Whitby	1637	—	24·9	− 0·8	158
Skegness	1832	—	25·7	—	185
Cromer	1761	—	19·3	—	233
Yarmouth	1795	—	20·4	− 4·9	144
Lowestoft	1936	—	21·6	− 2·1	165
Felixstowe	2146	—	21·5	—	171
Clacton	1986	—	18·6	—	142
Southend-on-Sea	1901	—	19·1	− 2·2	144
Margate	1856	+316	23·6	+ 0·4	152
Ramsgate	2021	—	?	—	?
Broadstairs	2067	—	24·7	—	150
Dover	2090	—	27·3	—	166
Folkestone	2049	—	30·5	+ 2·5	156
Hastings	2147	+264	29·6	+ 0·5	164
Eastbourne	2158	+419	35·5	+ 4·6	149
Brighton	2128	+397	30·5	+ 2·9	143
Worthing	2115	—	31·7	+ 4·7	149
Southampton	1914	+249	30·4	− 0·5	154
Bournemouth	2142	—	30·4	—	160
Totland Bay	2115	—	27·4	− 0·7	152
Sandown	2067	—	32·7	—	163
Ventnor	2070	+347	29·3	− 0·3	165
Weymouth	2090	—	24·8	—	151
Torquay	2112	+381	29·6	− 4·2	161
Plymouth	1970	+320	37·6	+ 1·7	176
Falmouth	2054	+288	40·5	− 4·9	178
Jersey	2124	+197	31·7	− 2·5	189
Guernsey	2124	+218	37·1	− 0·5	193
Penzance	1933	—	40·4	—	202
Scilly	1831	+ 20	34·2	+ 0·6	186
Newquay	2012	+325	30·4	− 4·6	177
Cardiff	1868	—	37·6	− 5·1	187
Swansea	1751	—	45·2	—	164
Pembroke	1842	+200	38·6	+ 3·5	201
Aberystwyth	1797	—	38·0	—	180
Llandudno	1817	+361	30·5	− 0·3	168
Rhyl	1926	—	20·6	− 5·4	152
Hoylake	1764	—	24·0	—	155
Southport	1823	+357	30·4	− 2·5	163
Blackpool	1843	+434	31·1	− 2·7	180
Carnforth	1695	—	40·1	—	182
Douglas, Isle of Man	1873	+273	37·6	− 4·7	184
Harrogate	1533	—	27·9	− 1·6	181
Buxton	1520	—	40·2	−10·4	177
Llangammarch Wells	1492	—	50·7	—	213
Bath	1911	—	25·7	− 4·8	146
Cheltenham	1746	—	21·7	− 5·9	145
Tunbridge Wells	2030	+442	35·2	+ 5·6	161
Newcastle-on-Tyne	1189	+123	24·5	− 2·9	204
York	1411	+135	25·1	− 0·2	173
Hull	1220	—	24·4	− 1·4	193
Sheffield	1544	—	25·4	− 7·2	169
Nottingham	1532	—	19·4	− 5·4	177
Birmingham	1289	—	20·4	− 7·0	162
Manchester (City)	1284	—	31·1	− 4·1	179
Liverpool (Bidston)	1767	—	25·3	− 3·5	170
Marlborough	1670	+274	26·1	− 5·8	165
Oxford	1746	+248	20·9	− 4·1	163
Cambridge	1841	+281	19·0	− 3·7	150
Tottenham	1718	—	23·9	—	135
Hampstead	1756	—	24·0	—	164
Camden-square	1543	—	24·8	− 0·4	155
Westminster	1592	+448	22·3	− 2·1	145
Greenwich	1789	+263	23·7	− 0·4	158
Kew Observatory	1720	+253	23·1	− 0·9	158
Bunhill-row (City)	1444	+304	?	—	?
Strathpeffer	1253	+65	26·3	− 5·9	215
Fort Augustus	1046	+157	44·8	+ 0·2	233
Oban	1519	—	58·1	—	203
Glasgow	1215	+120	36·3	− 2·4	202
Aberdeen	1518	+117	27·6	− 3·2	206
Marchmont	1463	+135	31·7	− 2·7	181
Dublin (Phœnix Park)	1577	+47	23·3	− 5·2	191
Birr	1564	+214	31·0	− 2·0	200
Armagh	1510	+220	27·6	− 4·3	192
Markree Castle	1522	+265	42·3	+ 0·3	208
Valencia	1671	+214	55·6	− 0·9	220

* A day with rain is one on which at least 0·01 in. was measured.

The large excess of sunshine which was one of the chief features of a remarkable year was for the most part due to the unusually fine summer, but over a considerable portion of the kingdom nearly every month added something to the plus value. At several of the southern resorts the aggregate number of hours was more than 2100, the highest figures being 2142 hours at Bournemouth, 2146 at Felixstowe, 2147 at Hastings, and 2158 at Eastbourne. In the north-west, Blackpool recorded 434 hours more than the average, a greater excess than at Eastbourne. At Tunbridge Wells the excess amounted to 442 hours, and at Westminster as much as 448 hours. Westminster was, relatively to its average, the most sunny spot in the whole kingdom. It will be seen that the City of London received many more hours of sunshine than Birmingham, Manchester, Newcastle-on-Tyne, and Glasgow, and rather more than York; it was, however, less sunny than Nottingham and Sheffield. Fort Augustus, owing mainly to the adjacent mountains shading the valley, was the least sunny spot, while the place where smoke and dust formed the chief obstacle to the sun's rays was Newcastle. The total rainfall for the year was not everywhere less than the average, the great deficiency of the first nine months having been made up by the heavy and frequent rains of the last three. This was especially the case in the south-east of England, where Tunbridge Wells finished with the large excess of 5·6 in. The greatest deficiency was in the Midlands and some parts of East Anglia. The metropolis as a whole received rather less rain than during an average year, and a portion of it, Tottenham, had rain on fewer days than any other part of the kingdom. Although the total fall at Tottenham and Hampstead was practically identical, the latter had a measurable quantity on 29 more days than the former. Next to Tottenham the fewest rain days occurred at Clacton and Brighton, but in many other places over the southern half of England the figure was nearly as low. All the above information has been compiled from a summary of the year's weather published by the Meteorological Office.

THE POISONS SCHEDULE.

IN the exercise of its powers under the Pharmacy Acts the Council of the Pharmaceutical Society has declared in a resolution, passed at its March meeting, that certain alterations ought to be made in the Poisons Schedule—namely (*a*) that sulphonal be removed from Part II. of the Schedule to the Poisons and Pharmacy Act, 1908, and that "sulphonal, its derivatives, and the poisonous derivatives of mercaptol" be substituted therefor, and (*b*) that "diethyl-barbituric acid and other derivatives of barbituric acid, and all poisonous ureides and their derivatives," ought to be deemed poisonous within the meaning of the Pharmacy Acts, and ought to be added to Part II. of the Schedule to the Poisons and Pharmacy Act, 1908. The resolution has been submitted for the approval of the Privy Council, and if such approval be given the resolution and approval will be advertised in the *London Gazette*, and on the expiration of one month from such advertisement the articles named will be deemed to be poisons within the meaning of the Pharmacy Acts. There have been occasions on which the Privy Council has not given its approval of resolutions declaring that certain substances ought to be deemed poisons, but apparently there is nothing to lead to the supposition that its approval will be withheld on this occasion. The reasons which have decided the Privy Council to refuse to assent to the scheduling of certain substances in the past cannot be applied in the case of veronal and its derivatives, for the extent to which the trade interests in these compounds is likely to suffer cannot be considerable when compared with the greater degree of safety which will be ensured by surrounding the sale of these articles with precautionary restrictions of an elementary character. If and when the compounds indicated in the resolution are included in the Poisons Schedule, their sale by retail will be

confined to registered pharmacists, who will be required to label the packages in which they are sold with the word "poison" and the name and address of the seller. With the exception of sulphonal, any of the drugs in question may be sold, at the present time, without any restriction whatever, and in the absence of the poison label there is nothing to impress upon the mind of the purchaser that he is handling dangerous substances. In some countries it is illegal for any person to sell these and many other compounds except to persons for whom they have been prescribed by a medical practitioner, and if such a regulation could be made and enforced in our own country so much the better would it be for the public; unfortunately, however, our pharmacy laws do not provide for any restrictions of this kind, and in the meantime we must be satisfied with such protection as is afforded by the poison label and the discretion of the pharmacist. The best known compounds which will be brought into the Schedule, if the consent of the Privy Council is given to the resolution, are trional and tetronal (as poisonous derivatives of mercaptol), and veronal, malourea, malonal, and hypnogen, but the proposed "additions" are so worded as to include any like substances of the same series which may subsequently be introduced into materia medica.

JOHN BELLERS.

IT is well known that Lister belonged by birth to the Society of Friends, and this religious community has added other less splendid names to the golden book of medicine and medical reform. One of the earliest is that of John Bellers, a Gloucestershire squire and Quaker philanthropist, whose "Essay towards the Improvement of Physick, in Twelve Proposals," published in 1714, was prophetic as well as practical. It is one of some 18 works, each of which is remarkable for originality and benevolence of outlook. Taking the 12 proposals seriatim, we are at once faced by an adumbration of the hospital system of the present. Bellers, indeed, was one of the first to propose the building of many hospitals in London and elsewhere. Those in or near London were to be for the benefit of the poor, and were, if possible, to be devoted to different "capital distempers." Two were certainly to be devoted to the blind and to incurables. Registers of cases were to be kept and human dissection was to be practised. The incurables were even to furnish live material for experimentation. It is quaintly proposed that "any person may have the liberty to give medicines to such incurable patients as are willing to follow their prescriptions. And such as make any cure, should be rewarded by the State, if the patient is not able to do it. And after many repeated cures of such patients, a gratuity should be given by the Government to the owner of such medicines to make a public discovery of them. And if he desires it, to be placed as a physitian in one of the hospitals where his medicine is proper." Thus the loss of some good medicines would be prevented. It was further proposed that a public laboratory and "physical observatory" should be provided to prepare all medicines used in physic and to conduct researches for the discovery of new remedies. Bellers's "Seventh Proposal" is aptly prophetic. It is proposed that "in every Hundred of a County, and Parish of a City, there be appointed one Doctor and Chirurgeon (or more, if needful) to take care of the sick poor in them; who should visit every parish once a week, at least. And they to be paid by the overseers of the poor: and such whose illness may be chronical, especially if declared to be incurable, they should be sent to the most suitable hospital." There was to be a State control of drugs which would make against quackery. Thus, it was proposed that all "published medicines" were to be examined "with the greatest candor and exactness that possible may be." Public notice of a good medicine was to be given "that the owner may be encouraged," and bad drugs were to be publicly notified as such. Other proposals of much interest are in favour of the endowment of research by various bodies and in various forms. Finally, it is proposed that the London College of Physicians and Company of Surgeons act as practical advisory bodies to practitioners, at that time very ignorant, and that every session a Committee of the Houses of Parliament be reported to by these bodies on the state of medicine. John Bellers was not only before his own time but before our time.

THE CHEMISTRY OF THE BOOT.

THE use of materials as innocent as can possibly be is a reasonable requirement in regard to the clothes we wear, since, of course, they are not merely decorative but are essential to the well-being and comfort of the body. The boot, in particular, is trusted to protect a part of the body peculiarly sensitive to damp and cold, and quality in boots is very desirable in the interests of the general health. Yet probably there are fewer articles showing wider variations of quality than leather. Good leather is a boon, but bad leather a snare. It is, therefore, somewhat disturbing to find that a whole laboratory of chemicals may occur in the boot. Not a few people have found after a hard day's work or exercise that their socks are stained a deep yellow derived from the chromates used, amongst other things, to give a rich tone to the leather. Chromates are poisonous salts. There may be other mineral substances present which are not so easily disclosed in a domestic way, but which readily appear on analysis. Thus may be found salts of lead, tin, aluminium, iron, and even the glucose which is used to assist in the preparation of the leather from the hide, but which, perhaps intentionally, has escaped elimination. It is reasonable to suppose that all these things are used for a specific purpose, but we may be sure that good sound material does not require the presence of such foreign substances. Leather made to look good by tinkering cannot fulfil so effectively the high hygienic purpose of the genuine unadulterated article. Brown paper is an innocent article enough, but it discounts terribly the best properties of the sole of the boot, which can only be satisfactorily waterproof and protective against cold when it consists of good pure leather. The subject is one which might attract more attention at the hands of our hygienic authorities than it appears so far to have done.

EPIGASTRIC HERNIA A CAUSE OF CHRONIC DIARRHŒA.

WITHIN the past few years a good deal has been written and published in the medical journals relating to epigastric herniæ, "small protrusions, usually not larger than a walnut, situated in the linea alba between the umbilicus and the xiphoid cartilage," in the words of Dr. Farrar Cobb, of Boston, Massachusetts, writing in the *Annals of Surgery* for March. They are commoner in males than females, and usually contain omentum, less often transverse colon. Any symptoms that are present are apparently due to adhesions between the hernial sac and the parietal peritoneum or neighbouring viscera; they are usually gastric in character. Dr. Cobb, however, reports a case in which the symptoms were intestinal, and says he was unable to find any other such record in medical literature. His patient was a tanner, 69 years old, whose chief symptom was diarrhœa of seven months' duration. From six to 14 loose watery motions were discharged daily, almost without remission, during this period. Blood had not been passed. His weight had diminished by

nearly 40 pounds. He had had six months of hospital treatment, both in the wards and in the out-patient department, and taken all kinds of drugs, and submitted himself to every conceivable dietary, but nothing had effected any real improvement. Physical examination had discovered no cause for the diarrhœa until Dr. Cobb noted the presence of an irreducible epigastric hernia. In default of any alternative, this was regarded as a possible cause of the symptoms and an operation accordingly decided upon. The contents of the sac proved to be omentum firmly adherent to the peritoneum of the abdominal wall as well as to that of the sac itself, and fastening the transverse colon to the anterior abdominal wall. The sac was extirpated and the adhesions divided so as to set the colon free. The patient recovered satisfactorily from the operation and has had no more diarrhœa, so that it seems reasonable to ascribe the whole trouble to irritation of the colon by adhesions. The possibility of such a cause should therefore be borne in mind in dealing with cases of intractable intestinal flux.

COLONIAL PHARMACISTS AND RECIPROCAL AGREEMENTS.

THE Privy Council has approved a by-law made by the Council of the Pharmaceutical Society of Great Britain which empowers the society's council to enter into reciprocal agreements with colonial pharmaceutical authorities for the admission to the Register of Chemists and Druggists, without examination, of persons who, after approved courses of study and examination, have become registered in any British colony as entitled to carry on the business of a chemist and druggist in that colony. Draft regulations have been prepared by the council in consultation with representatives of Colonial Pharmacy Boards, which, it is suggested, might form the basis for reciprocal agreements. These provide that every applicant should produce evidence (1) of having passed a preliminary examination of such a character as to be a guarantee of a sound preliminary educational training; (2) of having been trained in a chemist's shop, for at least three years, in the translation and dispensing of prescriptions; and (3) of having passed, after systematic study, a qualifying examination, practically equal in scope and standard to the examination of the Pharmaceutical Society of Great Britain. The British qualifying certificate is already accepted for registration in lieu of examination in most parts of the Empire, but hitherto the Canadian Pharmacy Boards have refused to accept it on the ground that their certificates are not recognised in this country. Now that the new by-law is confirmed the Pharmaceutical Society will, for the first time, be in a position to register Canadian and other colonial pharmacists without examination.

THE NATURE AND TREATMENT OF DIABETES.

IN another column we publish an article on the Dietetic Treatment of Diabetes by Dr. P. J. Cammidge, whilst in THE LANCET of Feb. 24th and March 2nd and 9th, we published the Lettsomian lectures delivered before the Medical Society of London by Dr. Archibald E. Garrod on Glycosuria. The former, as its title indicates, deals mainly with therapeutics, whilst the latter is chiefly concerned with theoretical and pathological considerations. Dr. Garrod draws attention to many morbid conditions which bring about disturbances of the metabolism of carbohydrates, and also points out that such disturbances manifest themselves in several different ways. He also reviews the pathogeny of diabetes, and shows that in some cases the nervous system is at fault, and that in others the thyroid, the pituitary, or the pancreas is the seat of the disease, but he expresses the opinion generally held that in the majority of cases encountered in practice no indications are found of the underlying lesion upon which the metabolic derangement depends. With regard to treatment, Dr. Garrod refers to the efficacy of restriction of diet, which has ameliorated the lot and prolonged the lives of hosts of sufferers from diabetes; he admits, however, that it is essentially a symptomatic therapy based on the fact that it is the metabolic derangement which proves fatal to so many patients. He further argues that until more is known of the conditions that underlie the diabetic syndrome a more radical method of treatment cannot be determined on. Dr. Cammidge's, therefore, is a suitable supplement to Dr. Garrod's lectures, for, disregarding the questions which have not yet been definitely answered as regards the origin of the disease, he explains at length a rational method of overcoming the metabolic derangement. The basis of his method is not new—namely, that the aim of modern treatment is to balance the diet in such a way that nutrition is as perfect as possible without there being an unnecessary strain on the organs of metabolism in any direction. One point, however, particularly merits the attention of practitioners—namely, that it is not sufficient merely to give a patient lists of foods which he may take and avoid, but he must be instructed in how much of each permitted food he may, and must, take to keep up the supply of energy he requires. A study of Dr. Garrod's remarks and the suggestions as to the required dietary made by Dr. Cammidge will yield much valuable information as to the present state of knowledge in regard to the nature and treatment of diabetes.

AT the adjourned annual clinical debate of the Chelsea Clinical Society on March 19th, Professor Wilhelm Einthoven, M.D., of Leyden, read a paper on the Various Forms of the Human Electro-cardiogram and their Significance, which will be published in THE LANCET.

THE King and Queen on March 16th paid a surprise visit to Guy's Hospital, where they were received by Lord Goschen, treasurer, and Sir Cooper Perry, medical superintendent.

BRISTOL GENERAL HOSPITAL.—The eightieth annual meeting was held on March 11th at the hospital, the Lord Mayor of Bristol being in the chair, and supported by the Bishop of Bristol, Mr. Joseph Storrs Fry, president and treasurer, and Mr. Herbert M. Baker, chairman of committee. The report was on the whole satisfactory. The work done reached a record height. The in-patients numbered 2787, an excess of 136 over 1910, and the out-patients 40,578, an advance of 535. The in-patient figures have increased by 29 per cent. in five years, and the average stay of each in-patient during 1911 was 23·5 days only. It is no exaggeration to say that the hospital has been quite full, almost without respite, for several years, so that the projected extensions are urgently necessary. The ordinary receipts were £11,524, or £547 less than in 1910; this was due to a falling off in donations, which is fully accounted for by the fact that during the past year the Bristol public gave nearly £45,000 for the wing about to be built. The ordinary expenditure reached £15,320, the increase of £563 over last year being entirely accounted for by new and increased salaries. Legacies amounting to £6625 were received, the committee being able to invest about £3700. There is a balance due to the treasurer of £2052. Other points of interest in the report were an allusion to the effects of the Insurance Act, pointing out that the work of the hospital would scarcely be touched by the establishment of the new medical service, so that diminution of the subscription list is sincerely to be deprecated; the impending retirement after three years' excellent service of the senior resident, Mr. C. A. Moore, who will, however, be still connected with the hospital in an honorary capacity; and the beginning of the new wing, the site for which is being rapidly cleared. Mr. Mervyn King, vice-president, said that in 30 years' experience he had never known the work of the hospital so efficiently done as at present.

CRAWFORD WILLIAMSON LONG, THE PIONEER OF ANÆSTHESIA.

BY DUDLEY W. BUXTON, M.D., B.S., M.R.C.P.,
ANÆSTHETIST TO UNIVERSITY COLLEGE HOSPITAL AND LECTURER ON ANÆSTHETICS IN UNIVERSITY COLLEGE HOSPITAL MEDICAL SCHOOL.

(Concluded from p. 673.)

Statement of Dr. Long.

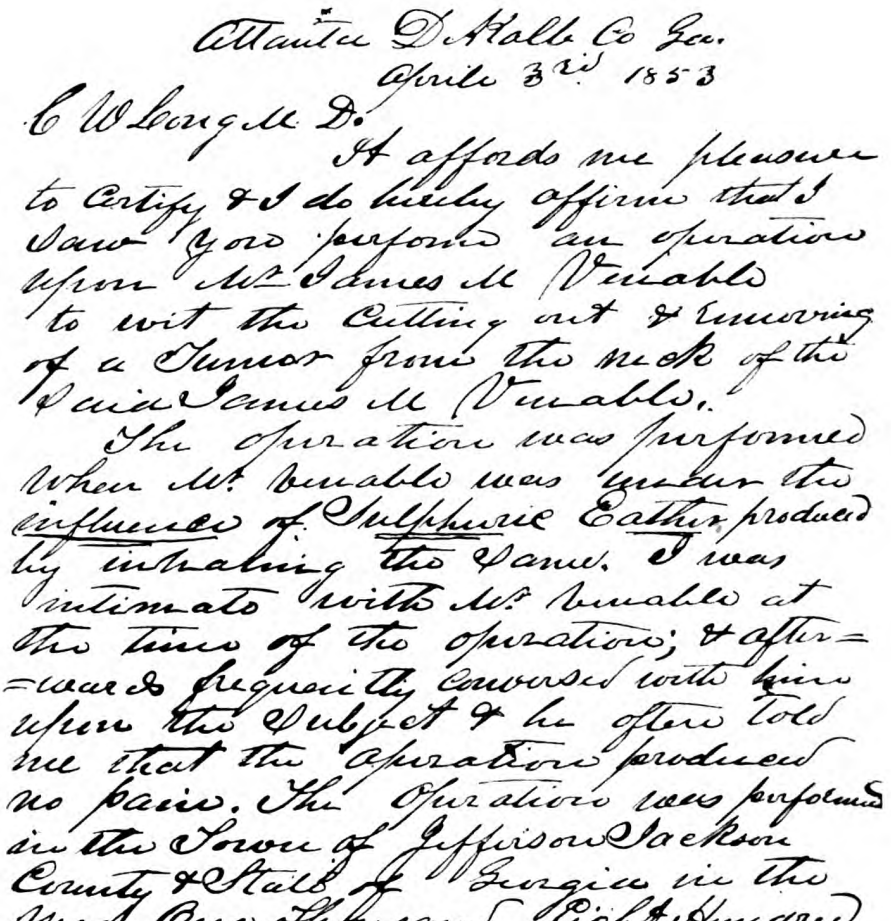
THE following statement made by Dr. C. W. Long in 1849 to the Medical Society of Georgia[1] is of great interest:—

For nearly three years the various medical journals have contained numerous articles on the employment of sulphuric ether by inhalation, for the purpose of rendering patients insensible to pain during surgical operations.

I was interrupted when I had written but a few lines and was prevented by a very laborious country practice from resuming my communication until the *Medical Examiner* for January, 1847, was received, which reached me in a few days after reading the December number. It contained several articles, giving accounts of different experiments in etherisation, in which surgical operations were performed without pain. On reading these articles I determined to wait for a few months before publishing an account of my discovery, and see whether any surgeon would present a claim to having used ether by inhalation in surgical operations prior to the time it was used by me.

A controversy soon ensued between Messrs. Jackson, Morton and Wells, in regard to who was entitled to the honour of being the discoverer of the anæsthetic powers of ether, and a considerable time elapsed before I was able to ascertain the exact period when the first operations were performed. Ascertaining this fact, through negligence I have now permitted a much longer time to elapse than I designed, or than my professional friends with whom I had consulted advised: but as no account has been published (so far as I have been able to ascertain) of the inhalation of ether being used to prevent pain in surgical operations as early as March, 1842, my friends think I would be doing myself injustice not to notify my brethren of the medical profession of my priority of the use of ether by inhalation in surgical practice.

FIG. 4.



Atlanta DeKalb Co Geo.
April 3rd 1853

C W Long M. D.

It affords me pleasure to certify & I do hereby affirm that I saw You perform an operation upon Mr James M Venable to wit the Cutting out & removing of a Tumor from the neck of the said James M Venable.

The operation was performed when Mr Venable was under the influence of Sulphuric Aether produced by inhaling the same. I was intimate with Mr Venable at the time of the operation; & afterwards frequently conversed with him upon the Subject & he often told me that the operation produced no pain. The operation was performed in the Town of Jefferson Jackson County & State of Georgia in the Year One Thousand Eight Hundred & Forty Two. Yours &c.

W. H. Thurmond.

The first notice I saw of the use of ether, or rather of Dr. Morton's "Letheon," as an anæsthetic, was in the editorial of the *Medical Examiner* for December, 1846, in which the editor gives the following extract from a paper by Dr. H. J. Bigelow, contained in the *Boston Journal*. "The preparation (Letheon) is inhaled from a small two-necked glass globe, and smells of ether, and is, we have little doubt, an ethereal solution of some narcotic substance."

Having on several occasions used ether since March, 1842, to prevent pain in surgical operations, immediately after reading this notice of "Letheon" I commenced a communication to the editor of the *Medical Examiner* for publication in that journal to notify the medical profession that sulphuric ether when inhaled would of itself render surgical operations painless, and that it had been used by me for that purpose for more than four years.

[1] This and copies of other documents were added as protocols to this original paper, but are not reproduced in the present article.

I know that my interests have suffered from not making an earlier publication, and I would not be persuaded at this late stage of the ether controversy to present my claim to being the first to use ether as an anæsthetic in surgical operations, if I were not fully satisfied of my ability to establish its justness.

Account of First Two Operations.

Then follows Dr. Long's statement setting forth the chain of reasoning which led him to employ ether as an anæsthetic. We have already quoted this. Long continues:—

The first patient to whom I administered ether in a surgical operation was Mr. James M. Venable, who then resided within two miles of Jefferson, and at present lives in Cobb County, Georgia. Mr. Venable consulted me on several occasions in regard to the propriety of removing two small tumours situated on the back of his neck, but

would postpone from time to time having the operations performed from dread of pain. At length I mentioned to him the fact of my receiving bruises while under the influence of the vapour of ether without suffering, and as I knew him to be fond of and accustomed to inhale ether, I suggested to him the probability that the operations might be performed without pain, and proposed operating on him while under its influence. He consented to have one tumour removed, and the operation was performed the same evening. The ether was given to Mr. Venable on a towel, and when fully under its influence I extirpated the tumour. It was encysted and about half an inch in diameter. The patient continued to inhale ether during the time of the operation, and when informed it was over seemed incredulous until the tumour was shown him. He gave no evidence of suffering during the operation, and assured me after it was over that he did not experience the slightest degree of pain from its performance. This operation was performed on March 30th, 1842.

The second operation I performed upon a patient etherised was on June 6th, 1842, and was on the same person for the removal of another small tumour. This operation required more time than the first, from the case of the tumour having formed adhesions to the surrounding parts. The patient was insensible to pain during the operation, until the last attachment of the cyst was separated, when he exhibited

FIG. 5.

James Venable
To Dr C. W. Long Dr

1842.		
January 28th	Sulphuric Ether	25
March 30	Ether & Extracting Tumour	2.00
May 13	Sulphuric Ether	25
June 6	Extracting Tumour	2.00

Georgia
Jackson County } I D. F. Hinton Clerk of the Superior Courts of said County do certify that the above account is a Correct Copy of an original entry made in this Book for Medical services for the year 1842.

Given under my hand & seal of office this 2nd day of March 1849.
D. F. Hinton, Clerk S.C.J.C.

signs of slight suffering, but asserted after the operation was over that the sensation of pain was so slight as scarcely to be perceived. In this operation the inhalation of ether ceased before the first incision was made. Since that time I have invariably directed patients, when practicable, to continue its inhalation during the time of the operation.

Having so long neglected presenting my claim to the discovery of the anæsthetic power of ether, for the purpose of satisfying the minds of all of its justness, I have procured, I conceive, a sufficient number of certificates to establish the claim indisputably.

In Long's paper appear certificates from some of his patients as well as from eye-witnesses of the operation. Fig. 4 is a fac-simile of one of these.

Other Operations.

My third experiment in etherisation was made on July 3rd, 1842, and was on a negro boy, the property of Mrs. S. Hemphill, who resides nine miles from Jefferson. The boy had a disease of a toe, which rendered its amputation necessary, and the operation was performed without the boy evincing the least sign of pain. I present Mrs. Hemphill's statement of the report the boy gave her of the operation on his return home, which I conceive is sufficient on this point.

These were all the surgical operations performed by me during the year 1842, upon patients etherised, no other case occurring in which I believed the inhalation of ether applicable. Since 1842 I have performed one or more surgical operations annually on patients in a state of etherisation.

The question will no doubt occur, Why did I not publish the results of my experiments in etherisation soon after they were made? I was anxious, before making my publication, to try etherisation in a sufficient number of cases to satisfy my mind that anæsthesia was produced by the ether, and was not the effect of the imagination or owing to any insusceptibility to pain in the persons experimented upon.

At the time I was experimenting with ether there were physicians, high in authority and of justly distinguished character, who were the advocates of mesmerism, and recommended the induction of the mesmeric state as adequate to prevent pain in surgical operations. Notwithstanding thus sanctioned, I was an unbeliever in the science, and of the opinion that if the mesmeric state could be produced at all it was only on those of "strong imagination and weak minds," and was to be ascribed solely to the workings of the patients' imaginations. Entertaining this opinion, I was the more particular in my experiments in etherisation.

Surgical operations are not of frequent occurrence in a country practice, and especially in the practice of a young physician, yet I was fortunate enough to meet with two cases in which I could satisfactorily test the anæsthetic powers of each. From one of these patients I removed three tumours the same day. The inhalation of ether was used only in the second operation, and was effectual in preventing pain, while the patient suffered severely from the extirpation of the other tumours. In the other case I amputated two fingers of a negro boy. The boy was etherised during one amputation and not during the other; he suffered during one operation and was insensible during the other.

I have procured the certificates of the lady from whom the tumours were removed and of her husband, who was present and witnessed the

operations. These certificates were produced in preference to those establishing other operations, because they not only show that the experiments were continued from year to year, but also show that they were conducted so as to test the power of etherisation.

After fully satisfying myself of the power of ether to produce anæsthesia, I was desirous of administering it in a severer surgical operation than any I had performed. In my practice, prior to the published account of the use of ether as an anæsthetic, I had no opportunity of experimenting with it in a capital operation, my cases being confined, with one exception, to the extirpation of small tumours and the amputation of fingers and toes.

I have stated that ether was frequently inhaled in this and some of the adjoining counties for its exhilarating effects, and although I am conscious that I do not deserve any credit for introducing its use for that purpose, yet as others through their friends have claimed to be the first to show its safety, most of the certificates I have obtained establish the fact of its frequent inhalation for its exhilarating effects. I met with R. H. Goodman, who was present the night ether was first inhaled in Jefferson, and who removed to Athens, and introduced its inhalation in that place, and presented his certificate. All the young gentlemen who were present the night I first administered ether, with one exception, are living, and their certificates can be procured, if necessary.

I have now, in a very concise manner, presented a "plain unvarnished" account of some of my experiments in etherisation, and have said nothing of the comparative methods of ether, and other anæsthetics, because that was foreign to my present subject. Had I been engaged in the practise of my profession in a city where surgical operations were performed daily, the discovery would, no doubt, have been confided to others, who would have assisted in the experiments, but occupying a different position, I acted differently, whether justifiable or not. The result of my second experiment in etherisation was such as to lead me to believe that the anæsthetic state was of such short duration that ether could only be applicable in cases in which its effects could be kept up, by constant inhalation, during the time of the performance of the operation. Under this impression, up to January, 1847, I had not used ether, but in one case, in extracting teeth, and thus deprived myself of experimenting in the only class of cases which are of frequent occurrence in a country practice.

While cautiously experimenting with ether, as cases occurred, with a view of fully testing its anæsthetic powers, and its applicability to severe as well as minor surgical operations, others more favourably situated engaged in similar experiments, and consequently the publication of etherisation did not "bide my time." This being the case, I leave it with an enlightened medical profession to say whether or not my claim to the discovery of etherisation is forfeited, by not being presented earlier, and with the decision which may be made I shall be content.

The fac-simile of the original entry in Dr. Long's account-book of his charge made to the first patient, J. M. Venable, possesses interest (see Fig 5).

Ether, 1842–1911.

The narrative given by Long of his first administration of ether to a patient in 1842, that by Morton, which is more detailed, referring to his demonstration of the effects of Letheon on a patient in the Massachusetts General Hospital (1846), and that given in great detail of the first ether operation performed in a London hospital—viz., University College Hospital—when Liston operated, reveal the fact that very little was known about anæsthetics and less about methods. In the one case a towel was employed, in the other two a primitive inhaler, consisting of an ether chamber and a series of tubes connecting it with a face-piece.

After Simpson introduced chloroform at the end of 1847, ether, at all events in this country, was neglected in favour of the newer claimant, chloroform. The perils of the latter incident to the methods adopted in its exhibition soon led to fresh attempts being made to employ ether or some mixture of it and chloroform. The committee of the Royal Medical and Chirurgical Society in its report published in 1864 extolled ether's safety, but pointed out as its inherent drawback that the induction of anæsthesia by it was too slow for convenience. Then came the rational attempts of Clover, Ormsby, and many more to remove this disability by the use of closed inhalers. No practical attempt was, however, made to study a percentage method for etherisation. The very safety of the drug became its chiefest danger, since etherists were so obsessed by the fact that ether does not lower blood pressure or cause cardiac collapse through depression, that they failed to recognise the perils incident to over-stimulation, especially in asthenic persons. The dangers of post-operative chest troubles were not existent in the pioneer days of ether because the operations performed were comparatively brief and the surgeons taught in pre-anæsthetic days prided themselves on their celerity in operating, and, indeed, were appraised by the public for this quality. To-day there is no haste, the advance of surgery has invaded the regions once immune from the knife; if ether is adopted for this wider range of operations it is necessary that methods of using it must follow on other than the traditional lines. To safeguard against excessive dosage we rely on mixed methods, such as the preliminary hypodermic injection of scopolamine, morphine, and atropine; we adopt an open mask, evaporating from an enormously expanded area provided by many folds of gauze, and so obtain a more complete nebulation of our vapour; we introduce ether directly into the blood-stream in an artificial circulating fluid of physiological saline solution by intravenous infusion, with the hope of maintaining an equable and low-grade partial saturation of the neural tissue. In every case, we must remark, the supreme difference consists in the fact that we have replaced a method of excessive dosing by one of moderation and in most instances capable of rapid variation in the strength of ether employed. We have been too overborne by *a priori* reasoning, too obedient to traditional authority. Whether our newer methods may not introduce fresh dangers we cannot as yet say; if they do it will be probably because our technique is at fault, and this must be amended. It is startling when we think of the early workers to find the modern etherist safely and easily encompass anæsthesia with ether for tongue or jaw operations. Yet such is the case. By the intratracheal insufflation method now so efficiently carried out in America we find ether conveyed into the lungs without the inconveniences formerly incident to the method of introducing ether by oral inspiration. The experience gained gives promise of even more efficient plans of using ether, of saving life, and enabling the modern surgeon to perform his tasks, often almost daunting in their complexity and difficulty, without the added anxiety of an anæsthesia either imperilling the patient's life or necessarily imperfect owing to the patient's reaction towards the drug employed. If Long's work was the first step towards what we have achieved to-day, and it was so, to him we owe this much that we do his memory great and abiding honour. But we must realise, also, that anæsthesia to-day is on its trial, it must advance and trample on tradition and rely upon experiment unless we are content to forsake the hope of founding a science, and are willing to content ourselves with a mere handicraftsman's place in the ranks of the medical profession.

I desire to express my thanks to Mrs. Long Taylor, through whose kindness I have been furnished with documentary evidence of the accuracy of the facts I have advanced about her father, Crawford W. Long; also to Dr. George Foy, of Dublin, to whose unique knowledge of this matter and collection of memorials of Crawford Long I have been most generously made welcome.

THE FINAL REPORT OF THE ROYAL COMMISSION ON VIVISECTION.

THIS long expected report has been reviewed in general terms already in our columns, but more detailed notice of it is due to our readers.

Since the Royal Commission on Vivisection was appointed on Sept. 17th, 1906, two of the Commissioners, Lord Selby (chairman) and Mr. John Tomkinson, have died. Mr. Tomkinson was not replaced, and Mr. A. J. Ram, K.C., succeeded Lord Selby in the chairmanship. The other surviving Commissioners are Colonel Lockwood, Sir William Selby Church, Sir William J. Collins, Sir John McFadyean, Sir Mackenzie Dalzell Chalmers, Dr. W. H. Gaskell, and Dr. George Wilson. The secretary, Captain Clive Bigham, retained his office throughout the inquiry.

The instructions to the Commissioners were: "To inquire into and report upon the practice of subjecting live animals to experiments, whether by vivisection or otherwise; and also to inquire into the law relating to the practice and its administration, and to report whether any, and if so what, changes are desirable." In carrying out their instructions the Commission held more than 70 meetings and examined a large number of witnesses, including representatives of the Royal Colleges of Physicians and Surgeons, and of the Royal Society, prominent exponents of medical research, representatives of antivivisection societies, and ministers of religion. They also considered papers from various official, medical, scientific, and other sources, bearing on the questions before them. They naturally consider, therefore, that the evidence before them has informed them concerning every class of opinion on the subject. The report as a whole is signed by every surviving member of the Commission; but Colonel Lockwood, Sir William Collins, and Dr. George Wilson append a memorandum of eight pages containing certain

reservations, to which Dr. Wilson adds a further memorandum of no less than 65 pages, as against the 64 pages of the report itself.

SUMMARY OF REPORT.

We cannot do better than consider the report in the same order and subdivisions as are adopted by the Commissioners. These are: 1. The administration of the Act of 1876; the powers and practice of the Home Office in relation thereto; and an examination of certain specific and general charges brought against the office in regard to its administration of the Act. 2. Questions relating to the whole subject of animal experimentation—viz., (*a*) the progress of medical science in connexion with animal experimentation, with the result of such experiments in regard to the prevention and cure of disease and the advance of physiological knowledge; (*b*) the question of pain and anæsthesia; and (*c*) the moral question as to the justifiability of such experiments. The Commissioners finally consider some of the suggestions made to them and submit certain recommendations.

The Administration of the Act.

After briefly recounting the history of legislation against cruelty to animals up to the Antivivisection Act of 1876, with a summary of the provisions of that Act and a brief comment on the status of legislation on the subject in the British Colonies and foreign countries, the Commissioners proceed to consider the administration of the Act in Great Britain in respect of the various certificates licensing places or persons for the performance of experiments; the relations of the Home Office to the Association for the Advancement of Medicine by Research; the duties of inspectors; records, reports, and returns; and the administration of the Act in Ireland. They next deal with the criticisms of certain persons, foremost among which is an indictment of 12 counts by Mr. Stephen Coleridge. Mr. Coleridge began each count with the formula: "I am here to charge the Home Office officials." It is unnecessary to detail these charges—further than to say that they all accuse the Home Office, as the authority appointed to control the working of the Act, of grave dereliction in the performance of its duties—because, after a most careful, impartial, and thorough examination of each of the 12 charges, the Commissioners state:—

These twelve charges of Mr. Coleridge's are the outcome of a ten years' investigation of the Administration of the Act by the Department, conducted by an acute and indefatigable critic supported, as he told us, with ample funds. We have indicated the points in which we think that the administration of the Home Office may be open to criticism, but we are of opinion that, on the whole, the working of the Act has been performed with a desire faithfully to carry out the objects which its framers had in view.

Miss Lind-af-Hageby's charges, as formulated in a book (written in collaboration with Miss Schartau), "The Shambles of Science," are next considered. Her most sensational charges, that of the rabbit placed in a freezing-box, and of the marmot alleged to have had its spinal cord severed, are forbearingly described as "founded on a misapprehension." In like manner the allegations of Mrs. Cook, Lieutenant-Colonel Lawrie, and Mr. J. W. Graham are conclusively shown to be mistaken. Concluding this part of their report the Commissioners state that:—

After careful consideration of the above cases we have come to the conclusion that the witnesses have either misapprehended or inaccurately described the facts of the experiments.

Then follows this clause, significant, indeed, in view of the unanimous signature of the report:—

So far as we can judge we believe that holders of licences and certificates, with rare exceptions, have endeavoured with loyalty and good faith to conform to the provisions of the law.

We desire further to state that the harrowing descriptions and illustrations of operations inflicted on animals, which are freely circulated by post, advertisement, or otherwise, are in many cases calculated to mislead the public, so far as they suggest that the animals in question were not under an anæsthetic. To represent that animals subjected to experiments in this country are wantonly tortured would, in our opinion, be absolutely false.

The Progress of Science and Results of Experiments on Animals.

The report now states that:—

The sciences of physiology and pathology on which the progress of medicine and surgery mainly depends have been built up partly by observation and partly by experiment. Inasmuch as the subject matter of physiology is living things, the question naturally arises as to whether that science is not *à priori* likely to be advanced by experiments on living animals, and it is necessary to inquire whether, in fact, the history of physiology does or does not show that it has been thus advanced.

In the course of this inquiry, after a consideration in general terms of "The Influence of Experiment on the Advance of Physiology as a Pure Science," and "Physiological Discoveries which are stated to have been of Immediate Advantage in the Practice of Medicine and Surgery," the Commissioners consider in detail the evidence submitted to them in proof of: (1) The Benefits to the Practice of Medicine Claimed as the Result of Experiments on Living Animals; and (2) the Advances in the Practice of Surgery Claimed as the Result of Experiments on Living Animals.

It is stated that "the practice of medicine depends on physiology—the science of the normal functions of the body—on pathology—the science of disease—and on pharmacology and therapeutics—the sciences of the action of drugs, &c., in health and disease. Witnesses of eminence and experience have testified to the necessity of experimentation on animals in building up these basic sciences." The value of experimentation has been shown by the establishment of accurate indications for the administration of previously known drugs—e.g., digitalis in heart disease; the introduction of new drugs (all drugs introduced within the past 40 years, with the single exception of pilocarpine, being due to animal experimentation), soporifics (chloral, sulphonal, veronal), local anæsthetics (cocaine, eucaine, stovaine), analgesics and antipyretics (antipyrine, antifebrin, phenacetin, exalgin), physostigmine, nitrites in angina pectoris, diuretics (caffeine, theobromine, diuretin), and urinary disinfectants (urotropine), and finally for the standardisation of certain drugs.

Antiseptic and aseptic surgery.—In reference to the attempts that have been made to discredit the immortal work of Lister, the report, after detailing the history of his researches, says:—

Certain witnesses have emphasised the distinction between the antiseptic and the aseptic methods, and have pointed out that the late Mr. Lawson Tait and others successfully used what is now known as the aseptic method at a time when most surgeons were using the antiseptic method, but both methods are clearly traceable to the recognition of the need of cleanliness in surgery, and neither can be dissociated from the work of Lord Lister, as founded on Pasteur's researches on the origin of putrefaction and septic disease.

Anæsthesia.—While admitting that "the discovery of anæsthetics owes nothing to experiments on animals," the report is careful to point out that "thousands of experiments have, however, been made on animals with a view to elucidate the mode of action and the methods of preventing danger from the use of anæsthetics." Reference is also made to the introduction of the subcutaneous and intraspinal injections of local anæsthetics as due to animal experiments.

Improvement in technique.—The report quotes largely in this connexion from Sir Henry Morris's evidence referring to the localisation of the motor centres in relation to brain abscess, tumours, and injuries, the removal of the gall-bladder and of the larynx, nephrectomy, and intestinal operations, and from Sir Victor Horsley's evidence referring to the last named. Reference is also made to Lord Lister's researches on ligatures, and to Sir H. Swanzy's evidence on animal experiments in relation to ophthalmic surgery.

Infectious diseases in general are next dealt with, special attention being given to the evidence of Sir John Simon; then the relations of tuberculosis, plague, cholera and typhoid, malaria, yellow fever, sleeping sickness, diphtheria, and scarlet fever, tetanus, dysentery, Mediterranean fever, and snake poison are discussed severally in detail. The relation of experimental research to the work of the public health authorities is reviewed, and finally, its bearing on the diseases of animals themselves. They point out that of recent years the value of the experimental method has been very largely recognised by the public at large as well as by various public bodies, and cite particularly—

1. The foundation of Schools of Tropical Medicine, subsidised by the Colonial Office and Colonial Governments, and the appointment of research expeditions or commissions to investigate on the spot such diseases as sleeping sickness, plague, malaria, Malta fever, &c.
2. The foundation of an Imperial Research Fund for the purpose of investigating cancer.
3. The appointment of a Royal Commission to investigate by experimental methods and otherwise that great scourge to the human race, tuberculosis.

This part of the report ends with the following conclusions:—

We have received evidence from persons eminent in physiological, pathological, and sanitary science who have testified to their belief that knowledge has been acquired in regard to the vital functions, the causes

of disease, and also in regard to means for their prevention and cure which, in their opinion, but for such experiments, could not have been acquired. We have, on the other hand, heard many witnesses, some of them having medical qualifications, who have disputed that valuable knowledge has been obtained by such experiments, maintaining that this knowledge has been erroneously attributed to such experiments, or who have contended that success has not attended the application of the knowledge to the preventive or curative treatment of disease.

Having regard to the witnesses who have appeared before us and to the evidence which we have received, there can be no doubt that the great preponderance of medical and scientific authority is against the opponents of vivisection. This is more markedly so now than was the case before the Royal Commission of 1875.

On these questions, and apart altogether from the moral and ethical questions involved in the employment of experiments on living animals for scientific purposes, we are, after full consideration, led to think: (1) That certain results, claimed from time to time to have been proved by experiments upon living animals and alleged to have been beneficial in preventing or curing disease, have, on further investigation and experience, been found to be fallacious or useless. (2) That, notwithstanding such failures, valuable knowledge has been acquired in regard to physiological processes and the causation of disease, and that useful methods for the prevention, cure, and treatment of certain diseases have resulted from experimental investigations upon living animals. (3) That, as far as we can judge, it is highly improbable that without experiments made on animals mankind would at the present time have been in possession of such knowledge. (4) That, in so far as disease has been successfully prevented or its mortality reduced, suffering has been diminished in man and in lower animals. (5) That there is ground for believing that similar methods of investigation if pursued in the future will be attended with similar results.

Pain and Anæsthesia.

In this section the Commissioners discuss the question how far immunity from pain in experiments on animals is, or can be, secured. They enter into the meaning of "incomplete anæsthesia"; they discuss "movements other than reflex movements, purposive movements, struggling, and vocal cries as occurring under anæsthesia and yet not in their [i.e., scientific witnesses'] opinion indicative of any suffering, since in the case of man these are found on recovery to have been either unconscious or unassociated with any painful recollections." They consider general anæsthetics, "pithing," the use of morphia, curare, and conclude that—

After careful consideration of the whole question of anæsthetics as applied to experimental investigations on living animals, we are led to the conclusion that by the use of one or other or of a combination of several well-known anæsthetics complete insensibility to pain can be secured.

In regard to inoculations, they consider that—

From the foregoing conclusions it is clear that although in the large majority of experiments performed under Certificate A (which dispenses with the use of anæsthetics) the animals do not appear to suffer pain, it is also clear that, even if the initial procedure in cases under that certificate may be regarded as trivial, the subsequent results of this procedure must in some cases, at any rate, be productive of great pain and much suffering.

In their recommendations they deal with the additional safeguards which in their opinion should be applied to inoculated animals as well as to animals operated on.

The Moral Question.

On the question whether, and how far, the objection taken by some that such experiments are morally wrong and unjustifiable can be sustained, the opinions (for of course this question is purely a matter of opinion, not of fact) of Mrs. Cook, Miss Arabella Kenealy, L.R.C.P., Mr. James Graham, M.A., the Rev. J. Page Hopps, Sir George Kekewich, Miss Lind-af-Hageby, the Rev. L. S. Lewis, Dr. G. H. Burford, Mr. Stephen Coleridge, Mr. John Hughes, Dr. C. R. J. A. Swan, Mr. R. J. M. Cowen, L.R.C.P. & S. Irel., Mr. A. G. Scott, Sir F. Banbury, Bart., M.P., and Mr. J. H. Levy were taken on the antivivisection side; while Lord Rayleigh, Lord Justice Fletcher Moulton, F.R.S., Sir Victor Horsley, and incidentally many of the other scientific witnesses, were heard on the side of science. It is satisfactory to find the Commission's conclusion on this point clearly and emphatically stated in the following terms:—

After full consideration we are led to the conclusion that experiments upon animals, adequately safeguarded by law, faithfully administered, are morally justifiable and should not be prohibited by legislation.

As regards the different classes of animals used for experiments and the possibility of making discrimination between them for such purpose ..... there can be ltle doubt that the general moral sense of civilised mankind would be prepared to make such differentiation. ..... The *differentia* in such case would probably be found to consist in the degree of association with, or of affinity or utility to, man.

..... Thus we think that the higher apes (anthropoid) and the dog and cat present claims for special consideration, and with these claims we deal subsequently in our report.

Recommendations.

The Commissioners next review "various practical suggestions" put before them, directed to amending the law at present governing animal experiments, and after repeating that notwithstanding adverse criticisms the Act, in their opinion, "has nevertheless been so worked as to secure a large degree of protection to animals subject to experiment, and at the same time so as not to hamper or impede research," submit recommendations which we may summarise as follows:—

1. An increase in the number of inspectors, either a chief inspector and three inspectors for Great Britain, all whole-time officials, in place of existing arrangements; or an additional number of part-time inspectors who could give such time to their duties as would be equivalent to the services of four whole-time men. In Ireland sufficient inspection could be obtained by the services of one or more part-time inspectors. They further recommend the limitation as far as possible of licences to those places which are in connexion with universities or other public authorities or institutions.
2. Entire prohibition of the use of curare, or the presence of an inspector throughout the experiment who should satisfy himself that complete anæsthesia is maintained until death.
3. They cannot recommend any alteration of the existing law in relation to experiments for attaining manual skill.
4. They conclude that the production of sera and vaccines for commercial purposes ought not to be brought within the provisions of the Act.
5. As regards the exclusion of certain classes of animals, the majority agree that if any alteration in the existing procedure be made "the special enactments now applicable to horses, asses, and mules might be extended to dogs and also to cats and anthropoid apes."
6. In "pithing" "no lesser operation than a complete destruction of the brain or decapitation should be accepted as equivalent to complete anæsthesia, and in a warm-blooded animal it should be conducted only by a licensed person, and the operation itself should be performed under an adequate anæsthetic."
7. The Commissioners, "having regard to the limited knowledge which at present obtains as to the capacity of suffering" in cold-blooded animals, cannot recommend their exemption from the Act.
8. No change in the present system with regard to licences and certificates is necessary or desirable, but no certificate should be available until the applicant has received notice that it has not been disallowed by the Secretary of State. The existing practice is endorsed of granting licences and certificates to foreigners on condition that the experiments should be done only under the superintendence of the responsible head of some particular laboratory, and the restriction should be attached to all licences and certificates granted to foreigners.
9. The following additional safeguards against pain are recommended to be attached to certificates:—(1) That an inspector should have power to order the painless destruction of any animal which, having been the subject of any experiment, shows signs of obvious suffering or considerable pain, even though the object of the experiment may not have been attained; and (2) that in all cases in which, in the opinion of the experimenter, the animal is suffering severe pain which is likely to endure, it shall be his duty to cause its painless death, even though the object of the experiment has not been attained.

The Commissioners add:—

We regret that we cannot recommend any further extension of the "pain condition." We are anxious, as far as possible, to prevent or to limit animal suffering in every case. We have recommended that there should be increased inspection, that wide powers should be given to inspectors to order the painless destruction of any animal under experiment, and that in future, although the object of the experiment has not been attained, no animal should be allowed to live in severe pain which is likely to endure. But we do not feel justified in recommending that, when the object of the experiment has not been attained, an experimenter should in all cases be required to destroy the animal immediately it exhibits signs even of severe pain, which might in some cases be only momentary.

We are satisfied by the evidence that in the great majority of the experiments under the Act the animals do not exhibit any symptoms suggestive of severe pain, and to require the immediate destruction of an animal as soon as it exhibits such symptoms might, in our opinion, put an insuperable obstacle in the way of investigating many widespread diseases (afflicting both men and domesticated animals) with respect to which further knowledge as to their nature and treatment is in the interest of humanity urgently required.

It must not be forgotten that it is in the case of diseases which are naturally painful when they attack men or animals that experiments are most likely to involve pain to animals which are experimentally infected; as examples we may instance cancer, cholera, plague, tetanus, rabies, and snake bite.

We are compelled to accept the weighty evidence given before us to the effect that the study of animals experimentally infected with some of these diseases has given us knowledge which has been instrumental in saving much mortality and suffering both in man and animals, and we believe that discoveries already made in this way justify the hope that by the same methods knowledge may yet be extended regarding the means of preventing or curing other most painful diseases which are at present scarcely or not at all amenable to treatment. And finally we feel that as long as public opinion sanctions the infliction on animals of pain, which is not only severe but of long duration, in the pursuit of sport, and in carrying out such operations as castration and spaying, or in the destruction of rabbits and of rats and other vermin by traps and painful poisons, it would be inconsistent and unreasonable to go further than we have already gone in limiting experiments which are designed to result and, according to experience, will probably result in preventing or alleviating great human or animal suffering.

THE MINORITY RESERVATION.

In a Reservation Memorandum Colonel Lockwood, Sir William Collins, and Dr. Wilson say:—

The two main points upon which we dissent from the report are firstly as to securing by Statute that undivided responsibility of the Secretary of State which was recommended by the previous Royal Commission, but which the Act of 1876 failed to establish, and secondly as to placing a statutory requirement upon an experimenter painlessly to destroy an

animal which has been experimented upon when obvious suffering has supervened. Both points lead up to and in our opinion necessitate amendments of the law.

They consider the weight of evidence opposed to the view, that only administrative modifications are required in order to give effect to the changes which experience proves to be desirable, and they doubt whether the changes recommended can be adequately carried out without legislation. They think that "the distinction between *Licences—granted by the Secretary of State* and subject to all the restrictions in the Act, chiefly for the protection of animals, and *Certificates—granted by the Scientific Authorities* which waive the aforesaid restrictions—needs to be accentuated."

They sum up the fundamental principles upon which any special legislation should be based as follows:—

1. That all investigations upon living animals of an experimental nature by way of operation, inoculation, or infection, &c., shall only be conducted under the sanction and undivided responsibility of the Secretary of State, aided by skilled advisers, and exercising control and supervision by an adequate staff of inspectors.
2. That all such investigations which, in the absence of anæsthesia would be likely to cause pain or suffering, shall be conducted under adequate anæsthetics, skilfully and humanely administered, or if the nature of the investigation render this impracticable, then that on the supervention of real or obvious suffering, the animal shall be forthwith painlessly killed.

DR. WILSON'S RESERVATION MEMORANDUM.

Dr. Wilson, in his additional reservation memorandum, regrets that permanently impaired health and seriously impaired eyesight had prevented him from rendering assistance in the preparation of the first draft of the report. While he is in general agreement with the principal findings and recommendations of the Commission he cannot fully endorse all the opinions and conclusions which it embodies without qualification or supplement. Agreeing that with very few exceptions the specific instances of infringement of the Act as investigated have not been proved, he makes the following very significant admission:—

> For I am free to confess that, like a great many others, I was somewhat ignorant of the manifold safeguards provided under the Act for the prevention of needless pain, and as a continuous and close reader of the medical journals in which many of these experiments are published, I was often horrified with the details and entertained grave doubts as to whether such severe and prolonged operations could be performed under anæsthesia so complete as to abolish all consciousness of pain.

He recommends that inasmuch as compliance with the Act cannot be ensured, but must always mainly rest on the care, ability, and honest endeavour of the licensee, every licensee should append to his report of experiments performed a certificate that the experiments "have been conducted in strict compliance with the provisions of the Act to the best of his endeavour and belief." While he agrees that the great weight of the evidence before the Commission "is overwhelmingly in favour of the conclusion that valuable results have been obtained from experiments on animals," he does so in only a very restricted sense; he has been "far more impressed with the fallacies and failures which have attended this method of research." He suggests that "experimental physiology necessitating other than cold-blooded animals for demonstration should only be taught as part of post-graduate courses to fully qualified medical men who intend to pursue physiological research work, or who desire further tuition in this direction." He contends that "physiology could be as efficiently taught by other experimental methods, such as the employment of the Röntgen rays, and the use of the sphygmograph, spygmanometer (*sic*), and other modern appliances." While denying "that aseptic surgery was in any degree due to experiments on animals, without very considerable qualification," in the next paragraph he somewhat paradoxically admits that "the doctrine of cleanliness, either in lying-in or surgical wards, did not take root till Lord Lister led the way by his antiseptic technique." He reasserts his disbelief in the utility of antitoxin in diphtheria, and states that in respect to the acute infectious diseases the germ or microbial theory of disease, as well as the vaccine and serum treatment based on that theory, appear to him to be illogical. He digresses to state that his experience has satisfied him in every outbreak of small-pox, "that prompt vaccination and revaccination of contacts and others, together with other appropriate measures, were far more important aids in stamping out the disease than removal of sufferers to hospital," but adds that it is his firm belief in vaccination that compels him to question the results of these new developments in medicine—viz., vaccine and serum-therapy. Without attempting to follow Dr. Wilson through a consideration of all the particular infectious diseases dealt with in detail in the Report, it will suffice to say that he claims each of these diseases as confirming his conclusion as to the illogicality of the germ theory of disease.

In a cogent letter to the *Times* of March 13th, Lord Cromer thus sums up the net result:—

"I do not think that any impartial person will be able to read this illuminating Report without coming to the conclusion that, broadly speaking, the supporters of vivisection have proved their case." This will be the view of the medical profession.

MEDICO-PSYCHOLOGICAL ASSOCIATION OF GREAT BRITAIN AND IRELAND.

Meeting at Long Grove Asylum.

THE quarterly meeting of this association was held on Feb. 22nd (by the courtesy of the Visiting Committee and at the invitation of Dr. C. Hubert Bond) at the London County Asylum, Long Grove, Epsom, under the presidency of Dr. WILLIAM R. DAWSON (Inspector of Lunatics in Ireland).

Dr. Bond and other members of the medical staff of the asylum conducted the party through the admission hospitals, villas, wards, administrative and medical departments of the institution, and the inspection was followed by a luncheon, at which the company included Mr. A. O. Goodrich (chairman, Asylums Committee, London County Council), Mr. A. H. Trevor (Commissioner in Lunacy), Mr. T. Hunter (chairman, Long Grove Asylum Committee), Mr. H. F. Keene (clerk of the Asylums Committee), Mr. W. Clifford Smith, M.Inst.C.E. (Asylums Engineer), Dr. F. W. Mott, (pathologist to the London Asylums), Mr. G. T. Hine, F.R.I.B.A. (architect of Long Grove), and the following past presidents of the association: Sir George Savage, Mr. H. F. Hayes Newington (treasurer of the association), Dr. P. W. Macdonald, Dr. R. Percy Smith; also Dr. Briscoe and Dr. Boycott.

Sir GEORGE SAVAGE spoke in terms of high praise concerning the equipment and administration of the asylum, and passed on to congratulate Dr. Bond on his recent appointment as one of H.M. Commissioners in Lunacy, in which new sphere he, in the name of the association, wished him every success, though with a tinge of real regret at his loss from the association and from the asylum, where he was so much esteemed.

Dr. BOND'S health having been pledged with much heartiness, he replied in a warm and grateful speech.

Mr. HAYES NEWINGTON proposed the toast of "The Visiting Committee of Long Grove Asylum," and complimented all concerned on the admirably enlightened and scientific equipment of the institution and the cordial relations subsisting between the committee and the staff.

Mr. HUNTER, in responding to the toast, said he had a great love for the work of looking after poor mentally afflicted people, and he had a splendid committee to work with. He related the history connected with the formation and equipment of the asylum, and proceeded to speak in high terms of the character and work of Dr. Bond. He was also very pleased at the cordial relations between the committee and the medical staff, and expressed their sense of loss at the departure of Dr. Bond.

Mr. GOODRICH proposed "The Medico-Psychological Association," and in doing so referred to the fact that it was established 70 years ago, and during the time which had elapsed since there had been a great deal done by it in raising the standard of the medical work in asylums as well as increasing the efficiency and status of the nurses, male and female, in asylums. He and other members of the Asylums Committee were pleased and interested to learn that certain of the universities had arranged to grant diplomas in Mental Diseases.

Dr. DAWSON, in the name of the association, replied, and expressed the thanks of members for Mr. Goodrich's remarks. In conclusion, he expressed their thanks for the hospitality with which they had been received by Dr. Bond.

Mr. TREVOR assured the gathering that Dr. Bond would receive a warm welcome from the other Commissioners in Lunacy whom he was about to join.

Papers Read.

Dr. G. F. BARHAM then read a paper entitled "Insanity with Myxœdema." He said the conception of the etiological

significance of myxœdema in reference to the mental disorder known as insanity of myxœdema had been much modified since hypothyroidism was regarded as the principal causal factor. The question to be answered was, To what extent were the symptoms of insanity occurring with myxœdema influenced during the recovery from that disease under thyroid treatment? It was uncommon to see in an asylum a case showing only the apathy and the volitional and memory defects of simple myxœdema; mostly there were insane ideas indicating a more complicated process. The mental symptoms were often examples of manic-depressive insanity or dementia præcox, or they might show dissociation or other mental processes underlying hysteria. He related a very illuminating case in a married woman, aged 34, who was the survivor of twins, and in whose family there were several instances of insanity. She was married 11 years, and in that time bore eight children. Following the third confinement she had symptoms of myxœdema, with terrifying dreams and visions. She made a fair recovery. After the four succeeding confinements there were always great prostration and debility, with severe head pains, insomnia, and loss of appetite. She also took to spirit drinking, and showed various unfounded suspicions. Physically she was in poor health, and the extremities were cold and pale, but there was no organic disease of any organ, and the reflexes were normal. The life of the patient was deeply influenced by certain incompatible emotional factors at conflict with one another. He contended that though under thyroid treatment the patient appeared to recover, so that she was able subsequently to remain outside an asylum, the abnormal mental state was an indication of the independent progress of the psychosis. He therefore concluded that the prognosis of insanity with myxœdema was not so favourable as had been frequently thought to be the case.—The subject was discussed by Dr. T. E. K. STANSFIELD, who narrated the case of a woman who married at the age of 20 and had four children. The symptoms of myxœdema were first noticed at her fourth pregnancy. Phosphorus had been given under the prescription of specialists, and a bad prognosis was given. This was in 1888, and it was decided to treat her with glycerine extract of sheep's thyroid, as suggested by Dr. George Murray, of Newcastle. The reaction was remarkably good, and she was eventually discharged recovered. Three years later she again became pregnant, and the birth was premature at the sixth month. For two years following she had mild psychasthenia, from which she recovered.—Dr. J. R. LORD said his own experience agreed with that given by Dr. Barham, and supported the prognosis he had given. In his cases there had nearly always been considerable general arterio-sclerosis, with, in some cases, alcoholism as a secondary factor. Psycho-analysis could not be entered into with every case, as it required too much time.—Dr. M. EDEN PAUL remarked that many cases of hypothyroidism, as the general practitioner was well aware of them, did not now come under the notice of the psychologist; they were treated by thyroid extract by the medical man. Those were the cases which justified the favourable opinion when so treated which was found expressed in general medical literature. The very fact that such a case came under the notice of the asylum medical officer showed that thyroid treatment had failed to remedy the condition.—Dr. BARHAM replied, stating that in the cases of the kind in that asylum he had not noticed arterio-sclerosis. There was one case now in the asylum, but her mental symptoms were much too acute to permit of any investigation.

Dr. DAVID BLAIR (Lancaster) read a paper on Forced Feeding, setting forth his experiences in keeping alive by forcible means patients, chiefly female, who uniformly resisted to their utmost every attempt at compelling feeding and the other necessary functions. In one such case the patient was kept alive for nine years, and he paid a tribute to the devotion of the nurses over such a long period.—The question was discussed by a number of members, and the comparative merits of nasal and œsophageal feeding were debated. The latter form was considered the more rapid, while the former was preferable for the most violent type of patient.

Dr. BERNARD HART read a highly interesting paper entitled "A Case of Double Personality," and, owing to the time of the meeting having expired, it was decided to adjourn the reading of the other papers which had been included in the programme.

ROYAL COLLEGE OF SURGEONS OF ENGLAND.

MEETING OF COUNCIL.

AN ordinary meeting of the Council was held on March 14th, Mr. RICKMAN J. GODLEE, the President, being in the chair.

The Secretary reported the death on Feb. 10th, 1912, at the age of 84, of the Right Hon. Lord Lister, O.M., F.R.S., past Member of the Council, and stated that the College was officially represented at the funeral service in Westminster Abbey on Feb. 16th by Mr. R. J. Godlee, President, and Mr. C. Mansell Moullin and Mr. Clinton T. Dent, Vice-Presidents.

Sir HENRY MORRIS, the Senior Member of Council, in moving a vote of condolence, referred to Lord Lister in the following words:—

"By the death of Lord Lister on Feb. 10th, 1912, surgery has lost her most brilliant student and her greatest master, England one of her most famous sons, the world one of its most illustrious citizens. He raised surgery from a dangerous and precarious practice to a precise, safe, and beneficent art, and in doing so his name became renowned throughout the civilised world. His methods have been adopted in every clime and country, and the benefits which flow from his discoveries are blessings conferred upon every race of mankind. His perspicacity, his natural insight, his fertility of resource, his power of close and discriminating observation, his philosophical reasoning, his inflexible pursuit of truth, his steadfastness of purpose, his capacity for taking pains, his unwearied patience, and his undaunted efforts to triumph over difficulties stamped him as a great example of true and scientific genius. The human sympathy which caused him to deplore the great mortality due to infective surgical disease, his solicitude to prevent suffering and premature death, his patient and unceasing labour to overcome them, and his gratification at the ultimate success of his efforts to ameliorate pain and prolong life eminently distinguished him as a great philanthropist. His gentle nature, his deep compassion, his courteous and dignified bearing, his imperturbable temper, his resolute will, his indifference to ridicule, his tolerance of hostile criticism combined to make him one of the noblest of men. His work will last for all time, its good results will continue throughout all ages, humanity will bless him for evermore, his fame will be immortal. In the fulness of years, after a glorious and satisfying career, crowned with great and various honours, having witnessed the successful completion of his work, the gentle hand of Death laid hold upon him, and Lister passed from among us. His funeral was a vast and striking testimony to the greatness and the usefulness of his life. His body perisheth, but the influence of his mind will continue everlastingly."

It was resolved that this memorial of esteem and admiration be printed, surrounded by the symbol of mourning, in the Council's minutes. It was further resolved that an inscribed tablet should be placed in a suitable and conspicuous position within the walls of the College, to serve as evidence to future generations of the honour, respect, and reverence in which the great founder of aseptic surgery was held by his contemporaries and immediate successors.

It was resolved that the following letter should be sent to Professor J. J. Lister:—

DEAR SIR,—I am directed by the President, Vice-Presidents, and Council of the Royal College of Surgeons of England to convey to you, and through you to the other members of the late Lord Lister's family, the sincere condolence of the Council and of the general body of Fellows and Members of this College on your bereavement.

They desire to express their belief that you cannot but be gratified and consoled by the numerous proofs which have been forthcoming of the universal and profound admiration for Lord Lister's pre-eminent services to surgery and mankind; and to assure you that this College, of which Lord Lister was so illustrious a Fellow, and on the Council of which he served for eight years, will ever hold his memory in the greatest honour and regard.

I am also directed to enclose you a copy of a memorial statement, and a resolution thereon, passed at the ordinary meeting of the Council held this day.

I remain, &c.,

(Sgd.) F. S. COWELL.

A report was read from Mr. C. H. Golding-Bird on the proceedings of the Central Midwives Board during the past year. The report was received and entered on the minutes, and the best thanks of the Council were given to Mr. Golding-Bird for his services as the representative of the College on that Board.

The PRESIDENT reported that Professor Arthur Keith had duly and properly delivered a course of six lectures on Certain Phases in the Evolution of Man.

The PRESIDENT reported that the committee on the National Insurance Act had held meetings at the College on Feb 6th and 26th, and a joint meeting with the committee of the Royal College of Physicians and representatives of the Society of Apothecaries at the Royal College of Physicians on March 5th, and that at this joint meeting the following resolution was adopted:—

That the Medical Faculties of the Universities of England and Wales be invited to send each a representative to join with the Committees appointed by the Royal Colleges of Physicians and Surgeons and Representatives of the Society of Apothecaries in endeavouring to safeguard the interests of their Graduates, Licentiates, Fellows, and Members in so far as they may be affected by the National Insurance Act.

The PRESIDENT reported that he and Sir Alfred Pearce Gould appeared before the Royal Commission on University Education in London on Feb. 23rd and gave their evidence on the subject of dental education in London.

A letter was read from Lady Butlin thanking the Council for the kind expression of their sympathy on the occasion of the death of her husband.

A letter was read from the Board of Education: (1) transmitting a copy of a note from the German Ambassador stating that the news of the death of Lord Lister had been received with keen regret in Germany, and conveying the condolences of the Imperial Chancellor and of the Prussian Government to the official departments interested and to the institutions of which Lord Lister was president; and (2) expressing the Board's own regret at the death of this great surgeon and man of science.

A letter was read from the executors of the late Lord Lister that under the terms of his will he had bequeathed his manuscripts and sketches to the Royal College of Surgeons of England.

The PRESIDENT stated that he had received several letters expressing appreciation of the attitude adopted by the Council in reference to the National Insurance Act.

An invitation from the President and Council of the Royal Society was read, asking the College to send a delegate to the celebrations on July 15th, 16th, and 17th of the 250th anniversary of the foundation of the Society. The President was appointed the delegate of the College.

An invitation was read from the Chancellor and Provost of Trinity College, Dublin, asking the College to send two delegates to the Bicentenary Festival of the Medical School of Trinity College on July 4th, 5th, and 6th. The President and the senior Vice-President, Mr. C. Mansell Moullin, were chosen as the delegates.

Sir John Tweedy was chosen as the representative of the College on the General Committee of Organisation of the International Historical Congress to be held in London in 1913.

A letter was read addressed to the President by Dr. Arthur Dean Bevan, of Chicago, reporting that the members of the American Medical Association were greatly pleased with Mr. Hallett's address on methods of conducting examinations for licences to practise medicine, and thanking the President for having sent him to their Conference.

VITAL STATISTICS.

HEALTH OF ENGLISH TOWNS.

IN the 94 largest English towns having an estimated population of 17,559,219 persons in the middle of this year, 9071 births and 4930 deaths were registered during the week ending March 16th. The annual rate of mortality in these towns, which had steadily declined from 21·6 to 14·4 per 1000 in the five preceding weeks, slightly rose to 14·6 per 1000 in the week under notice. During the first eleven weeks of the current quarter the mean annual death-rate in these large towns averaged 16·5 per 1000, while in London during the same period the average death-rate did not exceed 15·6 per 1000. The annual death-rates last week in the several towns ranged from 6·2 in Grimsby, 7·5 in Ilford, 8·5 in Hornsey, 8·7 in Eastbourne, and 8·8 in Gillingham, to 19·3 in Liverpool, 20·3 in Manchester, 22·7 in Swansea, 23·4 in St. Helens, and 27·6 in Salford.

The 4930 deaths from all causes were 84 in excess of the number in the previous week, and included 434 which were referred to the principal epidemic diseases, against 394 and 378 in the two preceding weeks. These 434 deaths from the principal epidemic diseases included 159 from whooping-cough, 137 from measles, 56 from infantile diarrhœal diseases, 55 from diphtheria, 14 from enteric fever, and 13 from scarlet fever, but not one from small-pox. The mean annual death-rate from these diseases last week was equal to 1·3 per 1000, against 1·2 and 1·1 in the two preceding weeks. The deaths attributed to whooping-cough, which had declined continuously from 186 to 136 in the five preceding weeks, rose to 159 last week, and caused the highest annual death-rates of 1·7 in Walsall and in Rhondda, 1·8 in Darlington, 1·9 in Coventry, in Sheffield, and in Merthyr Tydfil, and 2·3 in Edmonton. The deaths referred to measles, which had been 88, 109, and 101 in the three preceding weeks, increased to 137 last week; the highest annual death-rates from this cause were 1·8 in Nottingham, in Manchester, and in Newport (Mon.), 2·5 in York, 5·0 in Warrington, and 5·2 in Salford. The fatal cases of infantile diarrhœa, which had increased from 39 to 53 in the three previous weeks, further rose to 56 last week, and included 24 in London and its suburban districts, and 3 in Liverpool. The deaths attributed to diphtheria, which had been 44, 53, and 49 in the three preceding weeks, rose to 55 last week; 18 deaths were recorded in London and its suburban districts, 4 in Birmingham, in Liverpool, and in Leeds, and 3 in Bradford. The deaths referred to enteric fever, which had been 20 and 14 in the two preceding weeks, were again 14 last week, and included 2 in Liverpool, 2 in Barnsley, and 2 in Cardiff. The fatal cases of scarlet fever, which had increased from 17 to 25 in the three preceding weeks, declined to 13 last week, of which number 3 occurred in Liverpool, 2 in London, and 2 in Birmingham.

The number of scarlet fever patients under treatment in the Metropolitan Asylums and in the London Fever Hospital, which had declined from 1512 to 1357 during the five preceding weeks, had slightly risen to 1384 on Saturday last; 152 new cases of this disease were admitted to these hospitals during the week, against 181, 160, and 161 in the three preceding weeks. These hospitals also contained on Saturday last 1089 cases of diphtheria, 519 of whooping-cough, 219 of measles, and 61 of enteric fever, but not one of small-pox. The 1106 deaths from all causes recorded in London were 46 fewer than the number in the previous week, and were equal to an annual death-rate of 12·8 per 1000. The deaths referred to diseases of the respiratory system, which had steadily declined from 545 to 259 during the five preceding weeks, further fell to 224 last week, and were 60 below the number registered in the corresponding week of last year.

Of the 4930 deaths from all causes in the 94 large towns, 174 resulted from different forms of violence, and 382 were the subject of coroners' inquests. The causes of 41, or 0·8 per cent., of the deaths registered last week were not certified either by a registered medical practitioner or by a coroner after inquest. All the causes of death were duly certified in London and its 14 suburban districts, in Manchester, Leeds, Bristol, Bradford, Hull, Newcastle-on-Tyne, Nottingham, and in 53 other smaller towns. The 41 uncertified causes of death last week included 12 in Liverpool, 6 in Birmingham, 4 in Salford, and 2 each in Bootle, in St. Helens, and in Tynemouth.

HEALTH OF SCOTCH TOWNS.

In the 18 largest Scotch towns, having an estimated population of 2,182,400 persons in the middle of this year, 1222 births and 643 deaths were registered during the week ending March 16th. The annual rate of mortality in these towns, which had been 18·7 and 17·5 per 1000 in the two preceding weeks, further fell to 15·4 per 1000 in the week under review. During the first 11 weeks of the current quarter the mean annual rate of mortality in these towns averaged 18·6 per 1000, and was 2·1 per 1000 above the mean rate recorded during the same period in the 94 large English towns. The annual death-rates in the several Scotch towns last week ranged from 8·3 in Coatbridge, 8·6 in Paisley, and 9·1 in Kirkcaldy, to 19·3 in Leith, 20·0 in Motherwell, and 27·5 in Greenock.

The 643 deaths from all causes were 88 fewer than the number in the previous week, and included 80 which were

ANALYSIS OF SICKNESS AND MORTALITY STATISTICS IN LONDON DURING THE YEAR 1911.

(Specially compiled for THE LANCET.)

CITIES AND BOROUGHS.	Estimated population in the middle of 1911.	NOTIFIED CASES OF INFECTIOUS DISEASE.												DEATHS FROM PRINCIPAL INFECTIOUS DISEASES.‡									Deaths from all causes.	Death-rate per 1000 living.†
		Small-pox.	Scarlet fever.	Diphtheria.*	Typhus fever.	Enteric fever.	Other continued fevers.	Puerperal fever.	Erysipelas.	Cerebro-spinal meningitis.	Poliomyelitis.§	Total.	Annual rate per 1000 persons living.	Small-pox.	Measles.	Scarlet fever.	Diphtheria.*	Whooping-cough.	Enteric fever.	Diarrhœa and enteritis (under 2 years).	Total.	Annual rate per 1000 persons living.		
LONDON...	4,522,628	63	10,489	7389	1	1025	23	303	4848	101	69	24,311	5·4	9	2570	172	612	1038	144	5313	9858	2 2	67,827	15 8
West Districts.																								
Paddington	142,541	—	227	169	—	37	1	7	117	2	1	561	3·9	—	48	3	11	44	5	134	245	1·7	1897	14·2
Kensington	172,296	—	232	219	—	23	—	7	125	1	1	608	3·5	—	94	2	18	54	4	146	318	1·9	2349	14·8
Hammersmith	121,837	—	239	196	1	27	1	3	100	1	1	569	4·7	—	36	5	28	35	7	178	289	2·4	1891	16·2
Fulham	153,726	—	382	313	—	38	3	23	118	3	1	881	5·7	—	64	7	27	28	8	213	347	2·3	2203	15·1
Chelsea	66,218	—	143	83	—	7	—	5	52	—	1	291	4·4	—	30	1	5	10	—	55	101	1·5	1020	16·0
City of Westminster	159,709	1	253	145	—	30	1	6	82	3	1	522	3·3	—	23	3	14	26	4	63	133	0·8	1984	14 0
North Districts.																								
St. Marylebone	117,844	—	329	135	—	18	—	4	109	2	1	598	5·1	—	66	7	5	28	2	83	191	1·6	1772	16·1
Hampstead	85,599	—	129	151	—	14	—	6	50	—	5	355	4·2	—	14	—	17	3	2	22	58	0·7	823	10·8
St. Pancras	218,031	—	443	422	—	69	—	17	199	7	2	1159	5·3	—	108	12	37	55	7	201	420	1·9	3371	16 2
Islington	327,234	—	805	594	—	73	—	14	276	13	1	1776	5·4	—	130	21	51	70	12	365	649	2·0	4853	15·5
Stoke Newington	50,669	—	99	79	—	6	—	—	42	—	—	226	4 5	—	28	3	3	18	1	28	81	1·6	658	13·6
Hackney	222,674	3	613	316	—	48	—	16	364	7	4	1371	6·2	—	148	11	20	58	8	195	440	2·0	3185	14·9
Central Districts.																								
Holborn	49,084	—	120	85	—	11	—	2	37	—	—	255	5·2	—	15	3	3	3	3	34	61	1·2	771	17·0
Finsbury	87,639	—	179	178	—	80	—	4	223	2	—	666	7·6	—	79	6	17	24	8	142	276	3·2	1725	20·4
City of London	19,475	—	23	23	—	8	—	1	14	—	—	69	3·6	—	1	1	1	1	—	10	14	0·7	293	16 6
East Districts.																								
Shoreditch	111,284	3	240	175	—	22	—	5	160	4	3	612	5·5	—	128	6	24	32	1	222	413	3·7	2226	21·1
Bethnal Green	128,247	3	243	201	—	31	1	14	248	6	1	748	5·8	—	130	4	21	49	3	248	455	3·6	2319	18·3
Stepney	279,560	39	467	517	—	80	—	30	488	7	5	1633	5·9	7	303	8	32	49	6	468	873	3·1	4834	18·1
Poplar	162,290	11	376	284	—	63	3	11	205	6	5	964	6·0	2	225	10	44	44	14	316	655	4·0	3054	19·5
South Districts.																								
Southwark	191,595	—	480	293	—	45	2	14	316	5	3	1158	6·1	—	120	6	30	64	5	298	523	2 7	3509	19·2
Bermondsey	125,840	—	302	254	—	26	—	13	152	2	3	752	6 0	—	55	6	13	50	5	212	341	2·7	2311	18·8
Lambeth	298,032	—	764	405	—	61	—	21	246	9	9	1515	5·1	—	112	8	43	67	12	336	578	1·9	4430	15·4
Battersea...	167,765	—	354	223	—	32	—	9	162	11	4	795	4·8	—	112	4	20	36	3	222	397	2·4	2391	15·3
Wandsworth	313,389	—	866	513	—	58	5	24	204	5	5	1680	5·4	—	230	10	33	70	9	293	645	2·1	3743	12·7
Camberwell	261,407	1	634	352	—	33	2	10	254	2	5	1293	5·0	—	112	7	25	45	5	276	470	1·8	3724	14·8
Deptford	109,475	1	375	165	—	13	4	2	180	—	1	741	6·8	—	69	7	15	37	2	171	301	2·8	1706	16·4
Greenwich	95,982	—	307	318	—	10	—	9	133	1	—	778	8·1	—	41	3	16	14	3	152	229	2·4	1409	15·0
Lewisham	161,677	—	349	343	—	36	—	11	105	1	3	848	5·3	—	21	5	28	18	5	128	205	1·3	1821	11·8
Woolwich...	121,509	—	514	237	—	18	—	15	81	1	3	869	7·2	—	28	3	11	6	—	102	150	1·2	1555	13·7
Port of London	—	1	2	1	—	8	—	—	6	—	—	18	—	—	—	—	—	—	—	—	—	—	—	—

* Including membranous croup. † The death-rates are corrected for variations in sex- and age-constitution of the populations of the several boroughs, the population of England and Wales being taken as the standard. ‡ Deaths from "typhus fever" and "other continued fevers" are not now distinguished in the Registrar-General's weekly returns; these two columns are therefore omitted from the Table.
§ Poliomyelitis became notifiable in the Administrative County of London on Sept. 1st, 1911.

referred to the principal epidemic diseases, against numbers decreasing from 120 to 76 in the three preceding weeks. Of these 80 deaths, 47 resulted from measles, 8 from diphtheria, 8 from infantile diarrhœal diseases, 7 from scarlet fever, 6 from whooping-cough, and 4 from enteric fever, but not one from small-pox. These 80 deaths from the principal epidemic diseases were equal to an annual death-rate of 1·9 per 1000. or 0·6 per 1000 above that recorded in the 94 large English towns. The deaths attributed to measles, which had declined from 63 to 39 in the four preceding weeks, increased to 47 last week, and included 24 in Glasgow, 5 in Leith, 4 in Edinburgh, 4 in Kilmarnock, and 3 in Motherwell. The deaths referred to diphtheria, which had been 22, 9, and 8 in the three preceding weeks, were again 8 last week; 3 deaths were registered in Glasgow and 2 in Edinburgh. The fatal cases of diarrhœa among infants under two years of age, which had declined from 14 to 8 in the four preceding weeks, were again 8 last week, and comprised 3 in Glasgow, 3 in Dundee, and 2 in Aberdeen. The deaths attributed to scarlet fever, which had increased from 2 to 10 in the four preceding weeks, declined to 7 last week, 3 deaths were recorded in Greenock, 2 in Glasgow, and 2 in Aberdeen. The deaths referred to whooping-cough, which had decreased from 18 to 8 in the three preceding weeks, further fell to 6 last week. The 4 fatal cases of enteric fever were slightly in excess of the average in recent weeks.

The deaths referred to diseases of the respiratory system, which had steadily declined from 220 to 136 in the five preceding weeks, further fell to 98 last week, and 25 deaths were attributed to different forms of violence.

VITAL STATISTICS OF LONDON DURING 1911.

IN the accompanying table statistics of sickness and mortality in the City of London and in each of the metropolitan boroughs are summarised for the year 1911. With regard to the notified cases of infectious disease, it appears that the number of persons reported to be suffering from one or other of the ten diseases specified in the table was equal to a rate of 5·4 per 1000 of the population, estimated at 4,522,628 persons in the middle of the year; in the three preceding years the rates had been 7·4, 6·6, and 4·5 per 1000 respectively. Among the various boroughs the rates last year ranged from 3·3 in the City of Westminster, 3·5 in Kensington, 3·6 in the City of London, 3·9 in Paddington, and 4·2 in Hampstead, to 6·1 in Southwark, 6·2 in Hackney, 6·8 in Deptford, 7·2 in Woolwich, 7·6 in Finsbury, and 8·1 in Greenwich. The cases of small-pox notified during the year numbered 63, against 4, 21, and 7 in the three preceding years; of these 63 cases 39 belonged to Stepney, 11 to Poplar, 3 to Hackney, 3 to Shoreditch, and 3 to Bethnal Green. The prevalence of scarlet fever showed a slight decline, 10,489 cases being notified in 1911, against 10,509 in 1910. Among the metropolitan boroughs the greatest proportional prevalence of this disease was recorded in St. Marylebone, Hackney, Southwark, Lambeth, Wandsworth, Deptford, Greenwich, and Woolwich. The number of scarlet fever patients admitted into the Metropolitan Asylums Hospitals last year was 9631, against 20,862, 16,183, and 9889 in the three preceding years; 1878 cases remained under treatment at the end of the year, against 3498, 2329, and 1574 at the end of the three preceding years. Diphtheria showed an increased prevalence last year, 7389 cases being notified, against 5494 in the previous year; this disease was proportionally most prevalent in Fulham, St. Pancras, Finsbury, Bermondsey, Greenwich, Lewisham, and Woolwich. There were 6336 diphtheria patients admitted into the Metropolitan Asylums Hospitals last year, against 6797, 5799, and 4882 in the three preceding years; 1294 patients remained under treatment at the end of the year, against 1241, 904, and 827 at the end of the three preceding years. The prevalence of enteric fever showed a marked decline last year, only 1025 cases being notified, against 1284 in the previous year. Among the several metropolitan boroughs this disease was proportionally most prevalent in Paddington, St. Pancras, Finsbury, the City of London, Poplar, and Stepney. The number of enteric fever patients admitted into the Metropolitan Asylums Hospitals was 552, against 708, 539, and 745 in the three preceding years; 76 cases remained under treatment at the end of the year, against 147, 62, and 88 at the end of the three preceding years. The greatest proportional prevalence of erysipelas occurred in Finsbury, Shoreditch, Bethnal Green, Stepney, Poplar, Southwark, Bermondsey, Deptford, and Greenwich. The 303 cases of puerperal fever notified during the year included 30 in Stepney, 24 in Wandsworth, 23 in Fulham, 21 in Lambeth, 17 in St. Pancras, 16 in Hackney, and 15 in Woolwich. Of the 101 cases of cerebro-spinal meningitis, 13 belonged to Islington, 11 to Battersea, 9 to Lambeth, 7 to St. Pancras, 7 to Hackney, and 7 to Stepney. Poliomyelitis has been notifiable in London since Sept. 1st, 1911, and from that date until the end of the year 69 cases were notified; of these, 9 belonged to Lambeth, and 5 each to Hackney, Stepney, Poplar, Wandsworth, and Camberwell.

The mortality figures in the table relate to the deaths of persons actually belonging to the several boroughs, and are obtained by distributing the deaths in institutions among the boroughs in which the deceased persons had previously resided; the death-rates from all causes are further corrected for variations in the sex and age constitution of the populations. During last year the deaths of 67,827 persons belonging to London were registered, equal to a corrected death-rate of 15·8 per 1000, the rates in the three preceding years being 14·4, 14·6, and 13·3 per 1000. Among the several boroughs the lowest corrected death-rates last year were 10·8 in Hampstead, 11·8 in Lewisham, 12·7 in Wandsworth, 13·6 in Stoke Newington, and 13·7 in Woolwich; the highest rates were 18·3 in Bethnal Green, 18·8 in Bermondsey, 19·2 in Southwark, 19·5 in Poplar, 20·4 in Finsbury, and 21·1 in Shoreditch. The deaths from all causes included 9858 from the principal infectious diseases; of these, 9 resulted from small-pox, 2570 from measles, 172 from scarlet fever, 612 from diphtheria, 1038 from whooping-cough, 144 from enteric fever, and 5313 from diarrhœa and enteritis among children under two years of age. The death-rates from these diseases in the aggregate ranged from 0·7 in Hampstead and in the City of London, 0·8 in the City of Westminster, 1·2 in Holborn and in Woolwich, and 1·3 in Lewisham, to 3·1 in Stepney, 3·2 in Finsbury, 3·6 in Bethnal Green, 3·7 in Shoreditch, and 4·0 in Poplar. Of the 9 deaths from small-pox 7 belonged to Stepney and 2 to Poplar. The 2570 fatal cases of measles were 656 in excess of the corrected average number for the five preceding years; the greatest proportional mortality from this disease occurred in Finsbury, Shoreditch, Bethnal Green, Stepney, and Poplar. The 172 deaths from scarlet fever were 298 fewer than the corrected average number; this disease was proportionally most fatal in St. Marylebone, Islington, Stoke Newington, Holborn, Finsbury, Poplar, and Deptford. The 612 fatal cases of diphtheria were 31 below the corrected average number; the highest death-rates from this disease were recorded in Hammersmith, Hampstead, Finsbury, Shoreditch, and Poplar. The 1038 deaths from whooping-cough showed a decline of 302 from the corrected average number; this disease was proportionally most fatal in Paddington, Kensington, Stoke Newington, Bethnal Green, Southwark, Bermondsey, and Deptford. The 144 fatal cases of enteric fever were 57 below the corrected average; the greatest proportional mortality from this disease was recorded in Hammersmith, Fulham, Holborn, Finsbury, and Poplar. Diarrhœa and enteritis among children under two years of age was proportionally most fatal in Finsbury, Shoreditch, Bethnal Green, Stepney, Poplar, Southwark, Bermondsey, Deptford, and Greenwich. In conclusion, it may be stated that the aggregate mortality in London last year from the principal infectious diseases, excluding diarrhœa, was 0·5 per cent. below the average.

PHARMACISTS AND COPIES OF PRESCRIPTIONS.—

At a meeting of the Western Pharmacists of London on March 13th a discussion took place on "The Giving of Copies of Prescriptions." The general conclusion was that copies should not be given except where the pharmacist was certain that it would only be used by the patient for whom it was written, and that even for this the medical man's consent should, if possible, be obtained. In no circumstances should a copy be given in order to be passed from one person to another. Several medical men who took part in the discussion agreed that they would have printed upon their prescription forms that no copies be given. In cases where it was necessary to give a copy the meeting decided that no charge should be made for it by the pharmacist.

THE SERVICES.

ROYAL NAVY MEDICAL SERVICE.

THE following appointments have been notified:—Staff-Surgeon: A. McCloy, to the *Victory*, additional, for disposal, and to the *Research*, for surveying season.

ARMY MEDICAL SERVICE.

Surgeon-General John C. Dorman, C.M.G., is placed on retired pay (dated March 20th, 1912).

Colonel Michael W. Kerin, C.B., to be Surgeon-General, vice J. C. Dorman, C.M.G., retired (dated March 20th, 1912).

The undermentioned Lieutenant-Colonels from the Royal Army Medical Corps to be Colonels:—Charles E. Nichol, D.S.O., vice F. J. Lambkin, deceased (dated March 9th, 1912). Sinclair Westcott, C.M.G., vice M. W. Kerin, C.B. (dated March 20th, 1912).

ROYAL ARMY MEDICAL CORPS.

The undermentioned Majors to be Lieutenant-Colonels:—Samuel G. Moores, vice C. E. Nichol, D.S.O. (dated March 9th, 1912); Thomas B. Beach, vice R. J. Copeland, placed on half pay (dated March 10th, 1912); Coryndon W. R. Healey, vice S. Westcott, C.M.G. (dated March 20th, 1912).

Lieutenant-Colonel Robert J. Copeland is placed temporarily on the half-pay list on account of ill-health (dated March 10th, 1912).

Major Walter B. Fry, from the seconded list, is restored to the establishment (dated Feb. 21st, 1912).

Lieutenant-Colonel W. L. Gray has arrived in India for a tour of foreign service. Lieutenant-Colonel H. S. McGill has been appointed Senior Medical Officer on board the transport s.s. *Plassy*, which left Bombay for Southampton on March 13th. Lieutenant-Colonel J. B. Wilson has embarked for a tour of service in Jamaica. Lieutenant-Colonel F. P. Nichols has assumed medical charge at Bodmin.

Major J. Hennessy, on completion of service in India, has been appointed to the Southern Command for duty. Major P. S. O'Reilly has been transferred from the Convalescent Depôt at Wellington to the Military Hospital at Secunderabad. Major H. S. Roch has taken up duty in South Africa. Major W. A. Woodside has joined the Station Hospital at Agra for duty. Major K. B. Barnett has been transferred from Shorncliffe to Brighton. Major P. H. Falkner has arrived home for duty from Bermuda. An exchange on the roster for service abroad has been sanctioned between Major F. W. Begbie and Major E. T. F. Birrell. Major L. Way has embarked for a tour of service in India. Major L. Humphry has been granted six months' general leave of absence home from India.

Captain R. E. Humfrey and Captain W. Benson have been appointed to the Dublin District for duty. Captain E. V. Aylen has been granted eight months' general leave of absence home from India. Captain W. C. Nimmo, from the Station Hospital at Meerut, has been appointed to the Eastern Command for duty. Captain H. B. Stack has embarked for a tour of service on the West Coast of Africa. Captain C. E. Fleming, on arrival in South Africa, has been appointed a Specialist in Ophthalmology. Captain J. J. O'Keefe has been granted eight months' leave of absence home from India. Captain E. T. Potts has been appointed to the Irish Command for duty in the Dublin District. Captain P. J. Marett has been transferred from Malta to the home establishment, for duty in the Eastern Command. Captain J. F. Grant has left Allahabad for a tour of duty in Burma. Captain A. Shepherd has joined the Station Hospital at Agra. Captain W. H. S. Burney has taken up duty at Dublin. Captain G. G. Tabuteau and Captain G. W. W. Ware have been detailed for duty on board the transport s.s. *Dongola*, which left Bombay for Southampton on Feb. 23rd. Captain P. S. Lelean has been granted five months, 26 days' general leave of absence home from India. Captain J. F. Whelan has been appointed a Specialist in the Prevention of Disease and placed in charge of the Bacteriological Research Laboratory at Jhansi. Captain R. F. M. Fawcett has embarked for a tour of service in India. Captain J. D. Richmond has taken up duty at the Military Hospital, Glasgow. Captain F. C. Sampson has been ordered to join the Scottish Command. Captain D. B. McGregor has been selected for appointment as Specialist in Electrical Science and Radiography to the Seventh (Meerut) Division. Captain T. J. Potter has joined for duty in Egypt. Captain D. T. McCarthy has been directed to proceed to Burma for a tour of service at Shwebo.

Lieutenant H. S. Blackmore and Lieutenant M. Drummond have been appointed for duty in the London District. Lieutenant R. C. Priest has been placed in Medical Charge of the Duke of Cornwall's Own Middlesex Regiment at Jalpaiguri Camp, Bengal, proceeding by route march to Lebong. Lieutenant H. V. Stanley has been placed under orders for a tour of service at Gibraltar. Lieutenant G. P. Taylor has embarked for South Africa. Lieutenant F. W. M. Cunningham has joined for duty in India. Lieutenant T. H. Dickson has been transferred from Dublin to the Military Hospital at the Curragh. Lieutenant W. T. Graham has been placed under orders to join at Oxford for duty. Lieutenant J. A. Manifold has left Glasgow for a tour of duty at Bermuda. Lieutenant J. Startin has been transferred from Kirkee to the Military Hospital at Poona.

Royal Hospital, Chelsea.—Major Herbert E. Winter, Royal Army Medical Corps, to be Deputy Surgeon, *vice* Major F. Kiddle, who has resigned that appointment (dated March 1st, 1912.

INDIAN MEDICAL SERVICE.

The King has approved of the retirement of the undermentioned officers of the Indian Medical Service: Lieutenant-Colonel Ernest Wickham Hore (dated Dec. 7th, 1911). Lieutenant-Colonel Henry Thomson (dated Feb. 1st, 1912). Lieutenant-Colonel Frank Cecil Clarkson (dated March 1st, 1912). Captain Arthur Falconer Hayden (dated Jan. 23rd, 1912).

Lieutenant-Colonel A. Coleman has taken up duty as Superintendent of the District Jail at Rawalpindi, relieving Captain C. A. Gill. Lieutenant-Colonel C. E. L. Gilbert has been granted six months' extension of leave of absence from India on the recommendation of a medical board. Lieutenant-Colonel D. T. Lane has taken up duty as Superintendent of the District Jail at Sialkot.

Major A. A. Gibbs has been appointed Medical Storekeeper to the Government of India in succession to Lieutenant-Colonel P. W. O'Gorman. Major R. H. Price has arrived home on leave of absence from India. Major H. Boulton has been appointed a Specialist in the Prevention of Disease and placed in charge of the Bacteriological Research Laboratory at Nowshera. Major H. A. Smith, civil surgeon at Agra, has been granted nine months' leave of absence home from India. The services of Major H. D. Peile have been placed at the disposal of the Commander-in-Chief.

Captain R. T. Wells, plague medical officer at Rohtak, has been transferred to Jullundur. Captain W. W. Jeudwine has been granted two years' leave of absence home from India. Captain J. G. G. Swan has been appointed Civil Surgeon at Ludhiana, relieving Captain M. Corry, who has been transferred to Multan. Captain A. W. M. Harvey has been appointed a Specialist in the Prevention of Disease and placed in charge of the Bacteriological Research Laboratory at Dehra Dun. Captain E. T. Harris has been placed under orders for duty in Burma. The services of Captain T. M. Macrae have been placed permanently at the disposal of the Government of the United Provinces of Agra and Oudh. Captain J. E. Clements has been appointed Superintendent of the Central Jail at Montgomery. Captain H. Watts has taken up duty at Lahore as Plague Medical Officer. On transfer from Jullundur, Captain H. C. Keates has been appointed to officiate as Civil Surgeon at Dera Ghazi Khan. Captain F. C. Rogers has been granted 1 year and 14 days combined furlough. Captain C. C. C. Shaw has been appointed to officiate as Civil Surgeon in the Raipur District.

SPECIAL RESERVE OF OFFICERS.

Royal Army Medical Corps.

William Archibald Miller to be Lieutenant (on probation) (dated Feb. 19th, 1912).

TERRITORIAL FORCE.

Royal Army Medical Corps.

1st North Midland Field Ambulance, Royal Army Medical Corps: Lieutenant Thomas A. Barron to be Captain (dated Jan. 10th, 1912).

3rd East Lancashire Field Ambulance, Royal Army

Medical Corps: Kingsmill Williams Jones to be Lieutenant (dated Feb. 11th, 1912).

2nd Home Counties Field Ambulance, Royal Army Medical Corps: Lieutenant Herbert S. Hollis resigns his commission (dated March 20th, 1912).

2nd West Lancashire Field Ambulance, Royal Army Corps: Transport Officer and Honorary Lieutenant Alan H. Noble resigns his commission (dated March 16th, 1912).

3rd London Field Ambulance, Royal Army Medical Corps: Lieutenant David J. Graham to be Captain (dated Jan. 3rd, 1912).

5th Southern General Hospital, Royal Army Medical Corps: Maurice Dale Wood to be Captain (dated Jan. 4th, 1912).

2nd London (City of London) General Hospital, Royal Army Medical Corps: Lieutenant-Colonel and Honorary Surgeon-Colonel Clement Godson resigns his commission and is granted permission to retain his rank and to wear the prescribed uniform (dated March 13th, 1912).

1st West Riding Field Ambulance, Royal Army Medical Corps: Lieutenant Francis Darlow to be Captain (dated Jan. 24th, 1912).

Attached to Units other than Medical Units.—Captain Thomas Brushfield resigns his commission, and is granted permission to retain his rank and to wear the prescribed uniform (dated March 16th, 1912). Captain James K. Patrick resigns his commission (dated March 20th, 1912). Lieutenant William T. Storrs resigns his commission (dated March 16th, 1912). Lieutenant James A. Raeburn resigns his commission (dated March 16th, 1912). Major Thomas E. Stuart resigns his commission (dated March 6th, 1912).

For Attachment to Units other than Medical Units.—Gerald Lantsbery Bunting to be Lieutenant (dated March 6th, 1912). Lieutenant Richard Christopher Clarke, from the Territorial Force Reserve, to be Lieutenant (dated Jan. 28th, 1912). William Frothingham Roach to be Lieutenant (dated Dec. 1st, 1911). Lieutenant Haldinstein David Davis, from the 2nd London (City of London) Field Ambulance, Royal Army Medical Corps, to be Lieutenant (dated Feb. 12th, 1912).

VOLUNTEER FORCE.

Uppingham School Cadet Corps: Acting Surgeon Harry L. Smith resigns his commission (dated March 13th, 1912).

THE TERRITORIAL DECORATION.

The King has conferred the Territorial Decoration upon the undermentioned Officers of the Territorial Force, who have been duly recommended for the same under the terms of the Royal Warrant dated August 17th, 1908:—

Infantry.

5th Battalion, The Prince of Wales's Own (West Yorkshire Regiment): Surgeon-Captain Ernest Solly, Retired List.

Royal Army Medical Corps.

Major William Lloyd Edwards (deceased). Major David Durran, attached to the 5th (The Sutherland and Caithness Highland) Battalion, Seaforth Highlanders (Ross-shire Buffs, The Duke of Albany's).

JOURNAL OF THE ROYAL ARMY MEDICAL CORPS.

In the March issue of this journal the first place is given to an appreciative sketch of the life of a Royalist army surgeon by Major H. A. L. Howell. Richard Wiseman, the subject of the memoir, was serjeant-surgeon to Charles II. and a "great practical surgeon of his day," who "in a drunken age was a water-drinker, and at a time when licentiousness was rampant, we have every reason to believe, led a moral life." He was a good Latin scholar, and wrote several books, his treatises dealing with tumours, ulcers, diseases of the anus, king's evil, wounds, gunshot wounds, fractures and luxations, and lues venerea. In connexion with this last-mentioned disease it is interesting to note that a grateful patient settled an annuity upon Wiseman equal to £120 a year in modern money. Incidentally the memoir contains a story illustrating the power of the imagination. Wiseman had used a red ribbon as a tourniquet previous to cutting off the hand of a soldier. After the surgeon had left the patient he was hurriedly recalled because the patient was in great pain owing to the pressure, as he thought, of the red ribbon. "I was at first surprised to think I should leave the Ligature upon his Arm," said Wiseman, "that being a sure way to bring a Mortification upon the Part." After being shown the ribbon which was now in the operator's pocket, the patient "laught and was from that time in ease." A reproduction of the portrait of Wiseman in oils which is in the Royal College of Surgeons, London, forms a frontispiece to the article. Major G. E. F. Stammers and Captain G. I. Davys, I.M.S., deal with the subject of Apyrexial Malaria Carriers, and Major E. W. W. Cochrane contributes a paper on A Small Epidemic of Typhoid Fever in Connexion with Specifically Infected Flies. A short article on the Effect of Physical Training on the Pulse-rate, by Captain J. A. Black, will be read with attention, as will also the first part of Practical Hints on Marching and Health on Active Service, intended for the instruction of young soldiers, written by an ex-soldier, G. Fahey, late 88th Connaught Rangers. This paper is based on an experience of 19 years in the ranks.

THE MILITARY SURGEON.

The first 35 pages of the February number are devoted to a detailed and appreciative account of the magnificent International Exhibition of Hygiene at Dresden, by Medical Director (Surgeon-General) H. G. Beyer, U.S. Navy, United States delegate to the exposition. A special word of praise is given to the completeness of the exhibit in the British Section, of whose success it is said, "the British people may well feel proud." The untiring energy of the secretary, Mr. H. W. Armit, and his daily demonstrations are warmly praised. An exhaustive paper, a Study of the Foot and Footwear, by Captain F. W. Weed, Medical Corps, U.S. Army, discusses the evolution of the foot as seen, first in the Simiadæ, then in less civilised, and in the more civilised races of men. It traces the development of sandals, shoes, and boots to the present day, details the principles and practice of fitting boots to feet, and insists on the damage done by stockings that are too tight. This paper should be read by all young medical officers. The American army finds that salvarsan alone is sufficient for the treatment of primary and tertiary lesions, but mercury must also be used in secondary cases to assist in the final cure.

CHANGE OF DESIGNATION IN THE ADMINISTRATIVE RANKS OF THE ROYAL ARMY MEDICAL CORPS.

It is announced that the titles of Principal Medical Officer, Administrative Medical Officer, and Staff Officer to the Principal Medical Officer of a Command are about to be discontinued. In future these officers are to be called "Deputy Director of Medical Services," "Assistant Director of Medical Services," and "Deputy Assistant Director of Medical Services" respectively. This change in nomenclature brings the medical services of the army into line with those of supplies and transport and other departments.

A DRAWING-ROOM meeting on behalf of the Ragged School Union and its work among poor and crippled children will be held on Tuesday next, March 26th, at 3.30 P.M., at 10, Queen Anne-street, Cavendish-square, W., with the permission of Sir Alfred and Lady Pearce Gould. The Rev. Prebendary Webb-Peploe will preside.

UNIVERSITY OF LIVERPOOL.—The Council has decided, on the recommendation of the Medical Faculty, to found a chair of bacteriology at the University. Negotiations have been in progress for some time in regard to the bacteriological work of the city previously carried on by the late Sir Rubert Boyce, professor of pathology at the University. The new professor will hold the dual post of professor of bacteriology and city bacteriologist. The University will place at his disposal, in his capacity of city bacteriologist, accommodation at the University. The appointments to the two posts will depend upon each other, the resignation of one leading to the resignation of the other. The subject of bacteriology has so advanced in importance of late years that it has become a necessity for the University to secure the services of a trained bacteriologist. The present arrangement will be an advantage both to the city and to the University, and the completion of the negotiations is a further evidence of the readiness with which the councils of the two bodies work together to their mutual advantage. The two chairs—the vacant one of pathology and the new chair of bacteriology—will be filled up without further delay, and next session it is hoped the newly-appointed professors will enter upon their respective duties.

Correspondence.

"Audi alteram partem."

MUSEUM OF THE ROYAL COLLEGE OF SURGEONS OF ENGLAND.

To the Editor of THE LANCET.

SIR,—With your kind permission I should like to draw the attention of the readers of THE LANCET to certain improvements which are being effected in connexion with the Museum of the Royal College of Surgeons of England. The following letter, which is self-explanatory, is being issued by the President of the College to ophthalmic surgeons throughout the country. It is possible, however, that medical men who are not specially in ophthalmic practice may be able to help with the object mentioned in the letter.

Royal College of Surgeons of England, Lincoln's Inn-fields, London, W.C., 25th March, 1912.

DEAR SIR,—The Council of the Royal College of Surgeons of England have lately resolved to revise completely that part of the Museum which illustrates Injuries and Diseases of the Eye, and has entrusted the revision to Mr. Stephen Mayou, F.R.C.S.

The methods of preservation and mounting of specimens have improved so much since the present collection of eye preparations was made by Mr. Charles Bader in 1860–1862 that it will be necessary to replace the majority of existing specimens.

As President of the College may I ask you to assist the Council by presenting to the Museum such specimens as may help to give a complete representation of the Pathology of the Eye and of the various structures accessory to the function of vision?

Preparations should be forwarded to the Conservator of the Museum, who will acknowledge their receipt and report on them if desired.

I am, Dear Sir, Yours faithfully,
(Signed) R. J. GODLEE, President.

The Council of the College has also resolved to establish a Medico-legal Collection in connexion with the Museum, there being at the present time no standard collection in England. The scheme of classification which is to be adopted for this collection is that elaborated by Sir Henry Littlejohn and Professor Harvey Littlejohn in connexion with the Museum attached to the Department of Forensic Medicine in the University of Edinburgh. The scheme of classification is as follows:—

I. Specimens illustrating sudden or unexpected death from natural causes—e.g., conditions of the heart, brain, stomach and intestines, larynx, &c. (latent disease).
II. Deaths from mechanical violence: (*a*) Rupture of organs; (*b*) wounds—contusions, incised (cut-throat), stabs, lacerated, wounds of genital organs; (*c*) injuries and results of violence to brain; (*d*) fractures—skull, long bones, &c.
III. Death from asphyxia: (*a*) Drowning, (*b*) hanging, (*c*) strangulation, (*d*) choking, (*e*) overlaying—enlarged thymus gland.
IV. Specimens illustrating identity and post-mortem condition—e.g.: Tattoo-marks, malformations, finger-prints, foot-prints, post-mortem digestion of stomach, post-mortem discolourations and changes, post-mortem injuries, adiposis, mummification, &c.
V. Specimens illustrating: pregnancy; delivery—injuries, &c.; abortion; rape, virginity, &c.
VI. Death from burns.
VII. Death from firearms.
VIII. Infanticide.
IX. Effects of poisons.
X. Specimens of all chief poisons.
XI. Weapons of various kinds. Photographs. Microscope slides of various kinds in relation to all the above.

There are already in various parts of the Museum specimens which illustrate some of the sections included in the above list, but as regards the majority of these the College must depend on the public spirit and generosity of medical men. This letter is written in the hope that your readers may be induced to help in building up this most needful collection.

The Conservator of the Museum will gladly answer inquiries regarding the projected Medico-legal Collection and acknowledge the receipt of specimens.

There is another department of the Museum which is altogether dependent on medical men—viz., that which illustrates the development and growth of the human embryo and fœtus. In recent years the methods of preservation of such specimens have become so much more satisfactory that it will be necessary to replace some of the present specimens and to add many others.

The Conservator will gladly acknowledge the receipt of such specimens and give a descriptive account of them if the donor should so wish. It is of the utmost importance that the full history relating to the age of such specimen should be known.

You will render the Museum of the College a service if you will be so good as to bring these matters before your readers. I am, Sir, yours faithfully,

ARTHUR KEITH,
Conservator of the Museum of the Royal College of Surgeons of England.

March 20th, 1912.

THE CAUSATION OF TOXIC SYMPTOMS FOLLOWING THE ADMINISTRATION OF SALVARSAN.

To the Editor of THE LANCET.

SIR,—Although questions of priority have little interest to anyone except those immediately concerned, we hope that you will find space for the following remarks.

In a letter printed in your last issue we think Mr. Bayly does us a slight injustice in stating that our work confirms that of Major Gibbard, Major Harrison, and Lieutenant Cane. Major Gibbard and Major Harrison and their collaborators will of course recognise that we do not wish to minimise the value of the investigations which they have conducted from the beginning of the salvarsan era in England if we call attention to the fact that our original publication was headed "Eingegangen bei der Redaktion am 20. September, 1911."

Again, we take some exception to Mr. Hort and Dr. Penfold's statement that we "resuscitated Wechselmann's theory." We have always given Dr. Wechselmann the fullest credit for having been the first to call attention to this subject, but we cannot help pointing out that we have borrowed nothing from his writings except the reference to the work of Bingel on "salt fever." Dr. Wechselmann's first paper containing this reference was published in April and his conclusions regarding the toxicity of saline were incorrect. We immediately confirmed and corrected Bingel's work on man on a more extensive scale and had already demonstrated the method of eliminating the toxicity of distilled water before the publication of Dr. Wechselmann's second paper in July. Indeed, we were able to include some account of this work in our book on syphilis which was in the hands of the booksellers in October. This note was written before the publication of Dr. Wechselmann's second paper.

Further, we should like to point out that Dr. Wechselmann and others have only demonstrated clinically that salvarsan dissolved in freshly distilled water is non-toxic to man. They *inferred* that the toxicity was due to some bacterial product in the water. We, however, believe that we alone have traced the cause of these phenomena experimentally, producing direct, as opposed to indirect, evidence, and that we alone demonstrated clearly the difference in the reaction to salvarsan of acute and chronic syphilitics, thus clearing up several points which had been held as objections to what we will call "Wechselmann's theory."

Mr. Hort and Dr. Penfold will take exception to some of the phrases we have used above. The origin of their letter appears to be the reference we made to their work in our paper in THE LANCET. We must apologise for the seeming discourtesy of a footnote, but we much regret that our paper was in the press before the meeting of the Pathological Society took place. Nothing in our paper should be taken as a reply to anything Mr. Hort and Dr. Penfold may have published. We readily confess that we do not fully understand the intricacies of their work, and therefore we cannot enter into any profitable discussion of it. A help to our understanding will be the publication of the experiments which they have made in support of their views. A cursory description before a medical society cannot be accepted as "publication" of experiments. Few can follow the argument, and the author cannot be held to any one statement. Of still less value is the account of these meetings in the papers. In the report of Mr. Hort and Dr. Penfold's paper published in THE LANCET, no detail was given, and the Proceedings of the Pathological Society are not yet published; where, therefore, can we find verification of their present statement: "He (Dr. McIntosh) confessed that he had not carried out the control experiments we had shown to be essential"? We strongly protest against such confessions being put into our mouths. Mr. Hort and Dr.

Penfold have put a construction upon the conversation which was certainly not intended.

The expressions "proved to demonstration" and "indisputable fact" which appear in their letter in reference to their work leave us cold. They indeed imply a great confidence, a confidence which we hesitate to place in our own researches; nevertheless, we had thought that we had "proved" the opposite, and, so far as is possible at present, we must dispute their "indisputable fact." We repeat that we "await the publication of precise technical details" or an indication of the site if they have already been published.

We are, Sir, yours faithfully,

J. MCINTOSH,
P. FILDES,
H. DEARDEN.

London Hospital, E., March 19th, 1912.

THE INTESTINAL FLORA.

To the Editor of THE LANCET.

SIR,—Dr. Edwin Goodall, in your issue of March 9th, calls attention to the *résumé* of my researches in my article of Feb. 24th.

I think that judgment should be withheld until all the facts are known. My article *in extenso* will appear soon in the *Centralblatt für Bakteriologie*, 1 Abt. Orig. Bd. 62, and I shall then be glad of any just and impartial criticism. I may point out here, however, that Dr. Goodall is at fault in expressing astonishment that indol and its congeners are produced in the colon. It is surely a fact, which anyone who has seen a preparation of fæces has noticed, that the intestinal flora of an adult man is to a large extent composed of microbes which are known to form these substances *in vitro*. That these same substances are produced *in vivo* is obvious, for in the colon there are decomposition products of the tryptic digestion and absence of sugar. There are, moreover, other facts which cannot have escaped so careful an observer as Dr. Goodall. 1. It is a recognised fact, to be found in every text-book of physiology, that in fistula of the ileum the discharge has never been observed to give the reactions of indol, although as much as 1000 grammes have been used in the investigation. 2. In the process of tryptic digestion, carried out under aseptic conditions, E. Fischer and Aberdhalden were never able to detect these substances. When, on the other hand, the digestive process was accompanied by bacterial growth indol and its allies were produced. 3. As Dr. Goodall knows, the stools of the infant at the breast never give the indol reaction. The reason of this is that the intestinal flora of these infants includes none, or only a negligible number, of the indol-producing organisms. 4. In a series of observations on the bat, carried out in collaboration with Professor Metchnikoff, Berthélot, and others (*Annales de L'Institut Pasteur*, 1909), it was shown that in this animal, which has an extremely short colon, the distillate from the stools contained neither indol nor its allies. 5. It is also a matter of general knowledge that when one changes the intestinal flora for the better, the sulpho-conjugates sensibly diminish and in some cases almost disappear, as I can demonstrate on myself.

These facts leave no doubt that indol and its allies are formed by the microbes of the large intestine. Now there is still in question whether the liver suffers from this condition of intestinal intoxication. In this connexion the amount of sulpho-conjugates in the urine affords valuable testimony. In the breast-fed infant there is no evidence of the formation of these substances, but as soon as feeding by cow's milk is commenced intestinal putrefaction begins and sulpho-conjugates appear. Further, in the normal adult their proportion increases, and in constipated subjects becomes augmented even to four times the normal amount (*vide* Combie: "Sur l'Auto-Intoxication Intestinale"). It is a known physiological fact that the sulpho-conjugates are formed in the liver, and it follows that the excessive production of indol and its allies in the intestine and their absorption by the portal system must increase considerably the work of this organ, which is responsible for their elimination.

Dr. Goodall is further astonished that this flora is harmful. On this assertion, which is a consequence of the facts that I have established, I do not propose to waste words. This flora is dangerous, for it is admitted that an excess of indol in the intestine is associated with the symptoms of trouble of intestinal origin. That microbes undergo autolysis in the colon of constipated individuals there can be no doubt. In the cases operated on by Mr. Lane it was found after the operation that certain microbes had appeared in the stools which previously were absent, and it is entirely within reason to conclude that these microbes were part of the flora of the colon originally.

Dr. Goodall reproaches me for my hypothesis of the rôle of these substances of microbic origin—viz., that they act on the nerve-plexuses of the intestinal mucosa. However, the part played by the nervous system in the intestinal activities is well established by Cannon, whose excellent monograph, published a short time ago, Dr. Goodall probably knows. Perhaps I may be permitted to submit to him this question: If these substances, which I have never spoken of as toxin, are not directly or indirectly harmful, how does he explain many of the phenomena to be observed in connexion with the colon? I admit, however, that this hypothesis will have to be elaborated. My own work on chronic intoxication by intestinal bacteria is only the beginning. *Ars longa, vita brevis.*

I am, Sir, yours faithfully,

Russell-square, London, W.C., March 16th, 1912. A. DISTASO.

THE VALUE OF PNEUMOCOCCUS VACCINE IN THE TREATMENT OF PNEUMONIA.

To the Editor of THE LANCET.

SIR,—The kindly and courteous criticism of my paper in THE LANCET by such a distinguished authority as Sir R. Douglas Powell demands on my part an immediate reply.

The first question is a most important one, and relates to the superiority or otherwise of an autogenous vaccine as opposed to a homologous or stock vaccine. On strictly scientific grounds a vaccine ought to be autogenous, and especially in the case of the pneumococcus, which is not by any means a constant organism either as regards strain or virulence, but the difficulty in preparing an autogenous vaccine in a case of acute pneumonia is very great, and could only be done by puncturing the lung, as Sir Douglas Powell points out, at great hazard. We are therefore compelled to use a stock vaccine, the dose of which need not be so carefully regulated as in the case of autogenous vaccines, and which in my hands has proved most satisfactory. With regard to the stage of the disease at which it ought to be injected my experience of a large number of cases of pneumonia teaches me that the earlier it is given the better, and it is now my practice to give a good dose immediately the disease is recognised. Of course, in many cases of pneumonia which are running a favourable course vaccine is not necessary, and I thoroughly agree with Sir Douglas Powell as to its value in those cases where a prolonged pyrexia occurs without pus formation.

The criticism of my mortality table is quite warranted, and I quite admit that a death-rate of 16 per cent., based on 207 cases of pneumonia treated with vaccines, is not any great advance on the results obtained by other methods of treatment. I would, however, like to express my belief that in the future, with further experience and knowledge of vaccine, this death-rate will be still further reduced.

With regard to the dosage, I take it the object of giving vaccine is to produce an immunity in the blood against the pneumococci and stimulate the formation of anti-pneumotoxin. The doses which we have been accustomed to give are in my opinion too small, and any immunity which is produced is of too short a duration and of a temporary character. For this reason, and bearing in mind that we have never observed any reaction or ill effects from its use, we have been encouraged to largely increase the dose from 50 to 100, or even 150, millions in a serious case.

I cannot see any reason why acute pneumonia should necessarily run a course of six, seven, or eight days, and we have recently treated two acute cases in hospital with continuous injections of vaccine (50 millions every four hours) with the happy result of aborting the attack, bringing the temperature to normal, and relieving the patients of the distress due to respiratory embarrassment and toxic absorption. The physical signs of consolidation were not much influenced by the treatment, but there was a complete absence of toxæmia. These cases will shortly be published, and I feel sure that the treatment of pneumonia will in the future be directed to

aborting or cutting short an attack rather than in guiding the disease for a stereotyped number of days to a crisis, by which time the patient is often poisoned by toxæmia and his heart paralysed by exhaustion. By the administration of anti-toxin we abort an attack of diphtheria, and in my judgment we must use every endeavour to stop an attack of acute pneumonia. I take it that the "crisis" in pneumonia is the exact time when a sufficient amount of anti-pneumotoxin has been formed in the blood automatically, to counteract the toxins of pneumococci.

If we can bring about that result early in the disease by the use of vaccines or serum we will save an enormous amount of suffering and greatly reduce the mortality from the disease which is so aptly described by Osler as "the Captain of the Men of Death."

I am, Sir, yours faithfully,

Liverpool, March 18th, 1912. NATHAN RAW.

A NEW GALACTAGOGUE.

To the Editor of THE LANCET.

SIR,—It is well known that the food of an animal and the season of the year modify the quantity and the quality of the milk secretion. Goats' milk, for instance, is said to be astringent after the animals have eaten the leaves of the oak or pine trees, and to act as a gastric sedative if the wild hellebore is made a part of the diet.

It was customary in the old days to prescribe the diet, not only for the infant or invalid, but for the animal from whose milk the patient was to be fed. An instance occurred in the practice of the famous Italian physician of Milan, Jerome Cardan, when about the end of the sixteenth century he was called to Scotland to attend Mary Queen of Scots. The Archbishop of St. Andrews, John Hamilton, whose brother was heir to the throne of Scotland, never had robust health, and was at that time suffering from some lung disease, probably phthisis. Advantage was taken of Cardan's presence in Edinburgh to ask him to attend on and prescribe for the archbishop. He treated him with beef-juices made of blood serum; chicken broths flavoured with cinnamon, wine and ginger; but milk was the "sheet anchor" in the dietary. The savant contended that milk kept the stomach open and cleared the brain, and he ordered the archbishop to drink from two to four pints of ass's milk, either all at once or in several doses with no greater interval than an hour. The ass was treated also. The animal was ordered to be provided with mild herbs, such as mallow, juicy beetroots, rose blossoms, as well as fresh corn and barley, and the mother and foal were ordered to run together freely in a meadow daily. This prescription gives a hint to those interested in milk feeding of consumptives to-day.

The turnips given to a stall-fed cow impart a flavour to its milk and to the cream and butter; a similar thing occurs when the animal is fed with new clover. Leeks, onions, garlic, and other members of this group taint the milk, their active principles being secreted by the milk gland, as in the cases of oils of dill and aniseed. Before the days of artificial foods physicians were careful to order milk derived from one cow, the animal being specially fed, and in some parts of the country this is not now departed from.

Beans, peas, and lentils have long been held in esteem for increasing the milk-supply. Hippocrates recommended cabbage; Paul of Aegina the carrot, beet-root, cresses, and chicory, for this purpose. Professor Tarnier's favourite galactagogue was malt, and farmers still use the draff of the brew-house for cow feeding. Dr. Carron de la Carrière, of Paris, speaks highly of the old-fashioned goat's-rue, or as others call it, galega, formerly much used in medicine as a diaphoretic and stimulant. He has observed, when this is given to the suckling mother, the infant increases in weight and rests and sleeps better.

Our Pharmacopœia has little to offer the medical practitioner or midwifery nurse in the way of milk-inducing agents. Recently, a preparation of the cotton seed has been tried with much success, increasing the mother's milk both in quantity and in fat and casein. The product has been minutely described by Dr. Ballerin, of Paris. Cotton seeds are reduced to a fine powder, the oil and resinous matters are extracted by ether and benzine, and the active principle obtained by infusing the residue, and thereby getting rid of the colour and the odour. The resultant liquid is concentrated *in vacuo* and the blocks pulverised. This powder is free from cellulose, oil, and other indigestible products. It has no toxic properties. The active principle, so far as milk-producing properties is concerned, is edestine. The product has been administered to domestic animals, with the result that the quantity of milk increased by 30 per cent., and the fats and solids in corresponding proportion. The same results have followed its administration to lying-in or suckling mothers. Several cases of this nature have come under my personal observation. For example, a lady with her second child noticed at the fifth month that the breasts were becoming soft, and the milk diminishing in quantity. This cotton-seed powder produced a large accession of milk, and by continuing its use she was able to go on nursing without further trouble. The following is rather a severe test. A mother who had never been able to suckle more than four months has been able to continue for nine months, the baby being plump and thriving, to the great delight of the mother. The milk-supply has been abundant throughout.

Bearing in mind that artificial feeding is the most potent cause of the maladies of early infancy, and the chief factor in the production of infantile mortality, the importance of a reliable galactagogue can scarcely be over-estimated.

I am, Sir, yours faithfully,

Goswell-road, E.C., March 9th, 1912. W. LAUZUN-BROWN.

FUNGI FOUND IN TROPICAL BRONCHOMYCOSIS.

To the Editor of THE LANCET.

SIR,—In my letter on this subject I pointed out an error that Dr. A. C. E. Castellani had made in describing endomyces albicans as liquefying gelatin. The only organism of that name is E. albicans (Vuillemin) described in 1898 (*Comptes Rendus de l'Académie des Sciences*), and again by Goedelst and Vuillemin ("Les Champignons Parasites," 1902, p. 38), when they distinctly state: "La gelatine n'est jamais liquefiée." Dr. Castellani remarks that anyhow there are a number of organisms concerned in thrush, and that some of them liquefy gelatin. That seems beside the point, while he neglects the species described by M. Vuillemin, a distinguished French mycologist of world-wide reputation.

In apology for my venturing to express an opinion at all, I may point out that in his original communication Dr. Castellani (1) admits he has no evidence that his saccharomyces is a saccharomyces; and (2) offers no evidence that his endomyces are endomyces. (3) Finally it appears probable there are still two slips in the fermentation table—for instance, one organism ferments (A.G.) raffinose, but no disaccharid, and another ferments raffinose and saccharose, but not levulose. These are abnormal and in need of confirmation.—I am, Sir, yours faithfully,

Acton, W., March 18th, 1912. ROBERT CRAIK, M.D. Glasg.

THE BED ISOLATION OF CASES OF INFECTIOUS DISEASE.

To the Editor of THE LANCET.

SIR,—In the course of such unfavourable comments as have hitherto been made on the plan of "bed isolation" in dealing with infectious diseases—which, by-the-bye, have, so far as I know, only issued from those who have not given it a trial—the responsibility for its origin has been pretty definitely allotted to myself. I shall be glad therefore if you will be good enough to allow me to make some reference to the encouraging results reported by Dr. C. Rundle and Dr. A. H. G. Burton, in their excellent paper in THE LANCET of March 16th. There is just one point with which the authors are doubtless quite familiar, but which is not perhaps emphasised sufficiently by them to arrest the attention of those who have not read the original papers on the subject. I mean the paramount necessity of the routine cleansing (with a view to minimise possible aerial dissemination, as well as to effect other ends) of the mouth and throat, if not the nose, in all cases. At Mortlake every patient used on admission to be given a separate spray producer and a new tooth-brush. The tooth-brush was used at least twice a day, and the atomiser, with an oily disinfectant, every four hours at first.

Of course (in the case of small hospitals especially) there are many contingent advantages in the adoption of the method of bed-isolation, but, as I have tried to point out, in a recently published volume of essays, it is a method that

depends on principles that should be always applied in dealing with cases of infectious disease, whether kept at home or sent to hospital. The use of symbolic barriers, like the red cord, or material barriers, like the glass partition, has in private practice an analogue in the fetish of the wet sheet. In all these cases attention is directed to a non-essential symbol, and the success or non-success of the barrier and cubicle systems depends not on the barrier or wall so much as on the incidental attention paid to hands and articles.

The method of "bed isolation," then, is nothing more than the carrying-out of the principles of asepsis and antisepsis in the case of certain diseases. The details are to be modified, if necessary, as we gain knowledge of the differences in the mode of transference of the different viruses. But certain principles are suitable for application in all cases, and should be applied whether the patient is at home or in hospital, in a special ward or in a "mixed" one.

I am, Sir, yours faithfully,

Welbeck-street, W., March 16th, 1912. F. G. CROOKSHANK.

CAVITATION OF THE LUNGS IN YOUNG INFANTS.

To the Editor of THE LANCET.

SIR,—The instances of hæmoptysis occurring in young infants referred to by Mr. P. Carruthers Watt and Sir R. Douglas Powell in the issues of THE LANCET for Jan. 27th and Feb. 3rd of this year are of some interest from the standpoint of the presence of cavitation due to tubercle in the early months of life. I have seen a large cavity in the lower lobe of the left lung crossed by a fibrous band at the age of 5 months. Death was due to tuberculous meningitis. In another case, of a child, aged 8 months, a cavity of the size of a walnut was present in the upper lobe of the left lung.

Interesting though this cavitation is at so early an age, whether complicated or not by hæmoptysis, there seems to me to be a danger that its presence should be taken as evidence of the not uncommon occurrence of phthisical cavities of chronic character in children. Such cavities are, in my experience, of great rarity in childhood. Needless to say, I speak especially, not of the early months, but of the early years of life. The cavities above referred to occurring in infants, like tuberculous cavities occurring later in the lungs of older children, were acute or subacute in character due to the rapid breaking down of caseous broncho-pneumonia.

Although well known, it is a fact which is deserving of emphasis in these days of examination of school children, that chronic cavities in the lungs of children are almost invariably bronchiectatic in nature. It may be interesting to add that considerable degree of dilatation of the bronchial tubes may be present under the age of one year. In a child aged six months I have seen half of the lower lobe of a lung affected with broncho-pneumonia thickly studded with dilated bronchial tubes, some measuring a quarter of an inch across. Broncho-pneumonia, especially apparently the broncho-pneumonia of measles, is the main cause of dilatation of the bronchial tubes in children.

The frequent reference in medical papers to the widespread infection of children with tubercle tempts a further remark that these references not uncommonly appear to manifest confusion as to what is meant by infection by tuberculosis. Some writers appear to assume that frequent infection of children with tuberculosis proves the frequency of chronic pulmonary tuberculosis. In children tuberculosis of the lungs is acute or subacute. During childhood the lungs appear to exhibit little or no power to prevent the rapid spread of infection within them, and death occurs before many months have passed.

I am, Sir, yours faithfully,

Sidcup, Kent, March 15th, 1912. THEODORE FISHER.

THE MEDICAL PROFESSION AND THE NATIONAL INSURANCE ACT.

To the Editor of THE LANCET.

SIR,—In November last year you published a letter of mine in which I proved from the figures of my own practice that contract work paid for by premium per head and salary was much more lucrative than ordinary private work paid for by fees per visit. The publication of my discovery made but slight impression at the time, and apparently it failed to convince many of your readers that what was a particular truth as regards my practice was, indeed, a general truth of all practices. My contention then and now is that payment by premium gives better returns than payment for work done, and that in view of the falling sickness-rate the premium method is the only means by which our incomes can be maintained. I also tried to show that premiums can be adjusted to clients of all grades of income and of all degrees of ill-health. Throughout the controversy on the Act nothing has been more astonishing than the wide differences in the estimates made by various correspondents as to the equivalents of the two methods. Scarcely any two writers have agreed as to what premium *per capita* would be equivalent to a given fee per visit, and this is the very key of the whole position. It is practically agreed that if the Act would give us half-a-crown a visit or its equivalent premium we should be content. I think we are unanimous on that point, and it is about the only point on which there is complete agreement. The disagreement has arisen through the erroneous methods employed to find the equivalent in premium to this fee of half-a-crown per visit. Estimates have varied from 25*s.* to 6*s.*, the latter figure being the sum offered us under the Act. In my November letter I thought that 8*s.* 6*d.*, the premium paid by the Post Office, should be the amount paid under the Act, and we know that the Association has now fixed its demand on that sum. All this confusion of opinion has arisen from the absence of statistics. Actually the only trustworthy and useful figures before us are the returns of the societies, which give us the number of members and the total sick days paid for by them. But these returns do not give us the number of visits paid by the doctors attending, nor do they give us any idea as to the number of visits each sick member received. Sick days have the vaguest relation to sick visits. Practically no one keeps a record of the work he does for his clubs. Another difficulty in accepting the various estimates as equivalents arises through the knowledge that sickness-rates vary in different districts, at different times of the year, in different years, in different industries, in the two sexes, and at different ages. Not only does the sickness-rate vary, but so also does the personality of the doctor who makes the visits. So that every attempt to solve the difficulty has but added to the confusion—so far. Clearly the truth lies in this, that any estimate must depend on and vary with the personal equation—no two estimates could be exactly alike, because what I may call the "visiting habits" of no two doctors are alike. An average must be struck. That is what the Association has done. Is it high enough? Every general practitioner can put it to the test, in a way I will presently demonstrate.

I have within the last 24 hours lighted on an idea which to me seems likely to help us to solve this problem of equivalents. As I have said already, the equivalent arrived at will differ, slightly it may be, perhaps only fractionally, in every two practices. But every medical man would like to know what premium per head would give *him* the same return of income as his present visiting fees do. He is at a loss in his search for truth in all the maze of conflicting views that confront him at meetings and in the journals week by week. My plan will enable him to get very close to the mathematical truth. He will be able in half an hour to find how near to the average 8*s.* 6*d.* struck by the Association comes his own way of doing his work while charging for it at the rate of 2*s.* 6*d.* per visit.

Every practice contains so many clients at any given moment. A client is a person who either is now, has been, or may be a patient. What we want to know first of all is how much each client pays in the year to the doctor of his choice. Now here I must point out that no town doctor whatever, and very few country doctors, know how many clients they have, and herein is the root of many fallacious estimates. A client may never actually be a patient at all. For instance, an old client of mine was found dead in his back yard—he had never had a bottle of medicine in his life. If he had been a private client this practice would have derived nothing from him—there are such cases in every practice no doubt—but as a matter of fact this man as club client had been paying 6*s.* a year for 40 years to the practice. If, again, this man had lived in a town, and had not been a member of a club, no doctor would necessarily have known whose client he was. I make this illustration to show that very few doctors can really be sure how many clients they possess, and also to demonstrate the probability that there are thousands of people walking

the streets to-day, clients of no one knows whom. They are non-paying now, but will be premium-paying under the operation of the Act. So it comes to this, that no town doctor can tell how many clients it requires to furnish his income. But every doctor, of course, knows who have been, who are, and who are not his patients. And as one can see how impossible it is to arrive at the total of his *clientèle*, I have had to adapt my plan to the ledger as it stands now, and not as it may stand through the next five years.

We want to know how much we get from each client of our practice now while he is a private person, so that we can compare this sum with the amount we are demanding (8*s*. 6*d*.) from the same client when he becomes an insured person. Does every working-class private client of our practice now yield us as much as 8*s*. 6*d*. per annum? No one can answer, because no one knows all his clients. All that can be done in this direction is to see from one's books if the working-class *patients* have, over a period of four or five years, paid as much by fees as they would have done if they had each been paying us a premium of 8*s*. 6*d*. per annum. All that is necessary is to take from the ledger the names of 100 individual working-men patients *now alive*, add up what they have paid to the practice in 1908, again in 1909, 1910, and 1911. They must be the same individuals in each count. Then by making a total of the whole sum received from them in the four years and dividing it by 400 we get the average payment of each working-man private patient per annum. I venture to prophesy that every doctor who takes the trouble to make this simple investigation will find that the figure 8*s*. 6*d*. is on the safe side.

I should point out that this plan of taking patients' names instead of clients' (which one would do if one could) is really in my disfavour, inasmuch as many of one's clients are not on the ledger at all, are now paying nothing, but are soon to be insured and will pay a premium. Also one would get a truer equivalent with a larger count—say 500. The same plan can easily be carried out with other classes of patient. For instance, one might wish to know what premium would tally with a charge of 3*s*. 6*d*. per visit or a 5*s*. visit and so on.

In making up the count one ought in fairness to add to the list of patients a small percentage for clients who hitherto have not required service, but who are nevertheless potential patients of the practice and will pay premium under the Act. I would suggest 97 names of actual patients and add 3 for clients known or unknown and who pay nothing at all, of course, during the four years. It is not probable that the worked out average sum per head received per annum will be the same in any two practices. There will be fractional differences accounted for by variation in propensity to visit of different doctors—that must be expected.

I trust a good many of your readers will take the trouble to utilise my plan and bring forward their results. The more results we have the more readily shall we get an all-round general and true average premium for every rate of fee.

I am, Sir, yours faithfully,

B. HALL, M.B. Lond.

West Mersea, Colchester, March 11th, 1912.

To the Editor of THE LANCET.

SIR,—The medical profession, almost to a man, looks on the National Insurance Act with disfavour, and we are still searching for one beneficiary under the Act who has desired it, or, now that he has got it, is satisfied with it. Those of us, however, who have read Dr. Brend's recent articles on the subject[1] must have come to the conclusion that they formed one of the most carefully reasoned analyses of the Insurance Act which have so far appeared. Also, that there is something to be said for some of the views of the Chancellor of the Exchequer. Dr. Brend has apparently had the time and the ability to make a complete study of the Act in all its bearings, a thing which can hardly be said of most of the writers on the subject in medical and other papers.

At the same time, I have been a little bewildered, for if his statements are correct it is clear that the effects of the Act will not be so disastrous as we have hitherto supposed. Dr. Brend shows that the remuneration suggested is an increase upon existing fees, and that payments can be made to medical men from several other sources without touching upon the 6*s*. for medical benefit. Are these facts? The general practitioner is not in a position to estimate the effects of the Act, and some of the letters which have appeared in the press anticipating the ruin of medical practice have quite obviously been based upon errors. Dr. Brend points to the paucity of published statistics, but, as I have before suggested, cannot the British Medical Association give us some authoritative information? It has been collecting such information since the Bill was introduced, or, if not, it should have been doing so. What we want to know is this: What is the average amount which each person who will be insured under the Act pays for medical attendance now, and how many times does he see the doctor in the course of the year?

We may be quite sure that full information on these points is in the possession of the Chancellor of the Exchequer. But until we possess it ourselves, based upon full and reliable figures, we have nothing upon which to establish a claim for higher remuneration. We may ask for 8*s*. 6*d*., but until we can give solid reasons, and not vague generalisations why we should have it, we are merely ploughing the sands.

Dr. Brend's comments on the unsatisfactory way in which medical affairs generally are dealt with by the State will receive wide endorsement.

I am, Sir, yours faithfully,

Enfield, March 12th, 1912. R. HALDANE COOK.

[1] THE LANCET, vol. i., 1912, pp. 383, 447, 524, 598.

To the Editor of THE LANCET.

SIR,—Whether the decision of the British Medical Association to nominate members for the Advisory Committee of the National Health Insurance Joint Committee before the "six cardinal points" have been embodied in an amending Act or conceded by the Government is to be regarded as a climb-down, or otherwise, there can be no question as to its being decidedly diplomatic. I regret, however, that the Association has decided to entertain the question of adopting the capitation system of payment. My limited experience of contract work at *per capita* is that it is decidedly objectionable from every point of view, and that we should, if possible, wash our hands of it altogether.

It is admitted by the Commissioners themselves that the Act is sufficiently elastic to permit of payment by fees for actual services rendered. This is an ideal system, it is perfectly feasible, and may now be permanently and universally established if we unite as one man in demanding its adoption. The referendum taken by the Imperial Medical Reform Union in July last justifies me in saying that fully 95 per cent. of the general practitioners in England and Wales prefer payment for actual services rendered to the old and discredited capitation system.

We have now a grand opportunity for doing away with capitation payment for club work. I sincerely hope it will not be thrown away.

I am, Sir, yours faithfully,

GEORGE BROWN,
General Secretary, Imperial Medical Reform Union.

Callington, Cornwall, March 12th, 1912.

MANCHESTER.

(FROM OUR OWN CORRESPONDENT.)

A Curious Compensation Case.

A REMARKABLE case of importance to public bodies was heard recently at the Manchester assizes. The plaintiff had in his house a penny-in-the-slot gas meter. A penny became fixed in the slot and the meter became inoperative, and an officer of the Manchester corporation was asked to remedy the defect. In endeavouring to extract the coin he used his pocket-knife, and inadvertently left this knife on the ledge of the cupboard in which the gas meter was fixed. A boy, aged 5, was playing about the house, and about half an hour after the official had left the child was heard screaming in the street. It was then found that the child had the knife, and while swinging round a lamp-post had struck himself with it in the eye, whereby the sight of the eye was utterly destroyed and the eyeball had to be removed. The action was brought to recover from the corporation on the ground

that the injury to the boy was occasioned by the negligence of the official when he was acting as a servant of the corporation. After hearing evidence and arguments *pro* and *con.* the jury, in answer to questions from the judge, found that the officer, in the course of his employment and purposing to act on behalf of the corporation, was negligent in leaving the knife where he did, and that the accident was caused by such negligence. They assessed the damages at £125.

Hospital Saturday Fund.

The total amount raised for the Manchester and Salford Hospital Saturday Fund in 1911 was £7524, an increase of £358. £4400 were distributed among the hospital charities. It had been expected to realise more in a year of such good trade, but labour disputes had a serious effect upon the collections. It was urged that an attempt should be made during the present year to induce large employers of labour to encourage weekly collections in aid of the fund among their work people.

Instruction in Care of Infants.

The Board of Education in a memorandum dated November, 1910, directed the attention of local education authorities to the importance of instructing girls in the care and management of infants. The Board said that it is beginning to be widely realised that the teaching given to girls in the elementary day schools might with advantage be made more practical and be directed more definitely towards increasing their knowledge of the ordinary routine of domestic hygiene, including infant care. This work of teaching domestic hygiene has been in full operation since 1903. Instruction has been given in 103 schools to 8554 children in Standard V. and upwards.

Adolescent Insanity: Compensation Case.

An interesting case of "adolescent insanity" was recently before the Manchester County Court. A company applied for the termination or redemption of compensation payable to a girl, aged 17, on the ground that the girl was being maintained out of the public rates in Prestwich Asylum and that the disease from which she was suffering, "adolescent insanity," was not due to the accident in respect of which the compensation had been paid. The application was opposed by the South Manchester guardians, who were responsible to the county authorities for the maintenance of the girl. After hearing evidence the judge said that in a case of this kind the onus was upon the respondents of satisfying the court that the girl's present condition was due to this particular accident. Neither the assessor nor himself was so satisfied, and the compensation would therefore be terminated, with costs against the guardians.

Magistrates and Milk Prosecutions.

From the annual report of the medical officer of health for Nelson we find that in three milk prosecutions taken during the year only one conviction was obtained. Dr. Millar considers it regrettable that magistrates generally throughout the country do not appreciate more fully the importance of this question in relation to infant life. Any semblance of a defence is accepted as a pretext for dismissing a case, often with the result that local authorities are discouraged in their efforts to check adulteration, and the public continue to suffer. In view of the important position which milk occupies as an infant food, he considers it very desirable that an absolute standard of quality should be fixed, and any failure to reach such standard should be deemed an offence.

March 19th.

BIRMINGHAM.

(FROM OUR OWN CORRESPONDENT.)

The University.

Professor John Joly, D.Sc., F.R.S., professor of geology in Trinity College, Dublin, has been appointed Huxley lecturer, and Mr. John Furneaux Jordan, M.B., F.R.C.S. Eng., Ingleby lecturer for this year. Dr. H. Percy Pickerill, formerly lecturer in dental histology and pathology in the University, and now director of the Dental School of the University of Otago, New Zealand, has been awarded the Cartwright prize of the Royal College of Surgeons of England for an essay on the Prevention of Dental Caries.

General Hospital: Retirement of Sir Thomas Chavasse.

The resignation of Sir Thomas Chavasse, the senior surgeon, will be a great loss to the General Hospital. He was appointed assistant surgeon in November, 1878, and honorary surgeon in December, 1881, making altogether over 33 years' service to the hospital. The following resolution was unanimously carried at a meeting of the board of management on March 1st:—

That this board has received with great regret the resignation of Sir Thomas Frederick Chavasse, and desires to record its high appreciation of the very able and courteous manner in which he has performed his duties of honorary surgeon to the hospital for the past 30 years, of the great skill and unwearied attention he has always devoted to the patients under his care, and of the interest he has at all times showed in the welfare of the institution generally. That the resignation of Sir Thomas Chavasse be accepted with great regret, and that in consideration of the eminent services of Sir Thomas Frederick Chavasse it be recommended to the next annual meeting of governors that he be appointed consulting surgeon to this hospital.

The Queen's Hospital.

The seventy-first annual report shows that the balance of expenditure over income last year was £5016 19*s.* 10*d.*, as compared with £5200 in 1910. The endowment of the hospital—about £40,000—is not large, the income from investments being only £1900. This is very little towards the annual expenditure of £16,000. The annual subscriptions for 1911 reached £3402, the largest amount since the foundation of the hospital. The legacies received amounted to £3342. Under the will of Mr. John Roderick the hospital will shortly receive £10,000, and in addition one-quarter of the residue of his estate. The committee, although unable to state with any certainty the effect of the National Insurance Act upon the finances of the hospital, calls the attention of subscribers to the fact that, whatever ultimately happens, the annual expenditure will not be decreased but will in all probability be increased by the new Act. It will not reduce the number of in-patients, because it makes no provision for the treatment of serious illness, nor will it probably reduce the number of out-patients appreciably, for the majority of these are married women, children, and other uninsured persons. The annual cost of insuring the hospital staff under the Act will be about £130. The number of in-patients treated last year was 3172, a decrease of 101 as compared with 1910, but an increase of 42 as compared with 1909. The decrease was due to the fact that several wards were closed for cleaning for a longer period than usual. The average stay of patients in hospital was 19·2, as compared with 18·8 days in 1910, and the average number resident daily in the hospital was throughout the year 159, as compared with 161 in 1910. The cost of each in-patient per week was £1 9*s.* 5½*d.*, as compared with £1 8*s.* 6½*d.* in 1910. The cost per bed per annum was £76 11*s.* 9*d.*, as compared with £74 4*s.* 6*d.* in 1910. The number of out-patients was 39,743, as compared with 39,365 in 1910. Regarding the appointment of an almoner it is reported that 260 cases passed through her hands. The treatment recommended for the cases referred to has been provided by the Charity Organisation Society and to a smaller extent by the City Aid Society and other institutions. There is no reason to suppose that any considerable financial saving has been made to the hospital, and the question whether the work of the almoner should be continued and the cost of it added to the standing charges of the hospital has been deferred until a further report of the work done has been received.

March 19th.

SCOTLAND.

(FROM OUR OWN CORRESPONDENTS.)

Scotland and the National Insurance Act.

THE lull in medical interest in the National Insurance Act continues, but it is satisfactory to learn that in more than one place the doctors have set themselves to consider seriously the question of club practice and the position of the present holders of such posts in view of the possibilities of the future. It is understood that more than one unofficially constituted committee is investigating this thorny and difficult problem. The results will probably only be known when the Scottish Medical Insurance Council meets, and it cannot meet until railway travelling presents greater facilities than it does at present. Mr. Leishman,

chairman of the Scottish Commission, accompanied by Miss Paterson, the lady member of the Commission, visited Aberdeen on March 14th, and in the afternoon addressed a large public meeting in the town-hall presided over by the Lord Provost. Mr. Leishman had hopes that arrangements would be made with the doctors, as it was a mistake to think that all the doctors were against the Act; in some places they had sufficient to carry on the Act with. If the worst came to the worst, which he hoped would not occur, the medical benefit would be suspended and the money returned to the members. Steps are evidently being taken all over Scotland for the inclusion of insured persons in existing clubs or societies, or for the establishing of new societies in order to make the full benefits of the Act available to such persons. It seems to your correspondent that this movement, to which there is frequent reference in the daily press, has to be realised by the profession more fully than it would seem to be. Whatever the doctors may do, they cannot prevent this gathering into societies of those millions of persons who are dealt with in the Act, and those societies will have to be dealt with later, unless Providence interposes, and the Act is suspended by a new Parliamant appearing on the scene. The profession, however, can hardly reckon on such intervention.

The Marine Biological Association of the West of Scotland.

The management and policy of this association have come in for severe criticism at the twelfth annual general meeting of the association held last week. Approval of the report was eventually carried by 12 votes to 10, but much doubt as to the policy of the executive has certainly been created.

Strichen Hospital Affairs: Official Inquiry.

At a meeting of the Deer District Committee, held on March 2nd, there was a private sitting over the vexed question of the administration of the Strichen Infectious Diseases Hospital, which has been under consideration since June, 1910.[1] The results of the inquiry, as embodied in a report, ordered by the Local Government Board into the management and administration of the hospital, had been submitted at a previous meeting of the district committee, when the appointment of all the subcommittees was postponed, and also consideration of the report until March 2nd. The report was considered *in camerâ*. The terms of the report were briefly as follows:—The Commissioners appointed by the Local Government Board to make inquiries were Mr. Alexander McKinna and Dr. Thomas F. Dewar. The inquiry was held in the Victoria Hall, Maud, on Tuesday and Wednesday, August 29th and 30th, 1911. The points of inquiry related to the following matters. 1. The case of Dorothy Henderson, Longside Manse, who was said to be removed home from the hospital while still in an infectious state, thereby conducing to other four cases of scarlet fever. 2. The case of Eliza Leal, whose case was diagnosed as scarlet fever on her entering the hospital, and who developed symptoms of scarlet fever 19 days after admission to hospital. 3. Alleged alterations in hospital books. 4. Alleged substitution of hospital books. 5. General administration of the hospital. 6. Visitation of the hospital by members of the subcommittee. 7. Relation of the convener of the hospital committee to the staff. 8. Hospital regulations. With regard to the points upon which Dr. G. S. Trail is directly or indirectly implicated, the Commissioners completely vindicate and exonerate him from any blame in the matters. They find: "The management of the hospital seemed to be everything that was desired." "The buildings were clean and in good order and the patients seemed to be well nursed and attended to." The Commissioners earnestly recommend that in future all the members of the hospital committee should take part in the visitation of the hospital and thus acquire direct and personal knowledge of the details of its administration. They go on to say that, much to their regret, they feel bound to give it as their conviction that the unhappy and unseemly circumstances which have been so continuous a feature of the administration of the hospital from June, 1909, until now, are essentially associated with the personal attributes of the convener of the hospital subcommittee. While fully appreciating the fact of his devoting his time and energy to its affairs, and conducing in no small part to the general success of the hospital's working, and while believing that throughout his actions he has been actuated by what he doubtless considered his duty in regard to its supervision, they no less definitely are of opinion that the difficulties involving Dr. Trail and the matron, and in less degree the district clerk, in much distress of mind and prolonged unhappiness, have arisen from his action. With regard to the gravest of them, where Dr. Trail and Miss Clark are charged with substitution of hospital books, or complicity in such substitution, Mr. Watt is neither associated with, nor is his action endorsed by, any of his fellow members of the subcommittee. With regard to hospital regulations the Commissioners, while not feeling called upon to suggest any amendment of these regulations, desire to express their opinion that they should not be interpreted in so stringent a fashion as the minutes of the hospital subcommittee of June 17th, 1909, and March 26th, 1910, would suggest. Mr. John Watt, retiring convener, protested against the finding of the reporters of the Local Government Board, stating that he did not admit the accuracy of certain statements on which the conclusions of the report were based.

The Practitioners at Dunfermline and the Friendly Societies.

The contract between the Dunfermline medical practitioners and the Friendly Societies closes at the end of the current month. This position of affairs ensues upon the local medical men raising their terms from 4*s*. 4*d*. to 8*s*. 8*d*. annually per member and intimating their resignation unless their terms were accepted. Representatives of the Friendly Societies, meeting as a committee, accepted the resignations, and it was decided by the Oddfellows to accept the services of two Glasgow medical men. The other Friendly Societies in Dunfermline have not yet decided upon a course of action.

March 19th.

[1] See THE LANCET, June 18th, 1910, p. 1722, and Sept. 9th, 1911, p. 798.

IRELAND.

(FROM OUR OWN CORRESPONDENTS.)

The National Insurance Act.

AT the mass meeting of the medical profession held in Dublin last June the care of the negotiations with the Government and others as to the terms of the Insurance Bill was committed to a joint committee of the British and Irish Medical Associations. This joint committee has now issued a report to the practitioners of Ireland detailing its labours, discussing the Act, and suggesting future action. The main activity of the committee seems to have been directed to a policy for which it had no mandate from the profession—the restoration of medical benefits to the Bill as applied to Ireland. In this attempt it failed. The report now issued deals fully with the provisions of the Act as applied to Ireland, and will prove of great value as regards future action. Although the Act as it applies to Ireland does not include medical benefits, there are, it appears, two ways open by which medical attendance may be secured—(1) as additional benefit under the terms of the Act and the regulations of the Commissioners; (2) by societies independently of the Act. Attempts were made to secure that medical benefits, if granted as "additional benefits" in Ireland, should be administered by the Insurance Committees, not by the societies, but Parliament added the words "unless the Irish Commissioners direct otherwise." The committee suggests that, in the event of the Commissioners so directing, it may be wise for Irish practitioners to decline all service under the Act. With regard to remuneration for medical services, the committee states that all arrangements lie between the Insurance Committees and local Medical Committees. It is properly affirmed that it is impossible now to give any considered opinion as to what the amount of remuneration should be. Rates must vary in different districts, and must be higher in the case of deposit contributors than, for instance, of selected members of a good society. The points for and against payment by capitation and by work done respectively are well set out in the report. The committee considers it very unsatisfactory that there is no appeal from the decision of the Commissioners. It suggests that the profession should insist on the following as minimal conditions, without which medical men should not accept service under the Act: (1) a total income limit for those entitled to medical benefits; (2) free choice of doctor; (3) all medical certificates to be issued by medical attendant; (4) administration of medical

benefits only through the Insurance Committees; (5) provision for extra remuneration for special services. It is intended shortly to summon a representative meeting of the profession, to which local Medical Committees should send delegates. It is also intended to form a Central Medical Committee consisting of representatives of the various medical societies, the universities, and the medical corporations. The committee urges the profession to organise in county committees without delay. It also asks practitioners to sign a pledge declining to enter into any arrangement for service under the Act except through a local Medical Committee.

New Labour Wards at the Rotunda Hospital.

The new labour wards at the Rotunda Hospital are now ready, and should render more easy the management of labour by modern methods. The suite consists of five rooms and a kitchen, a dressing-room, a waiting ward, the labour ward itself, a clerical room, and an isolation labour ward. The waiting ward and the labour ward are of the same size, the former being furnished with 12 beds. The two wards are fitted with similar hot and cold sterilised water-supplies, so that in case of need the waiting ward may be used instead of the labour ward. The floor of both rooms is of white mosaic, and the walls, to a height of 8 feet, of green mosaic. The rooms are well lighted, well ventilated, and lofty.

Royal Victoria Eye and Ear Hospital, Dublin.

The annual meeting of the Royal Victoria Eye and Ear Hospital was held last week. The report showing that the accommodation of the institution no longer meets the public demands upon it, it was proposed to add to the building so as to provide for 18 additional beds.

Derry Water-supply.

It appears from the report of a meeting of Derry water and fire brigade committee of the City Corporation, held on March 12th, that, notwithstanding all the rain of the present winter, the city reservoirs are still 64,000,000 gallons short of being full, with the result that there is a shortage of 28,000,000 gallons as compared with the corresponding period of 1911. As a result, the citizens have been placed on a restricted allowance in the hope of building up a good reserve so as to avoid a repetition of the water famine of last summer. It is clear that a more extensive supply is needed, as it is necessary, so early as at present and during a season of exceptional rain, to curtail the supply of domestic water.

The Provision for "Sanatorium Benefit" in Belfast.

The question is rapidly coming to the front, How is "sanatorium benefit" under the Insurance Act to be provided for in Belfast? At the present time the Belfast guardians have a magnificent sanatorium at White Abbey, near Belfast, which with its buildings and beautiful grounds of 33 acres cost £39,138, and which contains accommodation for 265 destitute consumptive patients. In the Forster Green Hospital for Consumption there are 76 beds (39 for men, 37 for women), and in that institution 35 beds are reserved for patients sent in on the recommendation of the medical officer of health of the city and the public health committee, these being paid for out of the rates. There are also ten consumptive beds at the convalescent home in connexion with the Royal Victoria Hospital—that is, altogether there are 351 beds available for "sanatorium benefit." Now, in Belfast during 1910, there were 825 deaths from phthisis, giving a mortality of 2·1 per 1000. Further, 929 cases of tuberculosis of the lungs were notified, pursuant to the Tuberculosis Prevention (Ireland) Act, 1908, and, in addition, 244 cases were notified voluntarily, making a total of 1173 cases dealt with by the Public Health Department. It is therefore clear that 351 beds for "sanatorium benefit" would not be enough, while under the Act as it stands at present the large Abbey Sanatorium would not be available, as Poor-law authorities are entirely outside the new insurance measure. Hence the Belfast guardians have waited upon the corporation health and finance committees with a view of obtaining for the Belfast district a portion of the capital sum allocated by Parliament for the erection of sanatoriums, as well as the yearly grants available for "sanatorium benefit" under the Insurance Act. The Belfast corporation will have to acquire the Abbey Sanatorium, becoming the responsible authority for it, having regard to the Insurance Act. If this was done an arrangement could be made for the treatment of non-insured and destitute consumptives by the guardians with the corporation similar to that already existing at Purdysburn for treatment of cases of infectious disease. If this is not done how is the Abbey Sanatorium to be maintained, and how is the city corporation to fulfil its duties as the health authority towards the consumptives, and finally, what action will the local Health Committee (to be formed under the Insurance Act) take? It is satisfactory to know that the joint corporation and finance committees are very carefully considering the matter, which presents considerable difficulties.

March 19th.

PARIS.

(FROM OUR OWN CORRESPONDENT.)

Election at the Academy of Sciences.

IN the Section of Medicine and Surgery of the Academy of Sciences a vacancy has arisen through the death of Professor Lannelongue. Many candidates of high rank presented themselves. The proper authorities presented in the first place M. Charles Richet, the well-known physiologist, professor at the Faculty of Medicine and member of the Academy of Medicine, and in the second place M. Delorme, Médecin Inspecteur-Général of the Army Medical Service; M. Le Dentu, M. Lucas-Championnière, M. Pozzi, and M. Reclus, all members of the Academy of Medicine. Two ballots were required. At the first M. Charles Richet obtained 26 votes, M Lucas-Championnière 25, M. Pozzi 4, M. Le Dentu 3, and M Reclus 1. At the second, out of 60 votes cast, M. Lucas-Championnière gained 32 and was declared elected. M. Charles Richet had 26 and M. Pozzi 2. The newly-elected academician is honorary surgeon to the Hôtel Dieu, a member of the Academy of Medicine, a former president of the International Society of Surgery, and is one of the most brilliant and authoritative exponents of French surgery. His first work was the study and the dissemination of antiseptic surgery—that is to say, of scientific surgery as initiated by Lord Lister. The application of scientific surgical doctrine to current surgery constituted his second work. To make this application it was necessary completely to transform the ordinary practice of surgery, and to formulate a technical method in place of the varied procedures of traditional surgery which were devoid of scientific guidance. The most important of his writings treat of trephining under the direction of cerebral localisation, the radical cure of hernia, the removal of the tarsal bones, and the treatment of fractures by mobilisation and massage. Moreover, M. Lucas-Championnière is the director of the *Journal de Médecine et de Chirurgie Pratiques*, in which he has published numerous surgical studies.

The Academy of Medicine.

The Academy of Medicine on March 12th elected M. Mesureur, Director of Public Assistance, Paris, a member in the free section in place of M. Henri Monod, deceased. M. Mesureur was elected by 54 votes, as against M. Castex, who received 25 votes.

A Protest against the Superior Commission for the Reform of Medical Studies.

A great meeting, organised jointly by the Corporate Association of Medical Students and the Syndicates of Practitioners, took place on March 9th in the hall of the learned societies The meeting unanimously protested against the composition of the Superior Commission for the Reform of Medical Studies, on which the practitioners are in an excessive minority, and which admits no delegates from the professional associations of students of medicine. They also protested against the mode of nomination of this commission, all the members of which are arbitrarily appointed by the Minister and not elected by their professional constituencies. They further protested against the *modus operandi* of this commission, whose duties are determined by no official decree, while it has delegated all its powers to a permanent subcommittee entirely in the hands of the administration; and against the mode of discussion of the commission, which from its first session regulates examinations bearing upon a course of instruction that it has not as yet defined.

The practitioners and the students finally demand the formation of a Superior Medical Council.

The Leave of Tuberculous Officials.

An article in the Finance Law of 1911 laid down that a law to be passed before Dec. 31st, 1912, would provide long leave of absence, with treatment and carrying the right to a pension, to officials of the public administration affected with tuberculosis. With a view of giving effect as quickly as possible to this humane intention, the Minister of Finance has appointed an Inter-Ministerial Commission, on which is imposed the task of collecting the necessary information on the subject and preparing a draft to be submitted to Parliament. As the question interests all the great administrations, this commission comprises officials of all the Ministerial departments.

The Preparation and Therapeutic Utilisation of Sulphurated Oils.

On Feb. 28th M. Huerre brought this subject before the Société de Thérapeutique. Sulphurated oils are obtained from the combination of sulphur and vegetable oils by the action of heat. The sulphurated castor oil is prepared by gradually raising the temperature of a mixture of precipitated sulphur and castor oil up to 225° C. It is a viscous liquid, containing from 6·5 to 7 per cent. of sulphur, and is very soluble in a large number of solvents, ethers, essences, acetone, chloroform, &c. This solubility permits of the preparation in a very manageable form of numerous medicaments used in dermatology, such as salicylic, pyrogallic, and chrysophanic acids, and resorcin in a sulphurated organic combination, which is always better tolerated by the skin than sulphur itself. These preparations have given good results in the dermatoses in which sulphur is indicated—pityriasis of the scalp, seborrhœic eczema, acne, &c.

The French Association of Medical Inspectors of Schools.

A new association has just been formed, the object of which is to bring into relation all the school physicians in France, to defend their professional interests, and to study questions relating to their functions. It consists of members (medical inspectors of French schools) and of associate members (school medical officers of the French-speaking countries and medical men generally interested in school medicine and hygiene). The annual subscription is 5 francs. The association is to meet this year at the end of May. The organisation of medical inspection in France and physical education will be on the orders of the day. The Congress will close with a fête organised by the medical inspectors of schools of the Seine.

The Collège de France.

The general assembly of professors of the Collège de France has forwarded for the selection of the Minister as candidates for the chair of histology (formerly the chair of anatomy, now vacant by the resignation of M. Ranvier) the names of first, Dr. Nageotte, professor at the École Pratique des Hautes Études, and second, Dr. Jolly, adjunct director of the same school. Two ballots were requisite, for at the first each candidate obtained 15 votes; at the second M. Nageotte obtained 18 votes and M. Jolly 15.

March 18th.

VIENNA.

(FROM OUR OWN CORRESPONDENT.)

A Tribute to the Memory of Lord Lister.

THE news of Lord Lister's death was received here with the utmost regret by the medical profession, and the Gesellschaft der Aerzte at once decided to hold a special meeting for the delivery of an address in which the ever-memorable results of his labours should be duly appreciated. Professor Fränkel, who was the chief speaker on this occasion, did not try to say anything new to his audience, who were all well acquainted with Lister's achievements, but he pointed out that some years before the introduction of antiseptic surgery two Austrian medical men had called attention to the importance of cleanliness and the avoidance of external contamination in the treatment of surgical diseases and wounds. One of these was Semmelweis, who in 1842 tried to eliminate the dangers of infection from obstetric practice, and the other was von Kern, who at the same time maintained that wounds became infected from the outside and might be kept healthy by covering them. Professor Fränkel observed that there was an important difference between these two and Lord Lister. Whereas his predecessors had merely a more or less intuitive notion of the right thing, Lister was not only capable of thinking out the whole problem, but he also found means of putting his ideas into practical execution. Professor Fränkel's audience included many distinguished personages, and his discourse had a very favourable reception.

Scarcity of Children's Hospitals in Vienna.

In this city there are far too few beds available for the hospital treatment of sick children, and it is a constant complaint of all medical and social workers that for this reason it is difficult to deal adequately with infectious diseases. The matter was recently brought into general notice by a letter in the public press, and the correspondence ensuing thereon disclosed the curious fact that in Vienna there are three hospitals intended for the treatment of children, but closed for lack of funds. Under the wills of three different persons, each of whom had bequeathed a certain sum for that purpose, three hospitals, one with 30 beds, one with 50 beds, and one with 100 beds (the last named is not completed yet), were built in the expectation that the funds for maintaining them would be forthcoming when required. In former years such hopes were justifiable, but nowadays it seems that charitable people are less frequent. So we have only the children's clinic with 56 beds, the Wilhelminen Spital with some 300 beds, one institute with 40 beds in the situation where the children's clinic formerly was, and two new hospitals which have been erected for diseases of children within the last five years, one with 100 beds and one with 120 beds. Moved by these unsatisfactory conditions, Mr. von Guttmeun has recently handed over a sum of three millions of kronen (£120,000) to the Jewish community of Vienna, for the purpose of erecting and maintaining a children's hospital on a large scale, for patients of all nations and creeds, and he has given permission that all other funds granted for the purpose of children's hospitals may be united with his grant, as he does not wish his name to be associated with any ward or cot or building.

The Dispute between the Rettungsgesellschaft and the "Medical Organisation."

As was explained in this column on Jan. 13th last, serious differences of opinion had then arisen between the "Medical Organisation" of Vienna and the Rettungsgesellschaft (First Aid Association), also of this city. Things went so far that a boycott of the association by the Vienna practitioners was contemplated. The main objects of conflict were questions of principle. The Rettungsgesellschaft was unwilling to regulate its scale of medical fees, and its other rules as regards medical service, according to the lines laid down by the Medical Organisation. The controversy was so serious that several lawsuits were commenced, but the two parties fortunately came to an understanding before the courts had an opportunity of intervening, and all quarrels have now been amicably arranged. This result has been received with great satisfaction by the profession in general, for the dispute between the two medical corporations was regarded by all as most inappropriate, to say the least. The Medical Organisation is now recognised by the Rettungsgesellschaft as being the duly accredited representative of the medical practitioners, and the latter's scale of fees has been satisfactorily adjusted.

A Popular Lecture on Tuberculosis with Kinematographic Illustrations.

The board of health recently made an interesting experiment by using the kinematograph to illustrate a popular lecture on the nature, spread, and prevention of tuberculosis. In the course of this lecture, which was intended for the information of the people, Dr. Winter, one of the public health officers of Lower Austria, showed moving pictures that represented first the unhealthy surroundings of the poorer classes which are so favourable to the communication of the disease, and, secondly, the hygienic conditions of a sanatorium. The pictures were at the same time explained by the lecturer. Several pathological specimens were then shown, including the early stage of lupus, its treatment, and the favourable results obtainable in early cases, as

well as examples of tuberculosis of the joints and bones. The methods of treatment in the open-air sanatoriums were demonstrated, and the public were shown how a good supply of fresh air could be insured by proper arrangement of the windows. This novel form of popular instruction in medico-hygienic matters will no doubt prove useful, for a combination of lectures and visual demonstrations has many advantages over purely theoretical teaching.

March 16th.

ITALY.

(FROM OUR OWN CORRESPONDENT.)

Alessandro Codivilla.

THE Bologna school has lost one of its chief ornaments in this accomplished and versatile surgeon, to whom orthopædy is indebted for not a few of its most ingenious and effective appliances. A Bolognese by birth, he was educated at the celebrated Archiginnasio, enrolling as a student of medicine and graduating with distinction in 1886, when in his twenty-fifth year. In 1889 his skill in the operating theatre and his expository power in the lecture-room procured him rapid promotion in various surgical institutions, notably in those of Macerata and Imola, till in 1890 his fertility of resource and well-nigh uniform success in relieving the defects, infantile, congenital, or accidental, of the apparatus of locomotion, marked him out as successor to Professor Panseri as director of the famous Istituto Rizzoli in Bologna. Here he found his special *métier*, and so improved on the traditions, already honourable, of the institution as to make it a centre not only of relief or rehabilitation to its young inmates but of instruction, not to say inspiration, to those interested in orthopædy, theoretical and practical. At the periodical congresses of surgery his presence never failed to enhance the interest and value of the proceedings, and not a few of his papers, read and discussed on these occasions and since published in a permanent form, have passed into the literature of the profession. His success in treating or in rehabilitating the wounded from the seat of war in Tripoli, conveyed as many of these were to Bologna so as to be under his eye, evoked the admiration of his colleagues as well as the gratitude of the patients, and proved a manifest consolation to him during the painful illness to which he has so prematurely succumbed.

The Guido Baccelli Ambulance at Tripoli.

Of this institution, called after its initiator and organiser, known throughout Italy as "Dean of the Faculty of Medicine," there are four sections devoted to the care and cure of the natives injured or ailing at the seat of war. All the indigenous population of Tripoli are eligible for treatment; first, in the Medical Section, directed by Captain Scaloso of the Army Medical Staff; second, in the Surgical, directed by Captain Bevacqua, of the same corps; third, in the Ophthalmic, directed by Captain Mazza; and fourth, in the section set apart for oto-rhino-laryngeal maladies, directed by Captain Tonietti, also, like the three others, of the Medico-Military Department. The services offered are gratuitous, available every day of the week from 9 to 12 A.M. and from 4 to 6 P.M. In addition to this there will soon be opened a special "ambulatorio" for syphilitic diseases, to be superintended, like the four sections above referred to, primarily by General Salsa, and secondarily by the various "servizi sanitari" and the *personnel* of the "Amministrazione degli Instituti Ospedalieri." Premises for "first aid" are well advanced in construction. Further, in the same laudable direction there will shortly be made available a set of rooms for disinfection, for baths, for mortuary requirements, including necropsy, with laundries, and accommodation for the *personnel* of the administration. All these additions to the "Ospedale Civile," fully equipped and up to date in every particular, will soon be in working order, constituting a substantial boon to the native population and of happy augury for the future of the Tripolitania, when, as is anticipated, it will come finally under the legislative control of the Italian kingdom.

March 14th.

THE CREMATION SOCIETY OF ENGLAND.—The annual meeting of subscribers will be held at 20, Hanover-square, London, W., on Wednesday, March 27th, at 3 o'clock.

CONSTANTINOPLE.

(FROM OUR OWN CORRESPONDENT.)

The New Austro-Hungarian Hospital.

THIS institution was erected at the cost of £65,000, a large proportion of which was contributed by the Austro-Hungarian Government. At present it has a State subsidy of 70,000 kronen per annum (a krone = 10*d.*). It is equipped with every modern convenience and requisite and commands one of the finest sites in the metropolis. The thing that especially strikes a visitor is the abundance of space and light in the whole hospital. There is not a single obscure corner; everywhere plenty of light floods in through the many high, broad windows. The whole establishment is constructed on hygienic and sanitary principles, and the cleanliness in a city like Constantinople is particularly worthy of mention. The view from the windows over the Bosphorus, the Asiatic shore, and the undulating cypress-clad hills all around is superb. The material for the building, as well as the internal surgical and medical equipment, were furnished by firms in Vienna. The hospital has 60 beds, but this number can be increased. Half of the hospital is occupied by the surgical department; the other half is for medical cases; and there is also a separate building for infectious cases. A suite of rooms is reserved for private baths for the outside public. Two members of the medical and surgical staff, Dr. Schuster and Dr. Ehrlich, possess diplomas from the University of Vienna. A lady doctor, Fräulein Frisch, is also on the staff. Women are, of course, not allowed to practise medicine in Turkey, but this hospital is on Austro-Hungarian territory and outside the Ottoman medical jurisdiction. Fräulein Frisch is doing excellent work under the protection of her Government. The hospital possesses two automobiles, one for ambulance purposes and one for the use of the staff.

The War Refugees from Tripoli.

It has been found that almost all the refugees from Tripoli are suffering from various chest affections. Quite a large number have developed pneumonia, and bronchitis is very common. There are also several cases of phthisis. Investigation showed that the refugees, mostly Arabs, are unable to stand the wintry weather prevailing in Constantinople at present. It has therefore been decided to send all the sufferers further south, where the climate is warmer, to such places, for instance, as Beirut. The Ottoman Government has granted a special sum of money for this purpose.

Lectures on Hygiene.

In order to spread among the population a knowledge of hygiene and sanitation the medical authorities of the hospital of Gulhaneh, in Stamboul, have decided to arrange an exhibition and to deliver a free course of lectures. In the rooms to be assigned for this exhibition there will be on view a large number of statistical tables and sketches showing the causes of disease, as well as microscopical preparations. It is intended also to give instruction in the bringing up of children and in the care to be taken during an outbreak of infectious diseases. These lectures should help to remove the gross superstition and ignorance of the lower classes of the population, provided, of course, that the design is not left to the chances of kismet.

The Recent Fires at Stamboul and Balat.

The private subscriptions for the sufferers from the recent great fires in Stamboul and Balat have produced the sum of over £75,000, a large proportion of which came from Great Britain. Exceedingly little of that sum has been distributed among the burnt-out. Continual complaints are brought forward to the effect that the destitute are starving and are exposed to the inclemency of the wintry season without receiving any help whatever. If some small assistance is given here and there, the formalities are so intricate that the poor are losing heart completely. I have made inquiries and was told that the bulk of the contributions is reserved for the construction of fire-proof dwelling-places. In the meantime the need of the burnt-out is very great indeed Mention should be made of the prompt and generous help given to the sufferers by the British Ambassador, Sir Gerard and Lady Lowther.

Feb. 20th.

UNITED STATES OF AMERICA.

(FROM OUR OWN CORRESPONDENTS.)

The Substitution of Saccharine for Sugar in Prepared Foods Prohibited.

¶ THE Board of Cabinet Officers of the United States Government charged with the enforcement of the pure food laws has rendered a final decision against the use of saccharine in prepared foods, thus settling a controversy of almost four years' duration. This decision is based on the Remsen Board's report that the addition of saccharine to food, as a substitute for sugar, "must be regarded as a substitute involving a reduction in the food value of the sweetened product, and hence a reduction in its quality."

Factory Investigation.

In the New York State Senate, on Feb. 28th, a Bill to continue the Factory Investigation Commission for another year and to give it an additional appropriation of $60,000 was passed. The object of this Commission, which was created last year after a disastrous factory fire in New York in which many workpeople were killed, was to investigate the conditions prevailing in factory buildings in the city.

The Quarantine Situation in New York.

The Governor of New York State has nominated Dr. Joseph J. O'Connell, of Brooklyn, to succeed Dr. Alvah H. Doty as port health officer of New York. Though a distinguished neurologist, Dr. O'Connell is without experience, so far as is known, of sanitary or quarantine problems. Assistant Surgeon-General L. E. Cofer, of the Public Health and Marine Hospital Service, after explaining recently at the New York Academy of Medicine that 44 ports of the United States were under exclusive Federal control, pointed out that, on emergency—e.g., the prevalence of cholera last summer—the Federal Government invariably sent to New York and the other ports under State control a surgeon of the Public Health and Marine Hospital Service to supervise matters. Mr. William Williams, Commissioner of Immigration, also a Federal official, at the same meeting of the Academy, pointed out that all immigrants, after the State inspection, have to undergo detention until any latent disease has had time to develop, and the immigrant is not permitted to go ashore until it is certain that no such disease exists. While the health office of the port of New York, therefore, remains a sought-out pecuniary prize, the salary being £3200 per annum, the importance of the appointee to the welfare of the community is less than has hitherto been thought. The other ports of the United States under local control are Baltimore, Providence, Philadelphia, and Boston, in all of which the Federal Government intervenes in time of need; and all will in time become subject to central control alone. Dr. Doty's services are not to be lost to New York, for, as health officer of the port, he was, *ex officio*, a member of the Department of Health, and he has now been elected a member of the advisory board of the Department.

Vindictive Baby Poisoning.

A young woman-of-all-work in the Infants' Hospital of the Brooklyn Nursery was arrested on Feb. 24th on the charge of having poisoned eight babies in the institution by putting oxalic acid in their milk bottles. The young woman, who has a baby of her own, confessed the crime, stating, however, that she had no intention of killing the infants, but merely wished to create a disturbance and trouble for the nurses in return for slights she had received. Twenty-two other infants in the hospital escaped by the accident of a door slamming while the woman was putting the acid into the bottles, frightening her so that she withdrew from the refrigerator in which the bottles and sterilised milk were kept. The woman's antecedents are bad and she is pregnant.

A Doctor's Suit Against the Mayor of New York.

Some time ago Mayor Gaynor, of New York, was shot while he was on the deck of a steamship about to sail for Europe. As the steamer docked in the North River, on the New Jersey side, the victim was taken to a New Jersey hospital. The house surgeon of this institution rendered a bill for £1500. The New York Board of Aldermen tendered £500, which sum was refused. The surgeon now claims £2600, and when the mayor recently went to Atlantic city (a popular New Jersey seaside resort) had a summons served upon his patient. A summons of this kind cannot be served across State lines. The suit will be contested on the ground that the surgeon was only accidentally called into the case in the emergency, and was not engaged either by the mayor or any of his friends.

Portrait of Dr. Wyeth Presented to the New York Academy of Medicine.

On the evening of Feb. 15th a portrait by Mr. J. Campbell Phillips of Dr. John A. Wyeth was presented to the New York Academy of Medicine. The presentation was made on behalf of the Academy by Dr. Simon Baruch.

Outbreaks of Cerebro-spinal Meningitis.

Dr. Abraham Sophian, of the New York Department of Health, has returned from Texas, where an epidemic of spinal meningitis has been raging, 300 cases having occurred in one month in the city of Dallas alone. About 45 per cent., rather more than half the usual percentage, of the cases were in children. Dr. Sophian attributes the success in stamping out the epidemic to the promptness with which patients, rich and poor alike, were removed to hospitals, and to the use of the antimeningitis serum prepared by the Health Department in New York, with which he inoculated 3500 patients. The general mortality was about 10 per cent., but only from 5 to 6 per cent. in children, the percentage being raised by the large proportion of patients over 60 years of age and the many negroes infected.—Cerebro-spinal meningitis is also reported to be spreading in Oklahoma. The disease has appeared in 30 counties of the State and there have been 187 cases with 67 deaths.

Mortality among Alaska Indians.

Passed Assistant Surgeon Foster, of the Public Health and Marine Hospital Service, returning from a tour through Southern Alaska, has informed Congress that at least £14,000 will be required for additional medical work among the Indians of that section. The birth-rate for the past five years and seven months has been 72·3 per 1000, while the death-rate has been 85·4. During the last ten years there has been a decrease in the Indian population of about 14 per cent. The large mortality is due mainly to tuberculosis, which always attacks tribes recently rescued from savagery and put into civilised clothing and dwellings. If the present proportion of deaths to births is not modified, the tribes will be extinct in about 60 years.

Vaccination and Small-pox in the Philippines.

Recently-published statistics show that small-pox has been practically eradicated from the United States Army in the Philippines. In 1898, 10,000 American soldiers in the islands had 76 cases of small-pox, a case-rate of 7·67 per 1000; deaths numbered 21, a mortality-rate of 2·12 per 1000. In 1910, among 12,277 soldiers, only 2 cases of small-pox occurred, and both recovered. In the earlier years of American occupation many of the soldiers were volunteers, among whom it was difficult to enforce vaccination. Moreover, the vaccine brought from San Francisco and Japan became inactive in the warm climate. On the introduction of fresh lymph from Carabao calves in 1900 the great prevalence of small-pox among the troops quickly subsided.

March 9th.

DONATIONS AND BEQUESTS.—Among the large bequests under the will of the late Lord Wandsworth are the following:—£10,000 to be used for medical research "as my friend and doctor Sir William Bennett shall decide is best," £5000 to the Bolingbroke Hospital, Wandsworth Common, S.W., £1000 to the London Hospital, £1000 to St. George's Hospital, and £500 to the Brompton Hospital for Cancer.—The late Mr. James Cook has left a sum amounting to nearly £50,000 to be equally divided between the Taunton and Somerset Hospital, the Bridgwater Infirmary, and the Royal West of England Sanatorium.—The late Mrs. Margaret B. Swaine has left her residence, The Highlands, Bexhill on Sea, to St. George's Hospital for a convalescent home. The residue of the testatrix's estate will be used for the endowment of such home if the hospital authorities accept the bequest.

Obituary.

SIR RICHARD BRAYN, M.R.C.S. ENG., L.R.C.P. LOND., L.S.A.,

LATE MEDICAL SUPERINTENDENT OF BROADMOOR CRIMINAL LUNATIC ASYLUM, AND HOME OFFICE EXPERT IN LUNACY.

Sir Richard Brayn, late medical superintendent of Broadmoor Criminal Lunatic Asylum and Home Office expert in Lunacy, whose death, after a short illness, in his sixty-second year, we announced last week, was the son of Mr. T. G. Brayn, of Market Drayton, Salop. He received his medical education at King's College Hospital, where he was successively first year, second year, and senior scholar, besides winning prizes in many special subjects. In 1875 Mr. Brayn was appointed assistant surgeon to H.M. Convict Prison, Portsmouth, thus commencing what was to be a distinguished career in the prison medical service, and more particularly in connexion with criminal lunacy. He later became assistant surgeon at H.M. Prison, Millbank, and in 1879 was promoted to medical officer of H.M. Prison, Pentonville; in 1882 he was moved to the invalid establishment at Woking, where he also had charge of the insane convicts.

In 1889 Mr. Brayn was appointed Governor and medical officer of the Female Convict Prison at Woking, which he retained until 1896, when he succeeded Dr. David Nicolson as medical superintendent of Broadmoor Criminal Lunatic Asylum on the latter being appointed Lord Chancellor's Visitor in Lunacy. He held this onerous and responsible post for over 14 years, becoming an acknowledged authority on criminal lunacy and one whose opinion was held in high esteem in all such matters. He was an excellent administrator and was indefatigable in his work, always having the interest of the asylum, both patients and attendants, at heart. He retired in 1910, the constant anxiety and responsibility having commenced to tell upon his health, but he was appointed, on his retirement, a member of the Council of Supervision, thus maintaining his interest in the asylum. He also continued to act as mental expert to the Home Office, which position he held up to the time of his death. He received the honour of knighthood in 1911.

He married Miss Laura Negus, daughter of Deputy Inspector-General Fysher Negus, R.N., who, with a son and a daughter, survive him, by whom, as also by his many friends, he will be greatly missed. The funeral took place at Southsea on March 15th, the first part of the service being held at St. Peter's, Somers-road. Amongst those of his old friends were Dr. Nicolson, Dr. Herbert Smalley, Medical Inspector of H.M. Prisons, who also represented the Prison Commissioners, and Dr. John Baker, the medical superintendent of Broadmoor Asylum.

DEATHS OF EMINENT FOREIGN MEDICAL MEN.—The deaths of the following eminent foreign medical men are announced:—Dr. Albert Schütze, of the German Red Cross Society, who had been serving in the Turkish Red Crescent Ambulance Hospital at Gharian, where he was in charge of the medical side, from typhus abdominalis, aged 39. He had distinguished himself as a bacteriologist in the Berlin Institute of Infectious Diseases, and had acquired the rank of professor of the university. During the Russo-Japanese war he served with the German Red Cross expedition, and was afterwards appointed by the Berlin city authorities head of the newly established Bacteriological Institute in connexion with the Moabit Hospital.—Dr. Windels, medical member of the Prussian judicature, aged 64. He was held in high esteem by the medical profession from his sympathetic action in its behalf.—Two German medical men have very recently died as the result of dissection wounds: Dr. Stark, of Lörrach, and Dr. Hermann Hahn, prosector of the Anatomical Institute of the University of Munich.—Dr. Andreas Mordtmann, one of the most popular medical men in Constantinople, where he had been for something like half a century. His father, who came from Hamburg, was for many years in business in Constantinople, so that when Dr. Mordtmann returned from Germany, where he had studied medicine in Berlin and Würzburg and had also acted as assistant in the Halle University Medical Clinic, he had an excellent introduction to various classes, both of Turks and foreigners, in the Turkish capital. Both he and his father were eminent linguists and orientalists.—Dr. Oskar Schreyer, railway surgeon to the Shantung line in China. He was murdered by revolutionary soldiers while endeavouring to assist the family of one of the European engineers.—Dr. C. J. van der Burcht van Lichtenberg, formerly inspecting medical officer of the Dutch army.—Dr. Triaire, of Tours, corresponding member of the Paris Academy of Medicine.—Dr. A. Stopezanski, formerly professor of chemistry in the University of Cracow.

Medical News.

ROYAL COLLEGE OF SURGEONS OF ENGLAND.—At a meeting of the Council of the Royal College of Surgeons of England, held on March 14th, the under-mentioned diplomas were conferred upon the following gentlemen who have now complied with the by-laws of the College:—

Diploma of Fellow.—Robert Coltart Harkness, M.B., Ch.B. Edinburgh, L.R.C.P., M.R.C.S., Edinburgh and Manchester Universities and St. Bartholomew's Hospital.

Diploma of Member.—John Walter Barron Hanington, M.D. McGill, McGill University and London Hospital.

Licence in Dental Surgery.—Walter Stanley Hoare, Middlesex and National Dental Hospitals; George Matthews, Guy's Hospital; William Macqueen Potter, Charing Cross and Royal Dental Hospitals; and Sidney Thomas Taylor, Middlesex and National Dental Hospitals.

UNIVERSITY OF BRISTOL.—At the second examination for the degrees of M.B., Ch.B., held in March, the following candidates passed:—

Alan Gabriel Bodman, John Wesley Gilbert, William Kenneth Armstrong Richards, Douglas George Clutsam Tasker, and Edward Scott White.

N.B.—This list is issued subject to its approval by Council.

FOREIGN UNIVERSITY INTELLIGENCE.—*Bonn:* Dr. Mathias Makkas has been recognised as *privat-docent* of Surgery.—*Catania:* Dr. Francesco Caruso has been promoted to the chair of Obstetrics.—*Genoa:* Dr. Luigi Massini has been recognised as *privat-docent* of Internal Pathology.—*Giessen:* Dr. Erich Opitz, of Düsseldorf, has been offered the Professorship of Midwifery and Gynæcology, in succession to Dr. von Franqué, who goes to Bonn.—*Kazan:* Dr. V. Boldyreff, of St. Petersburg, has been appointed to the chair of Pharmacology.—*Leipsic:* A new clinic for diseases of the ear, nose, and throat has been opened. Dr. Paul Frangenheim, formerly of Königsberg, has been recognised as *privat-docent* of Surgery.—*Lima:* The Medical School has recently been celebrating its centenary, as the first buildings were finished and opened during the latter part of 1811. Previously, however, there had been a professor of anatomy, Dr. Don Hypolito Unanue, and it was largely through his exertions that the school was founded.—*Lyons:* Dr. Lesieur, *agrégé*, has been appointed Professor of General Pathology and Therapeutics in succession to Dr. Courmont.—*Padua:* Dr. Carlo Mariani has been recognised as *privat-docent* of Operative Medicine.—*Prague (Bohemian University):* Dr. Josef Novotny has been recognised as *privat-docent* of Hygiene.—*Toulouse:* Dr. Soulié, *agrégé*, has been promoted to the chair of Anatomy in succession to the late Dr. Charpy.—*Tübingen:* Dr. Hans Kolaczek has been recognised as *privat-docent* of Surgery. Dr. Schlayer, *privat-docent* of Medicine, has been promoted to be Extraordinary Professor.—*Würzburg:* Dr. J. Sobotta has been appointed Extraordinary Professor of Topographical Anatomy.

PRINCESS ALICE MEMORIAL HOSPITAL, EASTBOURNE.—The Duke of Devonshire on Saturday evening, March 16th, presided at a complimentary dinner at Eastbourne given to the medical staff of the Princess Alice Memorial Hospital, all the original members of which are now on the retired list, "to show the governors' and their friends' appreciation of the noble and self-sacrificing work which these gentlemen have done for so many years, not only for the healing or relief of the sick poor in the hospital, but also, as an indirect result, for raising of the standard of health, and of medical and surgical efficiency, throughout the whole community." The toast of "The Original Members of the Medical Staff of the Princess Alice Memorial Hospital" was expressively submitted by the chairman and replied to by Dr. H. Colgate and Mr. H. D. Farnell.

THE University of London has received during the week an anonymous contribution of £100,000 towards the acquisition of a site on the Bedford Estate, and an offer of £60,000 to erect upon an approved site a Senate House and administrative offices.

SEVENTEENTH INTERNATIONAL CONGRESS OF MEDICINE (LONDON, 1913).—By a mistake the name of Professor Henri Hervieux, M.D., Laval University, Montreal, was omitted from our published list last week of the Canadian nominations to the council of the Section of Therapeutics of this Congress.

LITERARY INTELLIGENCE.—Mr. Heinemann draws attention to the fact that "Microbes and Toxins," by Dr. Etienne Burnet, of the Pasteur Institute, Paris, originally announced at the price of 6*s.* net, will be published at 5*s.* net. Professor Metchnikoff contributes an introduction to the book, which was published last week.

HUNTERIAN SOCIETY.—On Wednesday, March 27th, at 9 P.M., at the London Institution, Finsbury Circus, E.C., the annual discussion will be held, the subject being the Therapeutic Value of Alcohol. The debate will be introduced by Sir Victor Horsley, who will be followed by, among others, Dr. Fred. J. Smith, Professor A. R. Cushny, Mr. M. Cursham Corner, and Dr. J. Langton Hewer. Lantern-slide illustrations will be furnished, and all members of the medical profession are invited.

CHELSEA HOSPITAL FOR WOMEN.—At the forty-first annual general meeting of the governors of this charity, to be held at the hospital on Tuesday, March 26th, at 4 P.M., to receive the annual report, and to transact the ordinary business of an annual meeting, the important matter of the rebuilding of the hospital has been placed upon the agenda. The urgent reasons which have led the council to recommend this step and the King Edward's Hospital Fund to approve it will be submitted, and Lord Castlereagh, M.P., the president of the hospital, will supplement the statement.

NATIONAL INSURANCE ACT.—We understand that the following nominations have been made by the British Medical Association for election to the Advisory Committee under the Insurance Act: Dr. R. M. Beaton (London), Mr. E. B. Turner (London), Dr. T. M. Carter (Bristol), Dr. S. Hodgson (Salford), Dr. J. A. Macdonald (Taunton), Mr. J. Neal (Birmingham), Mr. D. F. Todd (Sunderland), Mr. T. Jenner Verrall (Bath), Dr. A. H. Williams (Harrow), Dr. John Adams (Glasgow), Dr. J. Munro Moir (Inverness), and Dr. E. O. Price.

Parliamentary Intelligence.

NOTES ON CURRENT TOPICS.

Nurses' Registration Bill.

MR. MUNRO FERGUSON has reintroduced his Nurses' Registration Bill in the House of Commons, where it has been read a first time. The object of the Bill is to regulate the qualifications of trained nurses and to provide for their registration. It is backed by Dr. ADDISON, Mr. PERCY ALDEN, Mr. BRYCE, Mr. DUNCAN MILLAR, Mr. SCOTT-DICKSON, Mr. REMNANT, Sir GEORGE YOUNGER, Viscount WOLMER, Mr. RAMSAY MACDONALD, Mr. FIELD, and Mr. KERR-SMILEY.

The Bill follows the same lines as the measure of last year. It proposes to institute a General Council for the Registration of Nurses in the United Kingdom consisting of 21 persons. Eight of these at least must be registered medical practitioners. One each is to be appointed by the Local Government Boards for England, Scotland, and Ireland. Three are to be chosen by the British Medical Association and one by the Medico-Psychological Association. The medical superintendents of the fever hospitals which may be recognised as training schools for nurses in fever nursing under the measure are given the right to erect a medical man as their representative. Three members are to be nominated by the Privy Council. Eight representatives are accorded to registered women nurses. Registered male nurses may elect either a medical man or one of themselves, and registered mental nurses are also given a representative. A provisional council is set up by the Bill for the purpose of bringing the measure into operation.

After providing for the setting up of a Register of nurses, the Bill proceeds to define the duties and powers of the Council. Clause 10, which deals at length with this matter, is in the following terms:—

"Subject to the provisions of this Act the duties and powers of the Council shall be as follows: (1) To frame rules—(*a*) regulating their own proceedings; (*b*) regulating the issue of certificates of registration and the conditions of admission to the register of nurses; (*c*) regulating and supervising the course of training and the conduct of examinations and the remuneration of the examiners; (*d*) regulating the admission to the register of persons already in practice as trained nurses *at the commencement of this Act*; (*e*) regulating and supervising and restricting within due limits the practice of registered nurses; (*f*) defining the particulars required to be given in any notice under this Act: (2) to appoint examiners and inspectors: (3) to decide upon the places where and the times when the examinations shall be held: (4) to issue and cancel certificates of registration: (5) to publish annually a register of nurses containing the names, addresses, and qualifications of nurses who have been duly registered under this Act: (6) to decide upon the suspension or removal from the register of the name of any nurse for any breach of the rules and regulations from time to time laid down under this Act by the Council, or for conduct disgraceful in a professional respect, and also to decide upon the restoration to the register of the name of any nurse so suspended or removed: (7) to take proceedings against persons guilty of offences under this Act; and generally to do anything necessary for the due and proper carrying out the provisions of this Act. No rules made under this section shall have effect until the same shall have been approved by the Privy Council, and the Privy Council may approve the rules either without or subject to such modifications as the Privy Council think proper."

Existing nurses may obtain admission to the Nurses Register on the production of satisfactory evidence of training, coupled with three years' experience of nursing. After three years only persons who comply with the requirements of Clause 12 are to be registered. That clause is as follows:—

"At the expiration of the said term of three years any person who claims to be registered under this Act shall be entitled to be so registered, provided that such person has had not less than three years' training under a definite curriculum prescribed by the Council in the wards of a hospital or of hospitals approved of by the Council, or in an institution or institutions which the Local Government Board recommend and certify to be wholly or partly maintained out of rates, or has been trained as a nurse under regulations authorised by the Lords Commissioners of the Admiralty for the sick berth staff of the Royal Navy, or as a nurse under regulations authorised by the Army Council for soldiers of the Royal Army Medical Corps for such term as may be fixed by the Council, and that such person has passed such examination as the Council may prescribe."

The Nurses Register, according to Clause 15, will comprise (1) a general register of women nurses; (2) a supplementary register of male nurses; and (3) a supplementary register of asylum-trained nurses.

The name and description of "Registered Nurse" is specifically appropriated by the Bill to persons actually on the Nursing Register. Persons wrongfully holding themselves out as registered nurses are made liable to a fine not exceeding £10.

A clause has been inserted in the Bill laying down in precise terms that nothing contained in it shall be considered as conferring any authority to practise medicine or to undertake the treatment or cure of disease.

Feeble-minded Persons (Control) Bill.

MR. STEWART'S Bill to provide for the better care and protection of feeble-minded persons has been printed. It is an indication that the mind of Members of Parliament of all parties is being directed to this important subject.

The scheme of Mr. STEWART'S proposals is to vest in the Commissioners in Lunacy the power to license any "home, residential school, institution, colony, or house" for the purpose of the detention of persons certified as feeble-minded under the provisions of the Bill. Clause 8, which in some respects is the most important in the Bill, deals at length with the procedure for the removal of the feeble minded to these licensed institutions. Its terms are as follows:—

"Any stipendiary magistrate or justice of the peace may, upon application being made to him, order the removal of the feeble-minded person in respect of whom such application is made to any home, residential school, institution, colony, or house licensed or registered under this Act and named by the person making the application, provided always that the stipendiary magistrate or justice of the peace is himself satisfied that such feeble-minded person has attained the age of 16 years and is in need of further protection, care, and control, and is a source of injury and mischief to himself or others, and provided that the feeble-minded person in respect of whom application is made has been independently examined by two registered medical practitioners, who shall furnish certificates in writing in the form set out in the First Schedule of this Act to the stipendiary magistrate or justice of the peace to whom application is made." For the purposes of this section application may be made by the following persons, who shall give their information upon oath:—(1) The parent, guardian, or any relative, who has attained the age of 1 years, of the alleged feeble-minded person; (2) the relieving officer or overseer of the parish to which the alleged feeble-minded person shall have become chargeable; (3) any responsible person above the age of 21 years: Provided always that any stipendiary magistrate or justice of the peace, in respect of any case coming before him in his judicial capacity, although no application has been made under

this Act, or otherwise, may call to his aid two registered medical practitioners, and issue an order in accordance with the provisions of this Act for the detention of the feeble-minded person who has been brought before him, provided that the medical practitioners shall have furnished certificates in writing as set out in the First Schedule of this Act, and the stipendiary magistrate or justice of the peace may remand such feeble-minded person certified under this Act to any workhouse or home pending his or her removal to a home, residential school, institution, colony, or house licensed or registered under this Act. Any application made under this section shall be considered in private, and no one, except the applicant, the alleged feeble-minded person and his representative, and the persons signing the medical certificates accompanying the application shall, without the leave of the judicial authority, be present at the consideration thereof. The relieving officer of any parish shall apply to the stipendiary magistrate or justice of the peace for an order to be granted in respect of any person found wandering in that parish, and without care and control, if he is satisfied that such person is a fit and proper person for detention under this Act."

By Clause 9 no feeble-minded person above the age of 16 who has been so certified by two medical practitioners shall be received or detained in a licensed institution unless upon a magistrate's order. No feeble-minded person who has attained the age of 21 years shall be detained for a period exceeding 18 months from the date upon which he has attained such age unless on the written authorisation of the Commissioners in Lunacy. These Commissioners have also wide powers of inspection, visitation, and control. The rights of parents, guardians, and relatives to take charge of feeble-minded persons are maintained.

The form of the medical certificate referred to in Clause 8 is set out in the First Schedule. It reads as follows:—

"I, *A. B.*, a person registered under the Medical Act, 1858, and in the actual practice of the medical profession, do hereby certify that I have carefully examined [*name*] of [*state address*] , and am of opinion that the said [*name*] is feeble-minded, and requires detention as provided for by the Feeble-minded Control Act, 1912, for his own benefit or for the benefit of the public at large.

"I further certify that I have formed this opinion on the following grounds:—(*a*) Evidence of feeble-mindedness. (*b*) Evidence of the absence of proper care and control. (*c*) Evidence as to being a source of injury and mischief to himself or others.

"*Note.*—This may consist either of facts observed by the medical practitioner or of facts supplied by others. When the information is supplied by others it is to be so stated, together with the names and addresses of persons supplying the information.

Signed .....
Address.....
Date ....."

It should be noted that the measure is a private Member's Bill, and is one for which the Government take no responsibility.

Medical Inspection of Schools.

In the report of the Board of Education for the year 1910–11, which has just been presented to Parliament, attention is drawn to the medical inspection of schools. It is stated that the chief medical officer of the Board has dealt in a separate report with the subject as it affects elementary schools. Some comments on the matter as it relates to secondary schools are contained in the Blue-book now issued. It appears from it that systematic provision for medical inspection has been instituted in a considerable number of secondary schools. "From the reports of school medical officers, some of which are regularly printed and issued," the report proceeds, "a large body of material is being collected which will form the basis for a general review of the work, and which will be fertile both in information and in suggestion. On the whole, it appears that systems of medical inspection are based on a similar plan, but with considerable divergence in detail. The inspection is in some cases compulsory, in others optional, and it takes one or more of the following forms: (*a*) inspection on admission, (*b*) periodic inspection during school life, and (*c*) special inspection of cases calling for particular attention. Various methods are in use with regard to the keeping of records, communication with parents, and the connexion with the medical inspection of the arrangements for physical exercises, whether ordinary or remedial. It is needless to discuss the advantages of systematic medical inspection of school children. It may be specially noted that, as regards secondary schools, such inspection is largely the continuation of care for children's health after they leave the elementary schools, for the majority of them are the same children. On Jan. 31st, 1911, 88,256 boys and girls in the grant-earning secondary schools in England, or a little over 60 per cent. of the whole number of pupils in attendance, were ex-public elementary school children. Out of the 862 secondary schools in England on the grant list on Jan. 31st, 1911, there were 581 in which this proportion was over 50 per cent., and in 237 of these it was over 75 per cent. It is wasteful that the benefit of systematic medical inspection should be withdrawn from children merely because they have passed from one kind of public school into another. And the importance of this consideration is greatly enhanced by the fact that the transference takes place when the children are approaching a critical stage in their physical development—a stage in which the risk of over-pressure tends to increase, and in which continuity of treatment is more than ever necessary if the benefit of previous care is not to be largely thrown away."

HOUSE OF COMMONS.

WEDNESDAY, MARCH 13TH.

Sleeping Sickness in Nyasaland.

Dr. CHAPPLE asked the Secretary of State for the Colonies whether he could state how many deaths had taken place from sleeping sickness, how many deaths from trypanosomiasis in domestic animals, and how many trade routes been closed in Nyasaland since the Colonial Office was first advised to relax the big game laws in the interest of humanity and commerce; and whether, if he was not yet satisfied with the evidence that game was a reservoir and Glossina morsitans a carrier of the germ of the disease, he would induce the big game hunters to submit to a temporary sacrifice by yielding to a relaxation of the game laws in the interest of human life and British trade by the promise that the restrictive laws would be reimposed if game and tsetse were proved to be innocent.—Mr. L. HARCOURT replied: The total number of cases of sleeping sickness recorded in Nyasaland up to the end of 1911 was 57, of which 21 are known to have died. I am not in possession of any statistics to show how many domestic animals had died from trypanosomiasis and I am not aware that any trade routes have been closed. My honourable friend assumes that a relaxation of the big game laws is in the interest of humanity and commerce—that is to say, that the presence of the large wild animals and of these alone is prejudicial to human life and to trade, presumably by their bringing the tsetse-fly with them. But it has not been shown that if these animals were to disappear the fly would disappear also, and in any case many animals would remain on which the fly could feed. In the island of Principe, where the fly abounds, there is no big game. The Governor of Nyasaland is in communication with Sir David Bruce, who is at work in his laboratory in the sleeping sickness area in the Protectorate, and I have instructed him to furnish me with definite recommendations as to preventive measures of any kind as soon as Sir David Bruce is in a position to make them. I shall not hesitate to take any steps, however drastic, so soon as the necessity is proved.

Mr. MITCHELL-THOMSON: May I ask the right honourable gentleman whether it will be possible to lay papers on the subject on the table of the House?—Mr. L. HARCOURT: Yes, sir.

The Plague in India.

Mr. CHANCELLOR asked the Under Secretary of State for India whether he would give the latest returns concerning the plague in India, the district most affected, and whether the death-rate, compared with the corresponding period of the previous year, was declining.—Mr. H. LEWIS (on behalf of Mr. MONTAGU): The latest return of plague mortality is for the month of January, 1912. The deaths were 49,229, against 91,434 in January, 1911. The areas most affected are the United Provinces of Agra and Oudh, the Hyderabad State, and the Bombay Presidency. As far as can be judged at present the disease is less virulent than in the preceding year, but there are still two months before the period of maximum intensity will be reached.

Education (Provision of Meals) Bill.

Mr. JOWETT, in moving for leave to introduce his Education (Provision of Meals) Act Amendment Bill, stated that its object was to empower the education authority to continue the school meals throughout holidays and even on Sundays. He said that the report of Sir George Newman, chief medical officer of the Education Department, was in itself quite a sufficient reason for the passing of this Bill. Sir George Newman in his report mentioned various experiments that had been carried out by the local authorities, which showed the need for the feeding of school children being continued during the holidays. Amongst the experiments was one carried out by Dr. Ralph Crowley, of Bradford, whose experiments showed that during the time the children were on holiday, instead of receiving benefit, they became actually physically less fit because they were not having the school meals.

Leave having been granted, the Bill was brought in and read a first time.

Insanity in Ireland.

Mr. GINNELL asked the Chief Secretary to the Lord Lieutenant of Ireland whether he could state the number of the persons during the last five years in Ireland certified by medical practitioners as insane who were released as sane within 12 months; the total cost to asylums in respect of those persons; whether he was aware that a rule of the Local Government Board allowed no fee to be paid to the examiner unless he gave a certificate of insanity; and whether, in the interest of ratepayers, he would have that rule altered and a fee paid for the examination, irrespective of its result.—Mr. BIRRELL wrote in reply: It is presumed that the honourable Member's question refers to the district and auxiliary asylums. The number of persons during the five years 1906–10, the latest date for which information is available, in Ireland certified by medical practitioners as insane who were released as sane (recovered) within 12 months was 5506. The cost to asylums in respect of these persons cannot be given, as the record of their cost is not kept distinct from that of the other patients. The Local Government Board has made no rule such as that suggested in the question. The majority of admissions to Irish public asylums are effected under the tenth section of the Act 30 & 31 Vic. Cap. 118. The payment of such fee in such cases is regulated by the fourteenth section of the Act 38 & 39 Vic. Cap. 67, which leaves the matter at the discretion of the committing magistrates.

THURSDAY, MARCH 14TH.

Medical Referees in Scotland.

Mr. WATT asked the Secretary of State for the Home Department to state how many medical men had been appointed in Scotland, under the Workmen's Compensation Acts, to sit as assessors along with sheriffs and sheriffs-substitute in dealing with cases under these Acts; whether it was a condition of their appointments that they shall not act in similar cases as expert medical witnesses; and, if not, would he make it a condition in future appointments.—Mr. MCKENNA said in reply: There are 84 medical referees appointed under the Workmen's Compensation Act for Scotland, and in 1910 they sat as assessors on 192 occasions. The Act prohibits a referee from acting in any case in which

he has been employed as medical practitioner, and the Home Office regulations forbid medical referees as a general rule acting privately in any case in which the workman is receiving a weekly payment for compensation or which is otherwise likely to come before a referee in the district for which he acts. I believe that these instructions are usually observed. It has not been found practicable to impose any further restriction on the medical referees.

The Insurance Act.

Mr. ORMSBY-GORE asked the Secretary to the Treasury, whether the National Insurance Commission (Wales) had taken any steps to secure the establishment of provisional local health committees in the Welsh counties and county boroughs, in view of the number of points which must be decided by the local health committees the moment the Act came into force in four months' time.—Mr. MASTERMAN answered: The steps required to secure the establishment of local insurance committees in Wales are under the consideration of the Welsh Commissioners.

Viscount WOLMER asked the Secretary to the Treasury whether, in view of the fact that small Friendly Societies in the country were finding considerable difficulty in accommodating their constitution and management to the conditions of the National Insurance Act, the Insurance Commissioners would arrange that the Act should not come into force until the last possible date, that is, Jan. 1st, 1913.—Mr. MASTERMAN replied: The answer is in the negative. The Commissioners are offering every assistance to all societies by the supply of information through lectures, by the issue of model rules and other literature, and by correspondence and interviews in their office. There is no doubt that it is in the interest of all classes of the community, and especially members of existing Friendly Societies, that the Act should come into operation at the earliest possible moment—i.e., on July 15th, 1912.

The Marquis of TULLIBARDINE asked the Secretary to the Treasury whether any part of the contribution payable by the workman, the employer, or the State under the National Insurance Act was available for the provision of sanatorium benefit for the wives and children of insured persons; and, if not, how was such treatment to be provided.—Mr. MASTERMAN answered: Under section 17 (1) insurance committees may extend sanatorium benefit to the dependents of insured persons. In such cases the cost of their treatment may be met from the general funds available for sanatorium benefit. These include the sums specified in section 16 (2) (*a*) which are contributed jointly by employers, employees, and the State, the sums specified in section 16 (2) (*b*) which are contributed by the State, and any further sums which may be provided under section 17 in equal moieties by the State and local authorities.

MONDAY, MARCH 18TH.

Blackpool Small-pox Hospital.

Mr. SUTTON asked the President of the Local Government Board whether he had been asked to sanction the conversion of the small-pox hospital maintained by the borough of Blackpool and the districts of Fylde, Preston, and Garstang into a sanatorium for tuberculous patients on the ground that it had never once been used since its erection ten years ago; if so, whether he had given the consent requested; and whether the result of the neglect of vaccination, through the Vaccination Acts of 1898 and 1907, had been to make small-pox liability less than had ever before been known in Great Britain.—Mr. BURNS replied: With regard to the first part of the question I received an application from the joint board, who maintain the hospital referred, to for an order to empower them to treat cases of pulmonary tuberculosis at the hospital, and a local inquiry was held in regard to it. The inspector who visited the site of the hospital reports that it is not suitable for the treatment of pulmonary tuberculosis, and I have informed the joint board that I do not propose to make any order in the matter. With regard to the second part of the question I prefer to express no opinion.

Testing Milk for Tuberculosis.

Mr. MOUNT asked the President of the Local Government Board whether he was aware that samples of milk for the purpose of testing for tuberculosis had been of late taken from churns arriving in London without first mixing the milk; and whether, in view of the fact that this abstraction of the cream would prejudically affect the milk if it were afterwards tested for fat, he would give instructions that no samples should be taken in future unless the milk was properly mixed.—Mr. BURNS answered: I am advised that the method of taking the samples is such that the percentage of fat in the milk is not likely to be altered to any material extent.

Preservatives in Milk.

Mr. CHARLES BATHURST asked the President of the Local Government Board whether he proposed in the Board's regulations for the restriction of the use of preservatives in milk and cream to prohibit the use of formalin as a preservative of cream, but to permit the use for that purpose of boric acid, biborate of soda, and other like antiseptics deemed by medical experts to have an injurious effect upon the nervous system; whether, and for what reason, his expert advisers differentiated between these various adulterants; and whether sterilisation and keeping under suitable atmospheric conditions would in their opinion render unnecessary the use of all such preservatives.—Mr. BURNS said in reply: The draft regulations which I have had prepared propose to prohibit the use of formalin in cream, but not to prohibit the use of boric acid, borax, or a mixture of those preservative substances, provided that a full declaration of the presence of the preservative and the amount added is made in the manner prescribed by the regulations. The considerations which have been taken into account in framing the draft regulations in question are dealt with in Dr. Hamill's report to the Local Government Board respecting the use of preservatives in cream.

The Adulteration of Flour.

Sir JOHN LONSDALE asked the President of the Local Government Board whether his attention had been called to the fact that materials for the adulteration of flour were being advertised and used by millers throughout the country; and whether, having regard to the fact that the introduction of many of these substances into flour was prejudicial to the public health, he would give an undertaking to introduce immediately legislation for the purpose of putting a stop to this practice.—Mr. BURNS answered: Section 3 of the Sale of Food and Drugs Act, 1875, provides that no person shall mix any article of food with any ingredient or material so as to render the article injurious to health with intent that the same may be sold in that state The penalty for a first offence against this enactment is a fine not exceeding £50, and for a subsequent offence imprisonment not exceeding six months. This section seems to me to deal with practices such as are described in the honourable baronet's question.

WEDNESDAY, MARCH 20TH.

Medical Men and the Insurance Act.

Sir PHILIP MAGNUS asked the Secretary to the Treasury whether he could state the present position of the negotiations between the Insurance Commissioners and the representatives of the medical profession; whether any reply had been sent to their letter of Feb. 29th embodying the conditions under which they were prepared to coöperate in the working of the Act; and whether the Commissioners would issue such regulations as would enable them to give effect to the requirements of the medical profession as set forth in their letter.

Mr. FELL had also on the notice paper a question to the honourable gentleman asking whether any progress had been made in the negotiations with the doctors as to their working under the National Insurance Act; and if the six points which they had asked would be agreed to by the Insurance Commissioners.

Mr. MASTERMAN said in reply: I propose to answer both these questions together. The British Medical Association have availed themselves of the opportunity afforded them by the Commissioners to recommend practitioners experienced in general practice for appointment as members of the Advisory Committee, and the gentlemen so recommended will be appointed on that committee. The letter of Feb. 29th has been acknowledged. No regulations have, however, yet been considered by the Joint Committee on this matter, as they recognise that this is essentially a subject in which the advice and assistance of the Advisory Committee is desirable.

Sir PHILIP MAGNUS asked the honourable gentleman whether in the event of the Insurance Committees or the Insurance Commissioners being unable to satisfy the requirements of the medical profession, and consequently deciding to adopt the alternative proposal of the Act—viz., to suspend medical benefit and to return to the insured person the money equivalent to such benefit—the insured person would be free to use that money for any purpose he might think fit; and, if so, whether the insured person would necessarily receive under the Act any medical benefit whatever.—Mr. MASTERMAN replied: If the normal scheme of medical benefit laid down in Section 15 is not carried out, not one, but several alternatives are provided by the Act. These include power for the Commissioners themselves to authorise the Local Insurance Committees to make other arrangements for providing medical benefit, or for themselves making such arrangements as they think fit, or for suspending medical benefit for any period and paying to each insured person an equivalent sum. Even if the last course were adopted the insured person would be free, though not compelled, to make his own arrangements for medical treatment.

Mr. FELL asked the honourable gentleman whether the appointments that were being made under the National Insurance Act were being made provisionally and were subject to determination if no agreement was come to with the doctors who were to work the Act.—Mr. MASTERMAN said in reply: The answer is in the negative. The coming into operation of the Act is not dependent upon any agreement that may be made with representatives of the medical profession.

Mr. FELL: What is the use of bringing it into operation if those who are supposed to carry it out refuse to do so?—Mr. MASTERMAN: I do not understand the question. If necessary, the Act will be worked without medical benefits as in Ireland.

BOOKS, ETC., RECEIVED.

AFRICAN WORLD, THE, LIMITED, 1, Gresham Buildings, Basinghall-street, London, E.C.

How to Live in Tropical Africa. A Guide to Tropical Hygiene and Sanitation. The Malaria Problem: the Cause, Prevention, and Cure of Malarial Fever. By J. Murray, M.D. Maps and Climatological Memoranda by E. G. Ravenstein, F.R.G.S. Edited by Leo Weinthal, F.R.G.S., Chief Editor of "The African World," London. Price 3*s.* 6*d.*

ALLEN, GEORGE, AND CO., LIMITED, 44 and 45, Rathbone-place, London, W.

The Visitation of the Sick. Some Practical Reflections for the Use of the Clergy and others engaged in Parochial Visitation. Dedicated to, and with an Introduction by, the Lord Bishop of Chichester. By the Rev. Theodore Johnson, Rector of Bodiam, Sussex. Price 1*s.* 6*d.* net.

AMERICAN HOSPITAL ASSOCIATION, Office of the Secretary, 522, Church-street, Toronto, Canada.

Transactions of the American Hospital Association. Thirteenth Annual Conference, held at New York City, Sept. 19th, 20th, 21st, and 22nd, 1911. Volume XIII. Price not stated.

AMERICAN LARYNGOLOGICAL ASSOCIATION (Secretary and Treasurer, 118, West 69th Street), New York City.

Transactions of the Thirty-second Annual Meeting of the American Laryngological Association, held at Philadelphia, Pa., May 29th, 30th, and 31st, 1911. Price not stated.

ANIMAL DEFENCE AND ANTI-VIVISECTION SOCIETY, 170, Piccadilly, London, W.

The Royal Commission on Vivisection. Evidence by Miss Lind-af-Hageby. Given on May 1st and June 5th, 1907. Price not stated.

BAILLIÈRE, TINDALL, AND COX, London.

The Treatment, Prevention, and Cure of Tuberculosis and Lupus with Allyl Sulphide. By William C. Minchin, M.D. Univ. Dublin. Price 3*s.* 6*d.* net.

BALE (JOHN), SONS, AND DANIELSSON, LIMITED, London.

Medical Gymnastics and Massage for the Treatment of Disease Deformity, and Injury. By Frederick F. Middleweek, L.R.C.P., L.R.C.S. Ed., Director of Mechano-Therapeutics and Massage, West-End Hospital for Nervous Diseases. With an Introduction by Dr. J. Arvedson, Stockholm. Price 2*s.* 6*d.* net.

CASSELL AND COMPANY, LIMITED, London, New York, Toronto, and Melbourne.

British Red Cross Society First-Aid Manual. No. 1. By James Cantlie, M.A., M.B., F.R.C.S., V.D., Hon. Surgeon-Colonel, R.A.M.C. (T.F.). Price 1*s.* net.

CHAMBERS, W. AND R., LIMITED, 38, Soho-square, London, W.; 339, High-street, Edinburgh.

Organic Chemistry. Entirely New Edition (November, 1911). Part I. and Part II. in one volume. By W. H. Perkin, Ph.D., Sc.D., LL.D., F.R.S., Professor of Chemistry, Victoria University, Manchester, and F. Stanley Kipping, Ph.D., Sc.D., F.R.S., Professor of Chemistry, University College, Nottingham. Price not stated.

CORAH, JOHN AND SON, Loughborough and London.

The National Insurance Act. By J. B. Pike, M.R.C.S. Eng., L.R.C.P. Ed., Honorary Surgeon, Loughborough General Hospital. Price 3*d.*

DORNAN, WILLIAM J., Philadelphia.

Transactions of the American Surgical Association. Volume the Twenty-ninth. Edited by Archibald Maclaren, M.D., Recorder of the Association. Price not stated.

GOVERNMENT PRINTING OFFICE, Washington.

Treasury Department. Public Health and Marine Hospital Service of the United States. Hygienic Laboratory Bulletin, No. 79. January, 1912. Digest of Comments on the Pharmacopœia of the United States of America (Eighth decennial revision), and on the National Formulary (Third Edition). For the Calendar Year ending Dec. 31st, 1909. By Murray Galt Motter and Martin I. Wilbert. Price not stated.

HEINEMANN, WILLIAM, 21, Bedford-street, London, W.C.

Microbes and Toxins. By Dr. Etienne Burnet, of the Pasteur Institute of Paris. With a Preface by Élie Metchnikoff Translated from the French by Dr. Charles Broquet and W. M. Scott, M.D. Price 5*s.* net.

HODGE, WILLIAM, AND COMPANY, 12, Bank-street, Edinburgh.

Trial of William Palmer. Edited by George H. Knott, Barrister-at-Law. Price 5*s.* net.

JOURNAL OF NERVOUS AND MENTAL DISEASE PUBLISHING COMPANY, THE, 64, West 56th Street, New York.

Nervous and Mental Disease Monograph Series No. 9. Studies in Psychiatry. Vol. I. By Members of the New York Psychiatrical Society. Price $2.00.

Nervous and Mental Disease Monograph Series No. 10. Handbook of Mental Examination Methods. By Shepherd Ivory Franz, Ph.D., Scientific Director and Psychologist, Government Hospital for the Insane, Professor of Physiology, George Washington University. Price $2.00.

LONGMANS, GREEN, AND CO., London, New York, Bombay, and Calcutta.

Motive Force and Motivation-Tracks. A Research in Will Psychology. By E. Boyd Barrett, S.J., Doctor of Philosophy, Superior Institute, Louvain; Honours Graduate, National University, Ireland. Price, paper, 6*s.* net.; cloth, 7*s.* 6*d.* net.

PUTNAM'S SONS (G. P.), New York and London.

The Way with the Nerves. Letters to a Neurologist on Various Modern Nervous Ailments, Real and Fancied, with Replies thereto telling of their Nature and Treatment. By Joseph Collins, Physician to the Neurological Institute of New York. Price 6*s.* net.

ROYAL COLLEGE OF PHYSICIANS OF LONDON, Pall Mall East, London, S.W.

List of the Fellows, Members, Extra-Licentiates, and Licentiates of the Royal College of Physicians of London, and of the Holders of the Diploma in Public Health, granted jointly by the Royal Colleges of Physicians and Surgeons. MCMXII. Price not stated.

SAUNDERS (W. B.) COMPANY, Philadelphia and London.

Diseases of the Skin and the Eruptive Fevers. By Jay Frank Schamberg, A.B., M.D., Professor of Dermatology and Infectious Eruptive Diseases in the Philadelphia Polyclinic and College for Graduates in Medicine. Second edition, thoroughly revised. Price, cloth, 13*s.* net.

Principles and Practice of Physical Diagnosis. By John C. Da Costa, jun., M.D., Assistant Professor of Clinical Medicine, Jefferson Medical College. Second edition, thoroughly revised. Price, cloth, 15*s.* net.

Clinical Diagnosis. A Manual of Laboratory Methods. By James Campbell Todd, Ph.B., M.D., Professor of Pathology, University of Colorado. Second edition, revised and enlarged. Price, cloth, 10*s.* 6*d.* net.

SMITH, ELDER, AND CO., 15, Waterloo-place, London.

Saint Bartholomew's Hospital Reports. Edited by H. Morley Fletcher, M.D., and W. McAdam Eccles, M.S., F.R.C.S. Vol. XLVII. Price 6*s.* or 8*s.* 6*d.* (according to date of payment).

SPOTTISWOODE AND CO., LIMITED, 5, New Street-square, London,

Minutes of the General Medical Council and of its Various Committees for the Year 1911, with Thirty-six Appendices. Vol. XLVIII. 1912. Price not stated.

General Index to the Minutes of the General Medical Council, of its Executive and Dental Committees, and of its three Branch Councils. Volumes XL. to XLVIII. (1903-1911). Price not stated.

SWEET AND MAXWELL, LIMITED, 3, Chancery-lane, London, W.C.

A Manual of Public Health Law. By Bertram Jacobs, of the Inner Temple and South Wales Circuit, Barrister-at-Law. Price 7*s.* 6*d.*

WILLIAMS, J. W., London. (Agents:—SIMPKIN, MARSHALL, AND CO., LIMITED, London.)

New Light on Consumption. By Arthur Lovell, Author of "Ars Viven di," "Concentration," "Deep Breathing," &c. Price, library edition, 3*s.* 6*d.*; popular edition, 1*s.*

Appointments.

Successful applicants for Vacancies, Secretaries of Public Institutions, and others possessing information suitable for this column, are invited to forward to THE LANCET *Office, directed to the Sub-Editor, not later than 9 o'clock on the Thursday morning of each week, such information for gratuitous publication.*

CAMPBELL, D. B., M.B., Ch.B. Glasg., has been appointed Certifying Surgeon under the Factory and Workshop Acts for the Saltcoats District of the county of Ayr.

CORKER, J., M.B., B.S. R.U.I., has been appointed Resident Medical Officer of the Dearnley Workhouse.

DOTT, A., M.B., M.S. Edin., has been appointed Certifying Surgeon under the Factory and Workshop Acts for the Gatehouse District of the county of Kirkcudbright.

MUSGROVE, C. D., M.D. Edin., has been appointed Certifying Surgeon under the Factory and Workshop Acts for the Penarth District of the county of Glamorgan.

MUSSON, A. W., M.B., B.C. Cantab., has been appointed Surgeon under the Factory and Workshop Acts for the Clitheroe District of the county of Lancs.

ROONEY, P. J., L.R.C.P. & S. Irel., has been appointed Certifying Surgeon under the Factory and Workshop Acts for the Virginia District of the county of Cavan.

SHIPSEY, J., M.B., B.S. Irel., has been appointed Certifying Surgeon under the Factory and Workshop Acts for the Schull District of the county of Cork.

VILVANDRÉ, G. E., M.R.C.S., L.R.C.P. Lond., has been appointed Certifying Surgeon under the Factory and Workshop Acts for the Staplehurst District of the county of Kent.

VINTER, S. G., M.R.C.S., L.R.C.P. Lond., has been appointed Certifying Surgeon under the Factory and Workshop Acts for the Torpoint District of the county of Cornwall.

WATSON, J. R., M.D. Edin., has been appointed Medical Officer to the Hamilton Parish Council.

Vacancies.

For further information regarding each vacancy reference should be made to the advertisement (see Index).

ABERDEEN, KINGSEAT ASYLUM.—Assistant Medical Officer. Salary £150 per annum, with board, &c.

AGRA, UNITED PROVINCES, INDIA, DUFFERIN HOSPITALS AND FEMALE MEDICAL SCHOOL.—Female Senior Doctor. Salary £26 13*s.* 4*d.* per mensem, with free quarters.

ALBERT DOCK HOSPITAL, Connaught-road, E.—Senior House Surgeon. Salary £100 per annum, with board, residence, and washing. Also House Surgeon. Salary £50 per annum, with board, residence, and washing. Each for six months.

BARROW-IN-FURNESS, NORTH LONSDALE HOSPITAL.—House Surgeon. Salary £100 per annum, with board and attendance.

BEDFORD COUNTY HOSPITAL.—Assistant House Surgeon. Salary £80 per annum, with board, lodging, and laundry.

BIRMINGHAM AND MIDLAND EYE HOSPITAL.—Second and Third House Surgeons. Salaries £80 and £75 per annum respectively, with board, rooms, and laundry.

BIRMINGHAM CITY EDUCATION COMMITTEE.—Ophthalmic Surgeon. Salary £200 per annum.

BRADFORD CHILDREN'S HOSPITAL.—House Surgeon. Salary £100 per annum.

BRISTOL EYE HOSPITAL.—House Surgeon. Salary £80 per annum, with board and residence.

BURNLEY UNION WORKHOUSE.—Resident Assistant Medical Officer, unmarried. Salary £150 per annum, with apartments, rations, washing, and attendance.

BURY ST. EDMUNDS, WEST SUFFOLK GENERAL HOSPITAL.—House Surgeon, unmarried. Salary £100 per annum, with board, lodging, and laundry

BUXTON, DERBYSHIRE, DEVONSHIRE HOSPITAL.—Pathologist. Salary at rate of £250 per annum.

CANCER HOSPITAL (FREE), Fulham-road, S.W.—House Surgeon for six months. Salary £70 per annum.

CARLISLE NON-PROVIDENT DISPENSARY.—Resident Medical Officer. Salary £150 per annum, with apartments.

CLIFTON, YORK, NORTH RIDING ASYLUM.—Second Assistant Medical Officer. Salary £150 per annum, with board, apartments, washing, and attendance.

COVENTRY AND WARWICKSHIRE HOSPITAL.—Junior House Surgeon. Salary £90 per annum, with rooms, board, washing, and attendance.

DARLINGTON HOSPITAL AND DISPENSARY.—House Surgeon, unmarried. Salary £120 per annum, with board, lodging, and laundry.

DEWSBURY AND DISTRICT GENERAL INFIRMARY.—House Surgeon. Salary £120 per annum, with board, residence, and laundry.

DREADNOUGHT HOSPITAL, Greenwich.—Two House Physicians and Two House Surgeons, each for six months. Salary £50 per annum, with board, residence, and washing. Also Medical Registrar.

DUBLIN, ROYAL VICTORIA EYE AND EAR HOSPITAL, Adelaide-road.—House Surgeon. Salary £40 per annum, with board and residence.

DUDLEY, GUEST HOSPITAL.—Senior Resident Medical Officer. Salary £100 per annum, with board, residence, attendance, and washing.

EVELINA HOSPITAL FOR SICK CHILDREN, Southwark, London, S.E.—House Physician. Salary at rate of £75 per annum, with board, residence, and washing. Also Clinical Assistants.

HEMEL HEMPSTEAD, WEST HERTS HOSPITAL.—Resident Medical Officer. Salary £100 per annum, with rooms, board, and washing.

HUNTINGDON COUNTY HOSPITAL.—House Surgeon. Salary £80 per annum, and all found.

JERSEY POOR-HOUSE AND INFIRMARY (HÔPITAL-GÉNÉRAL).—Medical Officer. Salary £250 per annum.

KENSINGTON AND FULHAM GENERAL HOSPITAL, Earl's Court, S.W.—Surgeon.

LEICESTER INFIRMARY.—Honorary Physician.

LONDON COUNTY ASYLUM, Cane Hill, Coulsdon, Surrey.—Junior Assistant Medical Officer, unmarried. Salary £170 per annum, with board, apartments, and washing.
LONDON HOSPITAL, Whitechapel, E.—Registrar and Demonstrator in the Aural Department. Salary £100 per annum. Also Junior Dental House Surgeon. Salary £50 per annum.
LOUGHBOROUGH AND DISTRICT GENERAL HOSPITAL AND DISPENSARY.—Resident House Surgeon. Salary £120 per annum, with rooms, attendance, board, and washing.
MACCLESFIELD GENERAL INFIRMARY.—Junior House Surgeon. Salary £80 per annum, with board and residence.
MANCHESTER ROYAL INFIRMARY.—Junior House Surgeon, unmarried, for six months. Board and residence provided.
MERTHYR TYDFIL UNION WORKHOUSE.—Assistant Medical Officer. Salary £150 per annum, with apartments, rations, laundry, and attendance.
NORTH SHIELDS, TYNEMOUTH UNION WORKHOUSE, Preston-road.—Medical Officer. Salary £340 per annum.
NORWICH, NORFOLK AND NORWICH HOSPITAL.—Casualty Officer, unmarried, for six months. Salary £60 per annum, with board, lodging, and washing.
POPLAR HOSPITAL FOR ACCIDENTS, Poplar, E.—Assistant House Surgeon for six months. Salary at rate of £80 per annum, with board and residence.
PORTSMOUTH, ROYAL PORTSMOUTH HOSPITAL.—House Physician for six months. Salary £75 per annum, with board, &c.
PRESTON ROYAL INFIRMARY.—Senior and Junior House Surgeons, unmarried, for six months. Salaries £80 and £60 per annum respectively, with board, residence, and washing.
QUEEN CHARLOTTE'S LYING-IN HOSPITAL, Marylebone-road, N.W.—Physician to Out-patients.
READING, ROYAL BERKSHIRE HOSPITAL.—House Physician, House Surgeon, and Second House Surgeon for six months. Salary in each case £80 per annum, with board, lodging, and washing.
ROYAL EAR HOSPITAL, Soho.—House Surgeon, non-resident. Salary £40 per annum.
ROYAL FREE HOSPITAL, Gray's Inn-road, W.C.—Assistant Anæsthetist. Salary £50 per annum.
ROYAL HOSPITAL FOR DISEASES OF THE CHEST, City-road, London, E.C.—House Physician for six months. Salary at rate of £60 per annum, with board, lodging, and washing.
ST. BARTHOLOMEW'S HOSPITAL.—Surgeon.
SALFORD ROYAL HOSPITAL.—Junior House Surgeon, for six months. Salary at rate of £65 per annum, with board and residence.
SHEFFIELD ROYAL HOSPITAL.—Sixth Resident, unmarried. Salary £60 per annum, with board, lodging, and washing.
SHEFFIELD ROYAL INFIRMARY.—Junior Resident Medical Officer. Salary £60 per annum.
SHEFFIELD UNIVERSITY.—Demonstrator in Experimental Physiology. Salary £200 per annum.
SHREWSBURY, SALOP INFIRMARY (COUNTY HOSPITAL).—House Physician. Salary at rate of £70 per annum, with board and apartments.
SINGAPORE MUNICIPALITY INFECTIOUS DISEASES HOSPITAL, STRAITS SETTLEMENTS.—Resident Medical Officer. Salary £400 per annum, with free quarters.
SLEAFORD, LINCOLNSHIRE, KESTEVEN COUNTY ASYLUM.—Assistant Medical Officer. Salary £150 per annum, with board, &c.
STAFFORD, STAFFORDSHIRE GENERAL INFIRMARY.—House Physician. Salary £82 per annum, with board, residence, and laundry.
STOCKPORT INFIRMARY.—Junior House Surgeon. Salary £80 per annum, with board, washing, and residence.
SUNDERLAND CHILDREN'S HOSPITAL.—Resident Medical Officer for six months. Salary £80 per annum, with board, residence, and laundry.
SUNDERLAND ROYAL INFIRMARY.—Two Junior House Surgeons and House Physician for six months. Salary £80 per annum in each case, with board, residence, and laundry.
TEIGNMOUTH HOSPITAL, S. DEVON.—House Surgeon. Salary £100 per annum, with board, lodging, and laundry.
WALSALL AND DISTRICT HOSPITAL.—Senior House Surgeon. Salary £120 per annum, with board, residence, and laundry.
WESTERN GENERAL INFIRMARY, Marylebone-road, N.W.—Honorary Physician.
WEST LONDON HOSPITAL AND POST-GRADUATE COLLEGE, Hammersmith-road, W.—Clinical Assistants. Also Three Non-resident Assistant House Surgeons. Each for three months.
WOLVERHAMPTON AND STAFFORDSHIRE GENERAL HOSPITAL.—Resident Surgical Officer. Salary £125 per annum, with board, apartments, and laundry. Also Resident Medical Officer. Salary at rate of £100 per annum, with board, rooms, and laundry.

THE Chief Inspector of Factories, Home Office, London, S.W., gives notice of vacancies for Certifying Surgeons under the Factory and Workshop Acts at Wolston, in the county of Warwick; and at Conway, in the county of Carnarvon.

Births, Marriages, and Deaths.

BIRTHS.

THOMAS.—On March 15th, at Colston-parade, Redcliffe, Bristol, the wife of J. M. M. Thomas, M.R.C.S., L.R.C.P., of a son.
YOUNG.—On March 13th, at Stoney Stanton, Leicestershire, the wife of Graham Pallister Young, M.B., B.S. Lond., M.R.C.S., L.R.C.P., of a daughter.

DEATHS.

CLARKE.—On March 11th, at Rockleigh, Whiteladies-road, Clifton, Bristol, William Thomas Clarke, M.R.C.S., L.R.C.P., eldest son of T. W. Clarke.
RYMER.—On Jan. 11th, at Fort Resolution, Great Slave Lake, N.W.T., Canada, James Francis Rymer, M.R.C.S., L.D.S., D.D.S., aged 48 years.

N.B.—A fee of 5s. is charged for the insertion of Notices of Births, Marriages, and Deaths.

Notes, Short Comments, and Answers to Correspondents.

INCOME-TAX AND THE MEDICAL PROFESSION.

A CORRESPONDENT writes:—"I should be very much obliged for information on the following point regarding income-tax. In calculating the net income for taxation, is it permitted to deduct from the gross receipts of a practice fees paid to a locum tenens? My partner and I furnish the surveyor of taxes, at his request, with a statement at the beginning of each year of our gross income and a detailed account of our practice expenses. In former years we have always been allowed to include locum fees in practice expenses. This year the surveyor informs us that we cannot do so, and quotes a recent legal judgment to show he is right. I enclose a copy of his letter." The surveyor in his letter says: "The locum fees have been added back because they are not considered as being necessary expenses. There is no provision for the allowance of any sum paid to another man to do part of the work of the profession—in fact, it was decided in the case of Lothian *v.* Macrae that should such allowances be claimed they were not admissible as income-tax deductions." We do not know the circumstances of the case referred to by the surveyor, but our opinion is that our correspondent is justified in deducting the cost of an assistant or locum-tenent; we consider that he should appeal to the Commissioners if the surveyor insists on his view. Such deductions have always been allowed in the past, and this particular deduction was given in the model form of return published in THE LANCET of July 4th, 1896 (now out of print), which was based on an actual return produced to the Commissioners and allowed by them. We do not know what distinction (if any) is here attempted to be drawn between an "assistant" and a "locum-tenent"; but to say that the fees of the latter "are not considered as being necessary expenses" appear to suggest that a medical man may not deduct his assistant's salary.

To the Editor of THE LANCET.

SIR,—Claims for repayment of income-tax for the year ended April 5th, 1909, must be lodged before April 5th next (Good Friday), otherwise the right to claim for that year will be lost, as the Inland Revenue authorities will not extend the time under any circumstances.

Yours faithfully,

THE INCOME-TAX ADJUSTMENT AGENCY, LIMITED,
E. MONTAGUE, Secretary.

9, 10, and 11, Poultry, Cheapside, E.C., March 20th, 1912.

AN INTERESTING FACT.

To the Editor of THE LANCET.

SIR,—On Sept. 13th, 1882, I removed an ovarian cyst from a woman aged 61. The case was reported in THE LANCET, Feb. 17th, 1883. It may interest your readers to know that the patient celebrated her ninetieth birthday on Nov. 4th, 1911, and is still alive and in possession of all her faculties. The case is uncommon and may be worth recording.

I am, Sir, yours faithfully,

A. C. BUTLER-SMYTHE, F.R.C.S. Edin.

Brook-street, W., March 12th, 1912.

DOMESTIC ECONOMY FOR HOUSEWIVES.

THE Woman's Industrial Council, of 7, John-street Adelphi, W.C., is issuing a series of penny handbooks (by post 1½*d.*) in illustration of domestic difficulties. We have before us five such pamphlets by Marguerite Fedden, which should prove eminently useful to those who really desire to acquire training in methodical house work, and it is only by method that good results can be looked for. "How to Cook a Simple Meal" gives some preliminary instruction on the underlying principles of cooking, followed by detailed accounts how to proceed step by step in preparing all kinds of dishes. "How to Clean a House" is equally precise and orderly in its directions. The same remarks apply to "How to do the Weekly Mending," "How to do the Weekly Wash," and "How to do your own Upholstery and Machining."

If to these be added the "Home Handbook, Health and Hygiene" (London: The Incorporated Institute of Hygiene. Pp. 82. Price 3*d.*), which expounds the basic principles of health and hygiene in relation to diet, clothing, personal hygiene, the rearing of children, nursing, sanitation of the house, nursery, and bedroom, disposal of refuse, and prevention of fire, even the poorest will possess a library of useful information on domestic economy that, if properly studied, will enable them to become proficient in household management.

"606" IN BILHARZIOSIS.

To the Editor of THE LANCET.

SIR,—I should be glad if any of your Cairo correspondents would kindly say what benefit, if any, has been derived from the venous injection of "606" in cases of bilharziosis.

I am, Sir, yours faithfully,

"PERPLEXED."

THE CAUSES OF A MEDICAL PRACTITIONER'S BANKRUPTCY.

Mr. A. C. B. Jones, a medical man practising at Chatham, presented himself recently for public examination as a bankrupt at the court at Rochester, and in explaining the causes of his insolvency made the following statement: His assets stated on paper showed a surplus over his liabilities of £60, but this was on the assumption that the value of his practice was correctly represented at the sum of £400. He was of the opinion that at that figure it could have been disposed of but for the intervention of the National Insurance Act, the introduction of which in Parliament and its passing had rendered the sale of practices of this class a matter of extreme difficulty. He had been informed by the agent to whom he had entrusted it that the effect of the Act had been such as practically to put an end to sales, so that he had not sold one for a year. A further cause of the debtor's position was to be found in the Midwives Act, which had diminished his former income by £150 per annum. According to his experience many ladies preferred employing midwives to medical men since the status of the midwife had been raised. Mr. Jones was allowed to pass his examination. His story is not one to encourage those who contemplate entering the medical profession, and it is for the serious consideration of legislators that in this concrete instance serious financial loss to a medical practitioner should be directly traceable to the effect of two benevolently intended Acts of Parliament. That Parliament should legislate in the interest of the public health is as it should be, but the public health is in the custody of the medical profession, and it can be of no benefit to the public so to lower the possible emoluments of everyday professional practice that young men of good ability are driven to enter upon other pursuits, leaving their intellectual inferiors to fill places which should be theirs.

VENERABLE VERITIES.

To the Editor of THE LANCET.

SIR,—Some time ago there was some controversy in the medical press as to certain well-known verses, of Hudibrasian flavour, which, writing only from my memory of them, were:—

The devil was sick, the devil a saint would be;
The devil was well, the devil a saint was he.

And—

When we are ill, but not before,
God and the doctor we adore.
When we get well, both are requited;
God is forgotten, the doctor "slighted."

Is it well known that the idea of these verses—so true, alas! to our edical experience—may be found in Rabelais, who gives in his "Pantagruel," as a "proverbe lombardique," the Italian verse:—

Passato el pericolo, gabbato el santo.
(Le danger passé, est le saint moqué.)

I am, Sir, yours faithfully,

Birmingham, March 1st, 1912. JAMES SAWYER.

"*Rus*" inquires: What is the best method of treating the papered walls of rooms in which illness or deaths have occurred in such cases as death from bronchitis, cancer, or a disease not usually attributed to a micro-organism? Must sulphur or formalin be used? Or is there any dry method or wet method by spraying or washing of the paper which can be used, whereby the paper of the walls can be allowed to remain and by which no repapering will probably be rendered necessary?

*** The usual procedure recommended by health officials and sanitary officers is that the room should be emptied of all furniture, that this and the room should be thoroughly scrubbed, and that the walls should be rubbed down with dough and sprayed with formalin.—ED.L.

W. B. F.—In a hospital which possesses two resident medical officers and a resident dispenser it is neither customary nor desirable that the matron or any other unqualified person should have charge of the dispensary keys.

COMMUNICATIONS not noticed in our present issue will receive attention in our next.

A DIARY OF CONGRESSES.

THE following Congresses, Conferences, and Exhibitions are announced for 1912:—

March 23rd–April 4th (London, Royal Agricultural Hall).—International Smoke Abatement Exhibition.
April 1st and 2nd (Milan).—Italian National Convention upon the Sexual Question.
" (London).—First Congress of Pure Food and Health Society of Great Britain.
" 1st–7th (Tunis).—Twenty-second Congress of French-speaking Alienists and Neurologists.
" 8th–13th (Rome).—Seventh International Congress of Dermatology and Syphilology.
" 8th–15th (Johannesburg).—Thirteenth South African Medical Congress.
" 9th–11th (Paris).—Congress of Physiotherapy for French-speaking Physicians.
April 9th (Berlin).—Eleventh Congress of the German Society for Orthopædic Surgery.
" 9th–13th (Giessen).—Congress on Study of Families, Inheritance, and Race Hygiene.
" 10th–13th (Berlin).—Forty-first Congress of the German Surgical Society.
" 12th–30th (London, Olympia).—Ideal Homes Exhibition.
" 14th (Berlin).—Eighth Congress of the German Röntgen Society.
" 14th–20th (Rome).—Seventh International Congress on Tuberculosis.
" 15th–18th (Wiesbaden).—Twenty-ninth German Congress for Internal Medicine.
" 21st–24th (Munich).—Twenty-sixth Meeting of the Anatomical Society.
May 7th–17th (Washington).—Ninth International Red Cross Conference.
" 13th (London, Guildhall).—Conference on Diet in Schools.
" 23rd (opens) (Philadelphia).—Twelfth International Congress on Navigation.
" 23rd–25th (Hanover).—Nineteenth Meeting of the Union of German Laryngologists.
" 25th–27th (Paris).—International Musical Festival.
" 26th–28th (Paris).—National Conference of the "Gouttes de Lait."
Whitsuntide (Portrush).—British Esperanto Congress
May 27th–June 1st (London).—Eighteenth International Congress of Americanists.
" 29th–31st (Berlin).—Fifteenth Session of the German Society for Gynæcology.
" (London).—International Horticultural Exhibition.
May to October (London, Earl's Court).—Shakespeare's England.
June 11th–14th (Caxton Hall, Westminster).—Second National Conference on the Prevention of Destitution.
" 24th–27th (London).—The (Biennial) Health Conference and Exhibition.
" (London).—Missionary Exhibition.
" (Atlantic City, N.J.).—Annual Meeting of the American Medical Association.
" (Birmingham).—Tuberculosis Exhibition.
" (London, Science Museum, South Kensington).—Second Optical Convention.
July 2nd–5th (London).—Congress of the Universities of the Empire.
" 2nd–6th (Doncaster).—Seventy-third Annual Show of the Royal Agricultural Society of England.
" 4th–6th (Dublin).—Celebration of the Bicentenary of the School of Physic in Ireland (Medical School of Trinity College, Dublin).
" 12th–16th (London).—Imperial Conference of Teachers' Associations.
" 17th–19th (Oxford).—Oxford Ophthalmological Congress.
" 19th–27th (Liverpool).—British Medical Association, Eightieth Annual Meeting.
" 24th–30th (University of London).—First International Eugenic Congress.
" 25th–28th (Berlin).—Royal Institute of Public Health.
" 29th–August 3rd (York).—Congress and Exhibition of the Royal Sanitary Institute.
Aug. 5th–10th (Oxford).—Second International Congress of Entomology.
" 7th–10th (Glasgow University).—Thirty-second Annual Meeting of the British Dental Association.
" 10th–Sept. 6th (Balkans, Turkey, Greece).—Ninth Annual Congress of the Association Internationale de Perfectionnement Scientifique (A.P.M.).
" 12th–17th (Boston, U.S.A.).—Ninth International Otological Congress.
" (end) (Cracow).—International Esperanto Congress.
Sept. 4th (Washington, D.C.) and Sept. 6th–13th (New York).—Eighth International Congress of Applied Chemistry.
" 4th (opens) (Dundee).—British Association.
" 9th–10th (San Sebastian).—Third Spanish Congress of Tuberculosis.
" 10th–12th (Berlin).—Sixth International Congress of Obstetrics and Gynæcology.
" 23rd–28th (Washington, D.C.).—Fifteenth International Congress on Hygiene and Demography.
" 27th–29th (Hamburg).—Sixth Annual Meeting of the German Society of Specialists in Nerve Diseases.
" (Prague).—International Congress of Radiology and Medical Electrology.
Oct. 9th–12th (New York).—Electrical Exposition and Automobile Show.
" 13th–16th (Paris).—Thirteenth French Congress of Medicine.
(Budapest).—Tuberculosis Exhibition.
(Stockholm).—Olympic Games.
(Düsseldorf).—Third International Medical Accident Congress.
(Perth, Western Australia).—(Three days.) Health Congress.
(Edmonton).—Annual Meeting of the Canadian Medical Association.

In 1913:—

(Easter week) (Berlin).—Fourth International Congress for Physiotherapy.
Aug. 6th–12th.—(London).—Seventeenth International Congress of Medicine.
" 22nd–28th (Cambridge).—International Mathematical Congress.
(London).—Historical Medical Exhibition. (Organised by Mr. Henry S. Wellcome.)
(Chicago).—Congress of the International Association of Refr[illegible] geration.

(Washington).—Congress of American Physicians and Surgeons.
(Paris).—Congress of Physical Education.
(Milan).—Fourteenth International Anti-alcoholic Congress.
(Buffalo).—Fourth International Congress of School Hygiene.

In 1914:—
(Vienna).—Third International Congress for Professional Diseases.
(Auckland, N.Z.).—Australasian Medical Congress.
(St. Petersburg).—Third Mendeléeff Congress of Pure and Applied Chemistry and Physics.

Medical Diary for the ensuing Week.

SOCIETIES.

ROYAL SOCIETY, Burlington House, London, W.

THURSDAY.—Dr. G. J. Burch: A Confusion Test for Colour Blindness.—Mr. C. Dobell: On the Systematic Position of the Spirochætæ (communicated by Prof. A. Sedgwick).—Mr. E. C. Snow: The Influence of Selection and Assortative Mating on the Ancestral and Fraternal Correlations of a Mendelian Population (communicated by Prof. Karl Pearson).—Mr. T. Lewis and Mr. M. D. D. Gilder: The Human Electrocardiogram: a Preliminary Investigation of Young Male Adults to Form a Basis for Pathological Study (communicated by Sir J. R. Bradford, K.C.M.G., secretary of the Royal Society).—Mr. C. Revis: The Production of Variation in the Physiological Activity in B. Coli by the Use of Malachite-green (communicated by Sir J. R. Bradford, K.C.M.G.).—Muriel Robertson: Notes on Some Flagellate Infections Found in Certain Hemiptera in Uganda (communicated by Sir J. R. Bradford, K.C.M.G.).—Muriel Robertson: Notes on Certain Aspects of the Development of T. Gambiensi in Glossina Palpalis (communicated by Sir J. R. Bradford, K.C.M.G.).—Dr. H. L. Duke: Antelopes and their Relation to Trypanosomiasis (communicated by Sir J. R. Bradford, K.C.M.G.).

ROYAL SOCIETY OF MEDICINE, 15, Cavendish-square, W. (temporary address during building of new house).

MONDAY.
ODONTOLOGICAL SECTION (Hon. Secretaries—W. W. James, Stanley Mummery): at 8 P.M.
Paper:
Mr. Douglas Gabell: The Position of Swivels on Spring Dentures.
Casual Communications:
Mr. H. B. Dowsett: Case of General Exostosis of all the Maxillary Teeth.
Mr. T. Campbell Dykes: Models showing Variation in Number, Size, and Position of Teeth—Incisors and Canines.

TUESDAY.
MEDICAL SECTION (Hon. Secretaries—Sir John F. H. Broadbent, Bt., Robert Hutchison): at 5.30 P.M.
Papers:
Sir Lauder Brunton, Bt., F.R.S.: Abdominal Angina.
Dr. Hertz: Functional Hour-glass Stomach.

FRIDAY.
LARYNGOLOGICAL SECTION (Hon. Secretaries—W. H. Kelson. Dan McKenzie), at 11, Chandos-street, W.: at 4.30 P.M.
Cases and Specimens
Will be shown by Dr. Peters, Dr. Irwin Moore, Dr. Brown Kelly, Mr. Stuart-Low, Dr. Kelson, Mr. Waggett, Dr. E. D. Davis, and others.

MEDICAL SOCIETY OF LONDON, 11, Chandos-street, Cavendish-square, W.

MONDAY.—8 P.M., Clinical Evening. Cases will be exhibited by Dr. P. Weber, Mr. A. E. Barker, Dr. de Havilland Hall, Mr. A. Lane, Mr. Barrington-Ward, Dr. E. Wynter, Mr. H. J. Curtis, Dr. W. Branson, Dr. F. S. Palmer, and others.

HUNTERIAN SOCIETY, London Institution, Finsbury-circus, E.C.

WEDNESDAY.—9 P.M., Discussion on the Therapeutic Value of Alcohol, to be opened by Sir Victor Horsley, followed by Dr. F. J. Smith, Prof. A. R. Cushny, Mr. M. C. Corner, Dr. J. L. Hewer, and others. (Lantern slide illustrations.)

HARVEIAN SOCIETY OF LONDON, Stafford Rooms, Titchborne-street, Edgware-road, W.

THURSDAY.—8.30 P.M., Dr. C. Shaw: The Material Obligations of Spiritualism and Allied Phenomena. (Harveian Lecture.)

LECTURES, ADDRESSES, DEMONSTRATIONS, &c.

ROYAL COLLEGE OF SURGEONS OF ENGLAND, Lincoln's Inn Fields, W.C.

MONDAY.—5 P.M., Dr. E. Fawcett: The Development of the Human Chondro-cranium and Various Cranial Bones.

MEDICAL GRADUATES' COLLEGE AND POLYCLINIC, 22, Chenies-street, W.C.

MONDAY.—4 P.M., Dr. W. Fox: Clinique (Skin). 5.15 P.M., Lecture:—Dr. T. D. Lister: Some Clinical Difficulties in Sanatorium Insurance.
TUESDAY.—4 P.M., Dr. J. Parkinson: Clinique (Medical). 5.15 P.M., Dr. J. S. R. Russell: Myelitis and its Treatment (with lantern demonstration).
WEDNESDAY.—4 P.M., Mr. C. Ryall: Clinique (Surgical). 5.15 P.M., Lecture:—Dr. A. E. Giles: Pernicious Effects of Uterine Fibroids.
THURSDAY.—4 P.M., Dr. D. W. Carmalt-Jones: Clinique (Medical). 5.15 P.M., Lecture:—Mr. Clayton-Greene: Some Bacterial Infections of the Urinary Tract.
FRIDAY.—4 P.M., Dr. G. Thompson: Clinique (Eye). 5.15 P.M., Lecture:—Dr. W. Wingrave: Some Points in the Pathology of Sputum.

POST-GRADUATE COLLEGE, West London Hospital, Hammersmith-road, W.

MONDAY.—10 A.M., Dr. Simson: Diseases of Women. 2 P.M., Medical and Surgical Clinics. X Rays. Operations. 2.30 P.M., Mr. Dunn: Diseases of the Eye.
TUESDAY.—10 A.M., Dr. Robinson: Gynæcological Operations. 2 P.M., Medical and Surgical Clinics. X Rays. Operations. Dr. Davis: Diseases of the Throat, Nose, and Ear. 2.30 P.M., Dr. Abraham: Diseases of the Skin.
WEDNESDAY.—10 A.M., Dr. Saunders: Diseases of Children. Dr. Davis: Operations of the Throat, Nose, and Ear. 2 P.M., Medical and Surgical Clinics. X Rays. Operations. Mr. B. Harman: Diseases of the Eye. Dr. Simson: Diseases of Women.
THURSDAY.—2 P.M., Medical and Surgical Clinics. X Rays. Operations. 2.30 P.M., Mr. Dunn: Diseases of the Eye.
FRIDAY.—10 A.M., Dr. Robinson: Gynæcological Operations. 2 P.M., Medical and Surgical Clinics. X Rays. Operations. Dr. Davis: Diseases of the Throat, Nose, and Ear. 2.30 P.M., Dr. Abraham: Diseases of the Skin.
SATURDAY.—10 A.M., Dr. Saunders: Diseases of Children. Dr. Davis: Operations of the Throat, Nose, and Ear. Mr. B. Harman: Diseases of the Eye. 2 P.M., Medical and Surgical Clinics. X Rays. Operations.

NORTH-EAST LONDON POST-GRADUATE COLLEGE, Prince of Wales's General Hospital, Tottenham, N.

MONDAY.—Clinics:—10.30 A.M., Surgical Out-patient (Mr. E. Gillespie). 2.30 P.M., Medical Out-patient (Dr. T. R. Whipham): Nose, Throat, and Ear (Mr. H. D. Gillies). 3 P.M., Clinical Pathology and Pathological Demonstration (Dr. W. H. Duncan).
TUESDAY.—Clinic: 2.30 P.M., Operations. Clinics:—Medical Out-patient (Dr. A. G. Auld.); Surgical (Mr. Howell Evans); Gynæcological (Dr. A. W. Giles). 3.30 P.M., Medical In-patient (Dr. A. J. Whiting). 4.30 P.M., Lecture:—Mr. H. Evans: Varicose Veins and Varicose Ulcers.
WEDNESDAY.—Clinics:—2 P.M., Throat Operations (Mr. Gillies). 2.30 P.M., Children's Out-patient (Dr. T. R. Whipham); Skin (Dr. G. N. Meachen): Eye (Mr. R. P. Brooks). 3 P.M., X Rays (Mr. W. Steuart); Clinical Pathology and Pathological Demonstration (Dr. W. H. Duncan). 5.30 P.M., Eye Operations (Mr. Brooks).
THURSDAY.—2.30 P.M., Gynæcological Operations (Dr. A. W. Giles). Clinics:—Medical Out-patient (Dr. A. J. Whiting); Surgical (Mr. Carson). 3 P.M., Medical In-patient (Dr. G. P. Chappel).
FRIDAY.—2.30 P.M., Operations. Clinics:—Medical Out-patient (Dr. A. G. Auld); Surgical (Mr. E. Gillespie); Eye (Mr. R. P. Brooks). 3 P.M., Medical In-patient (Dr. R. M. Leslie); Clinical Pathology and Pathological Demonstration (Dr. W. H. Duncan).

LONDON SCHOOL OF CLINICAL MEDICINE, Dreadnought Hospital, Greenwich.

MONDAY.—2 P.M., Operations. 2.15 P.M., Mr. Turner: Surgery. 3.15 P.M., Sir Dyce Duckworth: Medicine. 4.30 P.M., Mr. R. Lake: Ear and Throat. Out-patient Demonstrations:—10 A.M., Surgical and Medical. 12 noon, Ear and Throat. 3.15 P.M., Special Lecture:—Sir Dyce Duckworth: The Varieties and Significance of Cough.
TUESDAY.—2 P.M., Operations. 3.15 P.M., Dr. R. Wells: Medicine. 2.15 P.M., Mr. R. Carling: Surgery. 4.15 P.M., Sir M. Morris: Diseases of the Skin. Out-patient Demonstrations:—10 A.M., Surgical and Medical. 12 noon, Skin.
WEDNESDAY.—2 P.M., Operations. 2.15 P.M., Dr. F. Taylor: Medicine. 3.30 P.M., Mr. Cargill: Ophthalmology. Out-patient Demonstrations:—10 A.M., Surgical and Medical. 11 A.M., Eye.
THURSDAY.—2 P.M., Operations. 2.15 P.M., Dr. G. Rankin: Medicine. 3.15 P.M., Sir W. Bennett: Surgery. Out-patient Demonstrations:—10 A.M., Surgical and Medical. 12 noon, Ear and Throat.
FRIDAY.—2 P.M., Operations. 2.15 P.M., Sir J. Rose Bradford: Medicine. 3.15 P.M., Mr. McGavin: Surgery. Out-patient Demonstrations:—10 A.M., Surgical and Medical. 12 noon, Skin.
SATURDAY.—10 A.M., Radiography. 11 A.M., Dr. A. Davies: Pathological Demonstration. 2 P.M., Operations. Out-patient Demonstration:—10 A.M., Surgical and Medical. 11 A.M., Eye.

HOSPITAL FOR SICK CHILDREN, Great Ormond-street, W.C.

THURSDAY.—4 P.M., Lecture:—Mr. Gray: Some Points in the Relationship of the Nervous System to the Surgery of the Peritoneum.

LISTER INSTITUTE OF PREVENTIVE MEDICINE, Lecture Theatre of the Lister Institute, Chelsea Bridge-road, S.W.

TUESDAY.—5 P.M., Dr. W. Nicoll: Modern Aspects of Helminthology—Special Features of the Trematode Parasites of Man. (Lecture III.)
FRIDAY.—5 P.M., Dr. W. Nicoll: Modern Aspects of Helminthology—Special Features of the Cestode Parasites of Man. (Lecture IV.)

ROYAL INSTITUTION OF GREAT BRITAIN, Albemarle-street, Piccadilly, W.

THURSDAY.—3 P.M., Dr. F. A. Dixey: Sexual Dimorphism in Butterflies.
FRIDAY.—9 P.M., Prof. Sir J. J. Thomson: Results of the Application of Positive Rays to the Study of Chemical Problems.
SATURDAY.—3 P.M., Prof. Sir J. J. Thomson: Molecular Physics (Lecture VI.)

ANCOATS HOSPITAL, Manchester.

THURSDAY.—4.15 P.M., A Demonstration of Medical and Surgical Cases will be given by Members of the Honorary Staff. (Post-Graduate Clinic.)

MANCHESTER ROYAL INFIRMARY.

TUESDAY.—4.30 P.M., Dr. Murray: The Clinical Significance of Hæmorrhage as an Early Sign of Disease. (Post-Graduate Clinic.)

SALFORD ROYAL HOSPITAL.

THURSDAY.—4.30 P.M., Mr. R. Ollerenshaw: Some Common Deformities and their Treatment. (Post-Graduate Course).

OPERATIONS.

METROPOLITAN HOSPITALS.

MONDAY (25th).—London (2 P.M.), St. Bartholomew's (1.30 P.M.), St. Thomas's (3.30 P.M.), St. George's (2 P.M.), St. Mary's (2.30 P.M.), Middlesex (1.30 P.M.), Westminster (2 P.M.), Chelsea (2 P.M.), Samaritan (Gynæcological, by Physicians, 2 P.M.), Soho-square (2 P.M.), Gt. Northern Central (2.30 P.M.), West London (2.30 P.M.), London Throat (9.30 A.M.), Royal Free (2 P.M.), Guy's (1.30 P.M.), Children, Gt. Ormond-street (9 A.M.), St. Mark's (2.30 P.M.), Central London Throat and Ear (Minor 9 A.M., Major 2 P.M.).

TUESDAY (26th).—London (2 P.M.), St. Bartholomew's (1.30 P.M), St. Thomas's (3.30 P.M.), Guy's (1.30 P.M.), Middlesex (1.30 P.M.), Westminster (2 P.M.), West London, (2.30 P.M.), University College (2 P.M.), St. George's (1 P.M.), St. Mary's (1 P.M.), St. Mark's (2.30 P.M.), Cancer (2 P.M.), Metropolitan (2.30 P.M.), London Throat (9.30 A.M.), Samaritan (9.30 A.M. and 2.30 P.M.), Throat, Golden-square (9.30 A.M.), Soho-square (2 P.M.), Chelsea (2 P.M.), Children, Gt. Ormond-street (9 A.M. and 2 P.M., Ophthalmic, 2 P.M.), Tottenham (2.30 P.M.), Central London Throat and Ear (Minor, 9 A.M., Major, 2 P.M.), Royal National Orthopædic (9.30 A.M. and 4 P.M.).

WEDNESDAY (27th).—St. Bartholomew's (1.30 P.M.), University College (2 P.M.), Royal Free (2 P.M.), Middlesex (1.30 P.M.), Charing Cross (3 P.M.), St. Thomas's 2 P.M.), London (2 P.M.), King's College (2 P.M.), St. George's (Ophthalmic, 1 P.M.), St. Mary's (2 P.M.), St. Peter's (2 P.M.), Samaritan (9.30 A.M. and 2.30 P.M.), Gt. Northern Central (2.30 P.M.), Westminster (2 P.M.), Metropolitan (2.30 P.M.), London Throat (9.30 A.M.), Cancer (2 P.M.), Throat, Golden-square (9.30 A.M.), Guy's (1.30 P.M.), Royal Ear (2 P.M.), Children, Gt. Ormond-street (9 A.M. and 9.30 A.M., Dental, 2 P.M.), Tottenham (Ophthalmic, 2.30 P.M.), West London (2.30 P.M.), Central London Throat and Ear (Minor, 9 A.M., Major, 2 P.M.).

THURSDAY (28th).—St. Bartholomew's (1.30 P.M.), St. Thomas's (3.30 P.M.), University College (2 P.M.), Charing Cross (3 P.M.), St. George's (1 P.M.), London (2 P.M.), King's College (2 P.M.), Middlesex (1.30 P.M.), St. Mary's (2.30 P.M.), Soho-square (2 P.M.), North-West London (2 P.M.), Gt. Northern Central (Gynæcological, 2.30 P.M.), Metropolitan (2.30 P.M.), London Throat (9.30 A.M.), Samaritan (9.30 A.M and 2.30 P.M.), Throat, Golden-square (9.30 A.M.), Guy's (1.30 P.M.), Royal National Orthopædic (9 A.M. and 3.30 P.M.), Royal Ear (2 P.M.), Children Gt. Ormond-street (9 A.M. and 2 P.M.), Tottenham (Gynæcological, 2.30 P.M.), West London (2.30 P.M), Central London Throat and Ear (Minor, 9 A.M., Major, 2 P.M.).

FRIDAY (29th).—London (2 P.M.), St. Bartholomew's (1.30 P.M.), St. Thomas's (3.30 P.M.), Guy's (1.30 P.M.), Middlesex (1.30 P.M.), Charing Cross (3 P.M.), St. George's (1 P.M.), King's College (2 P.M.), St. Mary's (2 P.M.), Ophthalmic (10 A.M.), Cancer (2 P.M.), Chelsea (2 P.M.), Gt. Northern Central (2.30 P.M.), West London (2.30 P.M.), London Throat (9.30 A.M.), Samaritan (9.30 A.M. and 2.30 P.M.), Throat, Golden-square (9.30 A.M.), Royal National Orthopædic (3.30 P.M.), Soho-square (2 P.M.), Children, Gt. Ormond-street (9 A.M., Aural, 2 P.M.), Tottenham (2.30 P.M.), St. Peter's (2 P.M.), Central London Throat and Ear (Minor, 9 A.M., Major, 2 P.M.).

SATURDAY (30th).—Royal Free (9A.M.), London (2 P.M.), Middlesex (1.30 P.M.), St. Thomas's (2 P.M.), University College (9.15 A.M.), Charing Cross (2 P.M.), St. George's (1 P.M.), St. Mary's (10 A.M.), Throat, Golden-square (9.30 A.M.), Guy's (1.30 P.M.), Children, Gt. Ormond-street (9 A.M. and 9.30 A.M.), West London (2.30 P.M.).

At the Royal Eye Hospital (2 P.M.), the Royal London Ophthalmic (10 A.M.), the Royal Westminster Ophthalmic (1.30 P.M.), and the Central London Ophthalmic (2 P.M.), Hospital operations are performed daily.

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MANAGER'S NOTICES.

THE INDEX TO THE LANCET.

The Index and Title-page to Vol. II. of 1911 were given in THE LANCET of Dec. 30th, 1911.

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VOLUMES for the second half of the year 1911 are now ready. Bound in cloth, gilt lettered, price 16*s.*, carriage extra.

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METEOROLOGICAL READINGS.

(Taken daily at 8.30 a.m. by Steward's Instruments.)

THE LANCET Office, March 20th, 1912.

Date.	Barometer reduced to Sea Level and 32° F.	Direction of Wind.	Rain fall.	Solar Radio in Vacuo.	Maximum Temp. Shade.	Min. Temp.	Wet Bulb.	Dry Bulb.	Remarks.
Mar. 14	30·04	S.W.	0·02	83	59	48	50	51	Overcast
,, 15	29·76	S.W.	0·01	62	51	48	48	50	Cloudy
,, 16	29·86	W.	0·11	90	52	37	38	39	Fine
,, 17	29·50	S.W.	0·03	58	46	39	40	41	Cloudy
,, 18	29·97	S.	0·17	57	48	39	42	43	Cloudy
,, 19	29·11	S.W.	0·11	80	50	39	41	42	Raining
,, 20	29·43	W.	0·10	92	49	37	38	40	Fine

The following journals, magazines, &c., have been received:—
L'Hygiène, Paper (New York), Local Government Review, Revue de Chirurgie, British Journal of Children's Diseases, Revue de Médecine, Archives of Pediatrics, Birmingham Medical Review, Albany Medical Annals, Medical Review of Reviews, Therapist, Symon's Meteorological Magazine, Tropical Medicine and Hygiene, Archiv für Experimentelle Pathologie und Pharmakologie, Medical Chronicle, Bristol Medico-Chirurgical Journal, American Medicine, Pacific Medical Journal, American Journal of Obstetrics.

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The Milroy Lectures

ON

PARATYPHOID FEVER AND MEAT POISONING.

Delivered before the Royal College of Physicians of London

BY F. A. BAINBRIDGE, M.A., M.D. CANTAB., F.R.C.P. LOND., D.P.H.,

PROFESSOR OF PHYSIOLOGY, UNIVERSITY OF DURHAM.

LECTURE III.[1]

Delivered on March 7th.

I.—B. SUIPESTIFER.

MR. PRESIDENT AND GENTLEMEN,—The following account is based on 40 outbreaks of meat poisoning in which B. suipestifer was obtained. In 28 of these the bacillus was obtained from the patients, twice from the blood, eight times from the spleen and other viscera, and in the remainder from the stools. In 21 cases it was obtained from the meat which was regarded as the cause of the outbreak. In 26 cases the serum of the patients gave a positive reaction for the bacillus which was isolated. In all these outbreaks the illness was definitely attributed to the consumption of some particular article of food. According to the evidence the illness was confined to those who ate the sample of meat, although not every one who partook of it was ill.

There are also one or two instances in which acute gastro-enteritis has followed directly on the accidental ingestion by the mouth of strains of so-called B. typhi murium which were probably identical with B. suipestifer. Shibayama described a case in which a family mixed a culture of B. typhi murium with food for the purpose of destroying mice, and subsequently prepared their own supper in the same bowl. On the following day they were all ill with symptoms of acute gastro-enteritis. The bacillus was recovered from their stools and their serum gave a positive reaction for it. Similar cases of infection have been recorded by Mayer and by Trommsdorf.

DISTRIBUTION OF B. SUIPESTIFER.

(*a*) *England.*

The bacillus has been isolated from the patients in at least six outbreaks of meat poisoning in this country; in some of these it was also obtained from the meat which caused the illness. It has also been found by Murray, Williams, and Rundle in seven cases which clinically were summer diarrhœa, and once or twice by Morgan in similar cases.

Apart from these cases, B. suipestifer has rarely, if ever, been met with in man. Nor has it been isolated either from food of various kinds or from the alimentary canal of pigs. (Savage, Bainbridge.) The bacillus is not infrequently obtained, however, from guinea-pigs (Petrie and O'Brien), and is occasionally present in mice (Bainbridge, Savage). In these animals it occurs both in health and as a cause of epizootic disease.

(*b*) *Germany.*

There is a widespread belief among German writers, of whom Hübener is the most prominent, that it has a wide distribution and is commonly present in the alimentary canal of healthy men and animals and also in food which has been subsequently eaten without causing disease. Although these writers describe the bacilli which they find as "paratyphoid" bacilli the examination of some of the strains by the absorption method makes it clear that in many, if not in all, cases they were really dealing with B. suipestifer. It has further been shown by Uhlenhuth and by Seiffert that B. suipestifer can be obtained from the fæces in from 5 to 8 per cent. of healthy pigs. An active controversy has taken place in Germany between the upholders of this view, and those who find the organism almost entirely confined in its distribution to outbreaks of disease. Without going into the details of this controversy it would appear that Hübener's view has been largely discredited.

1. *Man.*—It has been shown, in the first place, that the occurrence of B. suspestifer in healthy men is practically confined to certain areas of Germany and is not universal. Even in those districts in which its presence has been demonstrated the bacilli have been obtained in very scanty numbers from any given person, and often only once from the same individual even after repeated examination of the stools. In several districts in Germany careful and extensive examination of human excreta has failed to demonstrate the presence of the bacillus except in association with meat poisoning. Among such investigations may be mentioned those of Aumann, Sobernheim, and Seiffert. Aumann concludes that the bacillus is not more widely distributed apart from disease than other organisms such as B. typhosus or the diphtheria bacillus whose pathogenic power is undoubted.

2. *Food.*—Secondly, the earlier statement of Mühlens, Dahm, and Fürst as to the frequent presence of B. suipestifer in food has not been confirmed. The authors fed mice on a large number of samples of uncooked meat (chiefly ham and goose), which appeared healthy and were subsequently eaten by men without ill effects. Many of the mice died and B. suipestifer was obtained from their organs, although it could not be isolated directly from the meat. The conclusion was drawn by these writers that B. suipestifer was often present in sound meat and that it had therefore no causal relation to meat poisoning. The fallacious character of these observations was pointed out by Holth and by Zwick and Weichel. They found that the high mortality among the mice was chiefly due to their being fed upon an unaccustomed diet, which caused enteritis. A contributory factor was the partial starvation of the animals owing to their dislike of the food. They also ascertained that B. suipestifer was a common inhabitant of the mouse's alimentary canal, and was frequently present in the tissues of mice whatever the cause of death. Apparently the effect of this strange diet so modified the conditions of the alimentary canal of mice that B. suipestifer was enabled to make its way from the intestine into the general circulation, and there was no evidence that the bacilli were introduced by the food. Aumann has also carried out a very extensive investigation of various foods, including meat, sausages, milk, fish, bread, and vegetables, involving the examination of 707 samples. Only 5 of these yielded bacilli of the suipestifer type, and in all of them the food had given rise to disease in man.

3. *Animals.*—Thirdly, the bulk of evidence goes to show that B. suipestifer is not widely distributed among domestic animals. Two hundred samples of fæces from healthy pigs, cattle, sheep, and calves were examined by Aumann, who did not find it on a single occasion. Müller, Edenhuyzen, Portet, and Sobernheim were all almost equally unsuccessful.

It is probable, therefore, that this organism is not very widely distributed either in this country or in Germany, and that its occurrence, either in man, in food, or in the domestic animals, is infrequent except in association with meat poisoning. An exception to this statement may perhaps be made as regards pigs; although the evidence is not unanimous it undoubtedly occurs from time to time in the pig and is relatively frequent in this as compared with other animals. It is also commonly present in the intestine both of mice and of guinea-pigs.

The evidence as to the distribution of B. suipestifer may be summarised as follows:—1. Its normal habitat is the alimentary canal of mice, guinea-pigs, and of pigs; it is rarely obtained from other domestic animals. 2. In meat poisoning in man it has been frequently isolated from patients and from meat. 3. Apart from such outbreaks, it is rarely obtained either from the human alimentary canal or from food.

THE RELATION OF B. SUIPESTIFER TO MEAT POISONING.

The foregoing facts as to the distribution of B. suipestifer furnish good grounds for regarding it as a cause of meat poisoning. Confirmatory evidence is afforded by the fact that the patients not only excrete the bacillus but elaborate agglutinins for it. While admitting the frequent association of this bacillus with outbreaks of meat poisoning some have supposed, however, that it is not the true cause of the disease, but is merely a secondary invader. The view has been put forward that meat poisoning (like swine fever) is

[1] Lectures I. and II. were published in THE LANCET on March 16th (p. 705) and 23rd (p. 771), 1912, respectively.

caused by a filter passer. But attempts to demonstrate the existence of a filter passer in cases of meat poisoning have been unsuccessful. It is, further, necessary to assume, if this view be correct, that B. suipestifer occurs very often either in the human intestine or in food; and this assumption is not in accordance with the facts.

It may be fairly concluded, therefore, that B. suipestifer causes meat poisoning. This conclusion is not invalidated by the observation that the bacillus may occasionally be ingested in small numbers by man without producing evil effects. This happens in the case of admittedly pathogenic organisms; it is known, for instance, that B. typhosus is occasionally taken into the body and excreted without giving rise to clinical symptoms of disease. Indeed, the capacity of almost every organism to produce an infection must always depend in part upon the number of bacilli entering the body and upon the susceptibility of the individual.

EPIDEMIOLOGY.

One of the most striking features of outbreaks due to B. suipestifer is the frequency with which the meat to which the illness was attributed was derived from the pig. The analysis of 28 outbreaks shows the following to be the sources of the food: pig, 16 cases; cow, 9 cases; horse, 3 cases. In eight cases the animal was ill at the time when it was slaughtered, and in several, probably all, of these cases it was suffering from infection with B. suipestifer. In the other outbreaks there is no evidence that the animals whose flesh was eaten were diseased, and in several instances they are stated to have been perfectly healthy when slaughtered.

Meat may become infected with this bacillus in one of two ways. On the one hand, the organisms may reach the tissues and the muscles during life as a result of a septicæmia. The outbreak at Aertrycke, for example, followed the consumption of meat from a sick calf, and B. suipestifer was isolated from its bone marow, which clearly indicates the existence of a blood infection during life. On the other hand, post-mortem contamination of the meat may follow careless handling in the slaughter-house: we may probably regard as examples of this mode of infection cases of meat poisoning in which one part of the animal (e.g., a leg) causes disease, whereas the remainder of the carcase is eaten without ill effect.

Illness in man caused by meat infected *intra vitam* is more serious but less common than that due to the post-mortem contamination of meat. It is less frequent because the routine inspection of meat and the laws against emergency slaughter minimise the probability of the consumption of food from a diseased animal. It is more serious because the bacilli are liable to occur throughout the substance of the meat; and it has been shown, more than once, that the ordinary process of cooking does not necessarily kill the bacilli in the centre of a joint of average size or even in a sausage.

In the pig the most important cause of intravital infection with B. suipestifer is swine fever, in which it makes its way into the blood. And Mayer and Tiberti have noticed the simultaneous prevalence of swine fever and of meat poisoning. No such relationship, however, has been observed in this country.

POST-MORTEM CONTAMINATION.

In two only of the outbreaks caused by food derived from the pig was the animal diseased; in most, if not all, of the others the meat must have been contaminated after the animal was killed. It is not difficult to understand the relative frequency of post-mortem contamination in pigs as compared with other animals. They are the only domestic animals used for food in whose intestine B. suipestifer occurs with any frequency. The contamination of the meat with the contents of the pig's intestine through careless handling in the slaughter-house must therefore offer opportunities for its occasional infection with this bacillus. Another possible source of contamination is mice, which not only at times excrete B. suipestifer, but may also be a means of conveying infected (fæcal) material directly to meat in the slaughter-house or elsewhere.

These modes of contamination will affect in the first instance only the superficial layers of the meat, and unless this has been kept long enough to allow of extensive multiplication and spread of the bacteria cooking will destroy the organisms. This point is of considerable importance, since if meat is kept for some days before being cooked and the organisms have penetrated deeply into the meat, which is an admirable culture medium, they are more likely to escape destruction when the meat is eventually cooked. It has been noticed, in fact, that meat infected with B. suipestifer, which was harmless when cooked and eaten at once, caused illness when the remainder was cooked and eaten two or three days later. This is possibly the explanation of the fact that in this country pork pies and sausages have been responsible for many of the outbreaks of meat poisoning caused by B. suipestifer. But the processes involved in the preparation of these foods further tend to a uniform distribution of the bacilli, and therefore increase their chance of escaping destruction by cooking.

The difficulty of tracing the infection of the meat to its source is often very great, as is shown in a report by Pick and Thomson on a recent outbreak at Chesterfield. The illness was caused by the consumption of pork pies, and B. suipestifer was obtained from the pies and the patients. The pies appeared good, and the conditions of manufacture were excellent; but the premises used for slaughtering and gut-cleaning and those used for preparing the pies and jelly were not completely separated. The only opportunities for the contamination of the food were the infection of the jelly, either while being prepared or when placed to cool. The authors believe that the jelly was contaminated when it was cooling; during that time it was placed in a passage joining the slaughter-houses to the premises in which the pies were made. They trace the infection of the jelly to contamination by hand or by dust.

We may conclude that post-mortem contamination of meat with the contents of the pig's intestine is probably the usual cause, although the actual method of infection in any given case is often difficult to ascertain. The possibility that mice and flies may contaminate meat cannot be excluded, but definite evidence on this point is lacking. The infection of meat by human carriers of B. suipestifer is unknown.

II.—B. ENTERITIDIS (GAERTNER).

Gaertner's bacillus has always been accepted as a cause of meat poisoning. This belief is fully confirmed by more recent evidence as to its distribution and by two cases of infection which are almost comparable with laboratory experiments. In one instance sausages had given rise to symptoms of meat poisoning. The inspector of the slaughter-house did not believe that the illness was caused by the sausages, and in order to demonstrate their harmless nature he consumed a considerable quantity of them. Within a few hours he was seized with acute gastro-enteritis and died; B. enteritidis was isolated from his organs and from the sausage. In a second case a cow was injected intravenously with B. enteritidis (Gaertner) which was isolated from a recent epidemic of meat poisoning and was killed 20 minutes later. A portion of the meat was kept for three days at room temperature and was then found to contain the bacillus in large numbers. This meat was deliberately eaten by 53 people, of whom 15 became ill; fortunately no deaths occurred.

DISTRIBUTION.

The difficulties which have been discussed with regard to the distribution of B. suipestifer hardly arise in the cases of B. enteritidis (Gaertner), since it can be readily identified by its agglutination reactions. It occurs very rarely either in the excreta of healthy men or in those of individuals suffering from diseases other than meat poisoning. In this country Savage examined the fæces of 58 persons, some healthy, others suffering from enteric fever. From one of the latter B. enteritidis (Gaertner) was isolated; the remaining 57 cases were negative. It was also isolated on four occasions by Morgan in the course of his inquiry into the causation of summer diarrhœa, in which over 300 samples of fæces were examined. Quite recently Dean has obtained it from the gall-bladder and from the stools of a patient suffering from gall-stones. With the exception of these cases it has not been obtained in man apart from meat poisoning; and the investigation by Bainbridge and O'Brien of the organisms isolated from the fæces of about 300 enteric convalescents yielded a completely negative result. The careful work of Aumann indicates that B. enteritidis (Gaertner) is equally infrequent in Germany. He found it on 18 occasions during the examination of 765 samples of human excreta. In many of these the presence of the bacilli was associated with the symptoms of meat poisoning.

It cannot be regarded, therefore, as a normal inhabitant of the healthy human alimentary canal.

Nor is it present at all frequently either in the excreta or tissues of domestic animals or in food. Müller showed, for instance, that although pyæmia and septicæmia are quite common in domestic animals these conditions are hardly ever caused by B. enteritidis (Gaertner). There is, indeed, little or no evidence that this organism passes a saprophytic existence even in the domestic animals, since, as a rule, it has been found only in animals definitely suffering from disease. A large proportion of the animals were either calves or cows, and in many of them the illness of the animals, as far as could be observed, was caused by it. The distribution of the bacillus in other than domestic animals is very imperfectly known. There seems no doubt, however, that it may give rise to epizootics in guinea-pigs (Bainbridge and O'Brien) and in rats and rabbits (Bainbridge, Boycott, Durham). It has occasionally been isolated from mice, and is also a very frequent inhabitant of the alimentary canal of healthy grey rats, being met with whenever any large body of rats is examined bacteriologically. According to Uhlenhuth, indeed, B. enteritidis (Gaertner) is normally and constantly present in rats. It may well be that the rat's intestine is the true home of this organism, and that it reaches the alimentary canal of cattle and other domestic animals through the contamination of their food or bedding by rats. The fact that when B. enteritidis (Gaertner) is found in the domestic animals the latter are usually ill, and that it is seldom isolated from healthy cattle lends colour to this hypothesis, the more so as the bacillus is distinctly pathogenic, at least for calves. But the matter needs fuller investigation.

These points may be summarised as follows: 1. B. enteritidis (Gaertner) is frequently present in the alimentary canal of grey rats. 2. It is seldom isolated from the alimentary canal of healthy men or of the domestic animals or from food.

Occurrence in Meat Poisoning.

The total number of outbreaks of meat poisoning in man caused by B. enteritidis (Gaertner) is probably very large. There are at least 30 in which it has been definitely isolated either from patients or from the infected meat. Many of the strains isolated by earlier workers are still in existence, and their identity with the original strain of Gaertner has been confirmed in recent years. In 21 of these the organism was isolated from the patients—twice from the blood, 19 times from the spleen or other organs or from the excreta. In 22 it was isolated from the meat which caused the illness. In 9 cases the patient's serum gave a positive reaction for the bacillus.

Epidemiology.

It is impossible to deal fully with the epidemiology of these outbreaks, but attention may be called to one or two important points. I have records of 24 outbreaks in which the origin of the meat causing the outbreak and the condition of the animals from which the meat was derived are definitely stated. In 16 of these the meat was derived from cattle, in 4 from horses, and in 4 from pigs. In 16 instances (cow 13, horse 3) the animal whose flesh was consumed was either stated to be ill or was slaughtered in emergency; the latter may be regarded as tantamount to evidence of illness. The more frequent forms of disease among the cattle were either fever after calving or calf diarrhœa. In one or two cases definite evidence of the existence of septicæmia was afforded by the isolation of B. enteritidis (Gaertner) from the bone marrow of the animals. Intravital infection of the meat seems, therefore, to be more common than post-mortem contamination. In this respect outbreaks of meat poisoning caused by B. enteritidis (Gaertner) differ from those caused by B. suipestifer, since in the latter the meat is generally infected post mortem. This difference may, perhaps, account for the higher mortality (already referred to) observed in outbreaks caused by B. enteritidis (Gaertner). It is not unreasonable to expect that, owing to the more uniform distribution of the organisms throughout the meat, and therefore to increased opportunities for multiplication in intravital infection, the number of ingested bacilli would be greater than in a superficial post-mortem infection of the meat. It may be, however, that B. enteritidis is always more pathogenic for man than B. suipestifer. It is clear that the most usual source of infection is meat derived from diseased animals, but other possible modes of infection of the meat may be briefly considered. They include the post-mortem infection of the meat either by careless handling in the slaughter-house or by human carriers of B. enteritidis (Gaertner) or by animal carriers. It seems unlikely that meat is often contaminated post mortem with B. enteritidis (Gaertner) through being allowed to come into contact with animal excreta containing this organism, since it is so rarely present in healthy domestic animals, but this possibility cannot be entirely excluded.

Human Carriers.

Nor is there any evidence that illness has ever been caused by meat infected by human carriers of B. enteritidis (Gaertner). Gaertner and others have recorded secondary cases of illness arising in the course of an epidemic of meat poisoning, and apparently caused by contact with patients who had eaten the infected meat. These contact cases occurred among people who had not eaten the meat, but were associated with the patients originally attacked. But infection of this kind has been met with only during the course of the epidemic; and the infection of meat by convalescents or by chronic carrier cases has never been observed. The existence of human carriers of B. enteritidis (Gaertner) is, in fact, practically unknown at present, the only definite instance being that recently described by Dean. In a case of suppurative cholecystitis due to gall-stones he obtained B. enteritidis (Gaertner) from the bile and from the gall-stones, and also from the stools one week and again three months after the operation. The patient's serum agglutinated this bacillus at a dilution of 1 in 40. There seems no reason for supposing that this patient had ever been the source of any infection in other people. A case of this kind undoubtedly indicates the possibility that infection by B. enteritidis (Gaertner) may take place through human agency as well as from meat; but such an event has not been observed.

Animal Carriers.

The occurrence of B. enteritidis (Gaertner) in healthy rats, and to a less extent in mice, and the occasional epizootics observed in these animals raise the question as to how far they are responsible for the post-mortem contamination of meat. Their frequent presence in slaughter-houses and places where food is stored seems to offer opportunities for infection of this kind. No definite proof of such infection has as yet been brought forward, possibly because it has not been carefully sought for. We have seen, however, that the rat is an important reservoir for this bacillus; and it ought to be taken seriously into consideration as a factor in the infection of meat. It is not known with certainty, however, that the strains of B. enteritidis (Gaertner) occurring in the rat are pathogenic for man, although there is a strong presumption that this is the case. Boycott has made some observations on the relative pathogenicity of strains of this bacillus isolated from animals of one species for animals of the same or of another species. He found, on the one hand, that a strain of B. enteritidis (Gaertner) isolated in the course of an epizootic among rats was highly pathogenic for rats, but only slightly so for guinea-pigs; on the other hand, a strain of the same organism isolated during an epizootic among guinea-pigs was extremely pathogenic for guinea-pigs, but much less so for rats. He is disposed, therefore, to regard the strain of B. enteritidis (Gaertner) which occurs in a given animal species as possessing more or less specialised pathogenic power for that species. This observation is clearly of extreme importance, but it does not follow that man is insusceptible to organisms of animal origin—indeed, it is certain that he is in some cases susceptible to such organisms. The variable pathogenicity of a given organism for different lower animals has very little bearing on its possible pathogenicity for man. The increased pathogenicity for rats of the organism isolated during an epizootic among rats may well be a specialised effect resulting from the repeated passage at short intervals through animals of the same species. In this connexion it may well be mentioned that the study of epizootics in the lower animals caused by B. enteritidis (Gaertner) seems to show the mode of the spread of infection in them differs from that in man.[2]

Although the mortality in such epizootics is extremely high, the way in which infection spreads is not clear; the organism isolated from the animals is often intensely virulent

[2] This is true also as regards B. suipestifer.

for healthy animals when injected intraperitoneally, but hardly at all pathogenic when given by the mouth. In one such epizootic occurring in guinea-pigs B. enteritidis was isolated from the animals which died. One cubic centimetre of a 24-hour broth culture when given with food failed to kill healthy guinea-pigs, whereas 1/10000 c.c. of the same culture given intraperitoneally caused death within a week. It is difficult to believe, therefore, that in these cases infections spread by way of the alimentary canal, although no alternative mode of infection has yet been demonstrated. On the contrary, in epidemics in man caused by B. enteritidis (Gaertner) infection appears invariably to take place through food.

Further, bacterial viruses have been extensively employed during the last few years for the destruction of rats; many of the viruses are either pure cultures of B. enteritidis (Gaertner) or consist of foodstuff containing this bacillus. Handson and Williams have reported an outbreak of acute gastro-enteritis which they regard as caused by food which had been infected by one of the viruses. No *direct* evidence of such infection was obtained, but the epidemic occurred among persons who took their meals in the room in which the virus had been placed, the presumption being that infected animals (mice) had contaminated the food. Outbreaks of disease in man traceable to infection by a virus are, however, very infrequent, although the distribution of the viruses by unskilled persons must almost inevitably expose those who handle them to some risk of infection. The actual mode of contamination post mortem is therefore very difficult to demonstrate in any given case, although it undoubtedly occurs from time to time; animal carriers are probably the most important factor.

Finally, reference must be made to milk as a cause of meat poisoning (using this term in the broad sense already indicated). An outbreak recently occurred in which more than 100 persons were almost simultaneously affected. The symptoms were those of acute gastro-enteritis and in some cases were very severe, although no deaths occurred. The illness was confined to those who drank the milk from a cow which had recently calved and was ill at the time of the outbreak; it died a few days later. Gaertner's bacillus was twice isolated directly from the milk and also from the patients. There was a strong presumption that the cow was suffering from infection with this bacillus which reached the milk either through the mammary gland or from the animal's excreta. This outbreak is unique in being, so far as I know, the only instance in which B. enteritidis (Gaertner) has ever been isolated from cow's milk.

The main facts regarding meat poisoning may be summarised as follows:—

1. B. suipestifer and B. enteritidis (Gaertner) are rarely found in the healthy human alimentary canal. Their usual habitat is the intestine of certain of the lower animals; B. suipestifer occurs chiefly in pigs and at times in mice, whereas B. enteritidis (Gaertner) is found frequently in rats, occasionally in cattle, and rarely in other animals.

2. In outbreaks of meat poisoning caused by B. suipestifer the meat has usually become infected after death; in the majority of cases it is derived from pigs. Intravital infection also occurs.

3. In outbreaks caused by Gaertner's bacillus the meat has frequently been obtained from animals which were ill when slaughtered. In some cases the contamination of the meat doubtless occurs after death. In 16 out of 24 outbreaks the meat was derived from cattle.

4. There is but little evidence that ptomaines play any important part in meat poisoning; the majority of the outbreaks are due to meat infected either with Gaertner's bacillus or with B. suipestifer.

OTHER DEFINITIONS OF PARATYPHOID FEVER.

We may now consider two other definitions of paratyphoid fever—namely, that accepted in Germany and that recently suggested by Firth.

1. At the present time the term is used by German writers in a sense widely different from that in which it has been employed in these lectures. It is applied to all forms of disease in man which are associated with the presence of any member of the Salmonella group (with the exception of B. enteritidis (Gaertner)). Some workers even describe the illness caused by B. enteritidis (Gaertner) as "Gaertner paratyphus." Those who accept this definition entirely ignore the varying nature of the clinical symptoms which may be present, and describe as paratyphoid fever, on the one hand, an acute outbreak of acute gastro-enteritis obviously caused by the consumption of infected meat, and, on the other hand, an illness not caused by food and clinically indistinguishable from enteric fever.

This definition, therefore, is based solely on bacteriological grounds, no account being taken of the clinical or epidemiological characters of the illness with which the bacilli are associated. The fundamental fact underlying this conception of paratyphoid fever is that German writers do not recognise the distinction between B. paratyphosus (B) and B. suipestifer. They have made practically no use, certainly no systematic use, of either the absorption or the complement deviation methods which are essential for the identification of these two organisms. Consequently they use the term "paratyphoid" bacillus to describe organisms which can be readily shown to be either B. paratyphosus (B) or B. suipestifer.

Since they do not admit the distinction between these two bacilli, and do not use the methods necessary for that purpose, German writers have naturally failed to notice that they have a very different distribution in nature and give rise to dissimilar clinical symptoms. These writers, in point of fact, include under the term "paratyphoid" bacillus two organisms, and under the term paratyphoid fever two diseases. The unsatisfactory nature of this definition has been partially admitted by some German workers. Hübener, for instance, describes two forms of paratyphoid fever—one caused by the consumption of meat, and one not so caused. But this classification is very inadequate, and the foregoing definition seems to have no advantages and many drawbacks. It has tended to obscure the whole subject, and might with advantage be abandoned.

[Reference ought perhaps to be made to a form of "paratyphoid" fever which is said to be caused by B. paratyphosus (C). In some cases the symptoms resembled those of enteric fever; in others they were those of acute gastro-enteritis. The bacilli which were isolated resembled B. paratyphosus (B) in their cultural characters, but were not agglutinated by B. paratyphosus (B) serum. The fermentation reactions of the organisms do not appear to have been very thoroughly examined, and those who described them do not seem to have realised that the human alimentary canal normally contains organisms which in their cultural characters closely approach the members of the Salmonella group. This fact has been demonstrated very clearly by Morgan in a careful examination of the non-lactose fermenting bacilli present in human stools. He found that many of the cultural characters of these organisms differed very slightly from those of B. paratyphosus (B), although they could at once be distinguished from it by agglutination tests. This observation has been confirmed by Savage. It is possible, therefore, that the organisms which have been described as paratyphosus (C) had no causal relation to the illness with which they were associated, and were merely normal saprophytic inhabitants of the human alimentary canal.]

2. Another definition of paratyphoid fever has recently been advocated by Lieutenant-Colonel R. H. Firth, R.A.M.C., who suggests that the term should be limited to the disease caused by B. paratyphosus (A). His reasons for this definition are, first, that in Europe the term paratyphoid fever is often applied to cases of acute gastro-enteritis following the consumption of infected meat, and, secondly, that B. paratyphosus (B) does not belong to the "paratyphoid" group, but causes the symptoms of meat poisoning. He appears, therefore, to be of the opinion that the cases which clinically resemble enteric fever are invariably caused by B. paratyphosus (A), and that the statements made as to the presence of B. paratyphosus (B) in such cases are erroneous. It is perfectly clear, however, from Savage's description that B. paratyphosus (B) can cause an illness clinically indistinguishable from enteric fever, or from the disease caused by B. paratyphosus (A). Similar cases have been described by Boycott, Schottmüller, Conradi and Jürgens, Sacquepée and Bellot, Rolly, and many others. Moreover, almost every complication which follows paratyphoid (A) fever has been observed in the course of the illness caused by B. paratyphosus (B). Lieutenant-Colonel Firth has apparently been misled by the confusing connotation of the term paratyphoid bacilli used by German writers;

and all the evidence goes to show that paratyphoid fever can be caused by either of these bacilli.

SUMMARY AND CONCLUSIONS.

The evidence which has been placed before you makes it clear, I think, that meat poisoning and paratyphoid fever are distinct diseases (Table IV.). In the first place, they are

TABLE IV.

—	Paratyphoid fever.	Meat poisoning.
Causal organisms	B. paratyphoid (A) and (B)	B. suipestifer and B. enteritidis (Gaertner).
Latent period ...	8 to 18 days.	Usually 12 to 48 hours.
Clinical picture...	Resembles enteric fever.	Acute gastro-enteritis.
Habitat of causal bacilli	Human alimentary tract.	Alimentary tract of certain lower animals.
Mode of infection	Human carriers.	Contaminated meat.
Human carriers...	Common.	Practically unknown.

caused by different bacilli, which (though closely allied) can be distinguished by appropriate methods. Secondly, the distribution of the organisms which cause paratyphoid fever is quite unlike that of the organisms which cause meat poisoning. Thirdly, paratyphoid fever is spread by human bacillary carriers, whereas meat poisoning results from the consumption of food which is derived from infected animals or is contaminated by animal agency. Finally, the clinical pictures of the two diseases are usually quite dissimilar. It is true that, on the one hand, B. paratyphosus (A) and (B) have, although very rarely, been met with in cases of acute gastro-enteritis, and that, on the other hand, the illness following the consumption of meat infected with Gaertner's bacillus or B. suipestifer may take the form of pyrexia lasting two to three weeks. But I do not attach much importance to these exceptional cases, partly because they are exceptional, but still more because abdominal infections seem unusually liable to variability in their clinical manifestations, a case in point being enteric fever. It may, however, be admitted that the boundary-line between meat poisoning and paratyphoid fever is less well defined in regard to their clinical character than in regard to their epidemiology, and possibly they may eventually prove to be more nearly akin in some respects than now seems to be the case. In these lectures the differences rather than the resemblances between these two diseases have been emphasised, because at the present time this point of view appears the more likely to yield fruitful results in their treatment by preventive measures.

THE DIFFERENT FORMS OF THE HUMAN ELECTROCARDIOGRAM AND THEIR SIGNIFICATION.[1]

BY PROFESSOR WILHELM EINTHOVEN, M.D.,
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THE application of electrocardiography to clinical examination gives valuable data in two different ways. In the first place, it shows the time relations between the action of the ventricles and the auricles. The difference in time between the contraction of these two parts of the heart can be measured easily and accurately. Diseases such as Stokes-Adams's, in which the auricles have a rhythm different from that of the ventricles, and which sometimes give difficulties when examined by the older methods, are always immediately recognised, electrocardiographically. And further may be mentioned that a new insight has been obtained into several other diseases, among which auricular fibrillation takes a prominent place.

But this evening we shall pass over this first group of symptoms, and we shall limit our attention to the second one, which is concerned with the form of the EKG. If this form is perfect, it must be the exact expression of the changes in potential difference which take place between two parts of the human body. It is self evident that a perfect form can only be obtained by means of a perfect instrument, and it need not be mentioned that such an instrument does not exist. The capillary electrometer is not rapid enough when made sufficiently sensitive, and therefore not suitable for clinical purposes. The oscillograph suffers from the same fault, although in a less degree, and has, moreover, the great disadvantage that the movements of the recording mirror are oscillatory. On the contrary, the string galvanometer is in general sufficient for clinical purposes, and by means of this instrument we are able to approximate the exact form of the EKG. so closely that the remaining divergences from it become practically imperceptible.

Not every model of the string galvanometer is equally suitable. Even if we have at our disposal a good instrument in all other respects, the correctness of the work done with it depends in a high degree upon the qualities of a small part of the apparatus, the string, and we have further to take into consideration the magnification and the sensitiveness used.

How is the clinician to know if the curves which he has obtained with the instrument are reliable reproductions of the electrical variations under investigation? He can, it is true, correct the curves obtained by means of data determined from the properties of the instrument, and which are to be found by means of control curves. But such a correction requires a fairly detailed calculation and a reconstruction of the curve, for which reason he will be loth to apply it. And happily this is unnecessary in most cases. It is only necessary to record a control curve in such a way that an equal resistance from a rheostat is introduced into the galvanometer circuit in place of the body resistance, which usually has a value of from 1000 to 2000 ohms.

The tension of the string must be so regulated that an excursion of the image of the string of 1 mm. is equal to 10^{-4} volts. At a given moment a constant potential difference is thrown into the circuit. If the string reaches its new position of equilibrium within about 0·01 second or less, the instrument is rapid and at the same time sensitive enough for recording EKG.'s with sufficient accuracy. The deviations from an ideal EKG. which a curve recorded under these conditions exhibits are so small that in the great majority of cases they may be neglected.

To prove this we reproduce in Figs. 1 and 2 two EKG.'s which were taken from the same person by lead I. The sensitiveness of the galvanometer was accurately adjusted in both records, so that 1 scale division corresponded to 10^{-4} volts. All other conditions were also kept the same as nearly as possible, with the one exception that in recording Fig. 2 a magnification was used twice as large as in Fig. 1. Therefore the string was stretched twice as much in Fig. 2, and in accordance with this the duration of a deflection was reduced to half.

It is possible to determine the duration of a deflection to a certain degree by means of Fig. 3, which was recorded immediately after Fig. 2 upon the same photographic plate. A resistance of 2300 ohms was introduced into the galvanometer circuit from a resistance box, this resistance being equal to that found for the body of the person investigated under the conditions of the experiment. The introduction of a potential difference of 3×10^{-3} volts causes a deflection of 3×10 scale divisions, and each deflection is completed in about 0·5 scale divisions—i.e., 0·01 second. The control curve for Fig. 1, which is not reproduced here, shows deflections requiring twice as much time for their completion—i.e., 0·02 second.

Notwithstanding this important difference in deflection time, Figs. 1 and 2 show EKG.'s whose forms agree in all details, and whose various peaks have the same absolute heights within the errors of adjustment—i.e., within a few tenths of a scale division.

We are now justified in making the following conclusion. If the movements of the string could be made 10 or 100 times faster, the sensitiveness remaining the same, or even if, theoretically spoken, an instrument were available with an infinitely small deflection time, the form and dimensions of the recorded EKG.'s would not be thereby perceptibly changed.

On the other hand, if the movements of the string are sufficiently retarded, the form of the EKG. will also be altered. This is illustrated by Fig. 4. This reproduces the EKG. of the same person taken under the same conditions. The sensitiveness of the galvanometer is, just as in Figs. 1 and 2, accurately regulated so that a deflection of the image of the string of 1 mm. corresponds to 10^{-4} volts. But the

[1] A paper read before the Chelsea Clinical Society on March 19th, 1912.

string moves much more slowly, and we now see that all the peaks of the EKG. are reduced in size, whilst the ratio of the peaks to one another is markedly changed.

Allow me to make a comparison here of the requirements to be demanded of the galvanometer and the accommodation of the eye. A definite adjustment of the eye corresponds to a definite distance from an object that must be focussed sharply. Therefore two objects at different distances from the eye can not form absolutely sharp images at the same time, but the physician knows that if the image of an object at 6 metres distance is sharp, the diffusion circles caused by points farther removed are so small that they may be neglected. The accommodation for infinite distance does not differ practically from the accommodation for 6 metres. In the same way we may say that an EKG. recorded with a galvanometer, of which the deflection time is about 0·01 second, does not differ practically from the same EKG. recorded with a galvanometer whose deflection time is infinitely small.

Within these limits the form of the EKG. is independent of the instrument used, and every EKG., when and where it may have been recorded, is immediately comparable with every other EKG.

A parallel can be drawn between image formation in the eye and the recording of the EKG. in still another direction. Suppose that the accommodation of the eye is faultless in a certain case. Even then the retinal image will not be absolutely sharp and exact. The errors of spherical and chromatic aberration, and of defective centration inherent in all optical systems are also found in the eye; and, moreover, the diffraction of the light rays suffices to exclude the formation of an exact image. In the same way there are sources of inaccuracy in the recording of the EKG.; their influence may be decreased, it is true, but can never be completely avoided. I have here in mind not so much the dexterity of the observer, who must regulate the tension of the string exactly, so that the curves may be recorded in absolute measure, as the unavoidable changes in resistance, which the human body offers to the electrical current.

We must make a distinction between the real and the apparent resistance in measuring the resistance of the body. The real resistance is measured by means of an alternating current, in the same way as the resistance of an electrolyte is determined, whereas the apparent resistance is found by making use of a constant current. Under certain conditions the apparent resistance can have a value of more than twice as much as the real resistance, and the question arises, which resistance are we to take into account when regulating the tension of the string. For example, we wish that a deflection of the image of the string of 1 cm. shall exactly represent 1 millivolt, when the human body is in the galvanometer circuit. If the body resistance is large, the string must be relaxed a little; if on the other hand the body resistance is small, the string must be stretched somewhat more tightly, all other conditions remaining equal.

In case the difference between the apparent and the real resistance of the body reaches an important value, the sharp peak R of short duration will be too high in relation to the slow wave T, this being an error which is just the opposite of the error produced by a slow instrument.

How can we best reduce these errors and how large is the error remaining finally? In the first place we must make the resistance of the body as small as possible by putting those parts from which the current is lead off, the hands and the foot, deeply into a strong salt solution. Under these conditions the difference between real and apparent resistance is also reduced to a minimum. Further we must use an instrument with a thin string, thus with a comparatively large internal resistance, so that the variations of the body resistance will only have a small influence upon the current strength.

In regulating the tension of the string we can make use of a rheostat resistance, the value of which is the mean of the real and the apparent body resistance. The difference between these two values need not be larger than 400 ohms under the above-mentioned favourable conditions, so that the deviation from the mean will not be more than 200 ohms. If we take the resistance of the string to be 10,000 ohms the maximum error in the dimensions of the curves is 2 per cent.

These errors are much less in reality, because peak R is not recorded in an infinitely short time and peak T not in an infinitely long time. Moreover, an error of 2 per cent. in the absolute values of the potential difference is so small that it may as a rule be neglected in physiological as well as in clinical investigations. The error would be 0·4 mm. for a large peak R of 20 mm. height, and only 0·1 mm. for a large peak T of 5 mm.

Although we cannot attain an absolute accuracy at present, yet we may consider an EKG., when properly recorded, the exact expression of the changes in potential difference, just as we may consider the retinal image an exact reproduction of the object observed.

The Form of the Curve in Connexion with the Different Leads.

It is desirable to apply three leads in electrocardiographic investigations: (1) from the two hands, across the body; (2) from the right hand and left foot, obliquely; (3) from the left hand and left foot, lengthwise. The galvanometer must be connected to the human body in such a way that the image of the string is deflected upwards when the base or the right half of the heart is negative in respect to the apex or the left half.

Each of the three leads produces an EKG. of special form so that each has its own peculiar value. Lead I has the advantage of being applied easily in the clinic. The curve obtained is of especial value in judging peak T and certain atypical EKG.'s. With lead II the peaks are usually larger. Especially the auricular peak P is clearly shown and may therefore be best studied with this lead. In judging the wave T in cases of cardiac insufficiency lead II has the same importance as lead I. On the other hand, many atypical forms of the EKG. can be studied better with lead I than with lead II.

Lead III is most suited for diagnosing hypertrophy of the right or left ventricle. Atypical EKG.'s are also well shown by lead III. On the other hand, the wave T obtained by this lead is of no value in drawing conclusions as to the functioning of the heart. T_{III} has different heights in normal EKG.'s, is often negative, and often practically absent.

The Connexion between the Forms Obtained with the Three Leads.

From the nature of the case there must be a connexion between the curves obtained by the three different leads from the same person. If two forms are known, the third may be calculated from them. The difference between the electrical tensions of leads I and II must be equal to the electrical tension of lead III. This may be formulated: lead II − lead I = lead III. The formula holds good only in case the current which is flowing through the galvanometer exercises no influence upon the tensions present at the extremities. As a matter of fact, this influence is so small that we may neglect it without making a perceptible error. For the total resistance of the circuit containing the galvanometer and the human body is very large when compared to the resistance of the heart muscle. We may therefore assume *a priori* that the formula is exact.

We might attempt to make use of this formula when examining patients, for the sake of simplicity contenting ourselves with the recording of two leads. The curve of the third lead would then be constructed from the other two. Although the construction seems to be easy, yet its execution gives difficulties, the main cause of which lies in the fact that the peaks, which we generally indicate by means of the same letters, do not occur in identical phases of a heart's revolution. It is possible to show this in various ways—e.g., by comparing the distances between the peaks P, R, and T in the curves obtained by lead I with the corresponding distances in the curves obtained by lead II and lead III. It then appears that the peaks mentioned stand closer to one another in lead I.

A superficial examination of certain curves—for example, those of Fl. (Figs. 5, 6, 7), in which the three leads exhibit fairly large differences—might appear to favour a doubt as to the practical validity of the formula. But it is not difficult to show that the rule is also in accordance with the facts.

The simplest way to do so would be to record two or three curves by the various leads immediately under one another. Two or three large string galvanometers should be used and the images of the three strings should be projected by means of mirrors upon the same photographic plate. It seems to me that the use of a small model of the galvanometer, in which two or more strings are placed in the same magnetic

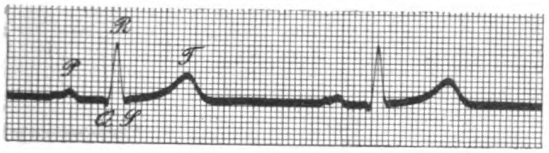

FIG. 1.—Br. Lead I. Magnification of the movements of the string 660. Absc. 1 sc. div. = 0·02 sec. Ordin. 1 sc. div. = 10^{-4} volts.

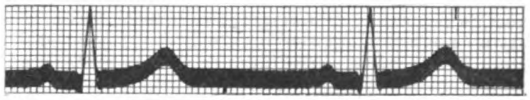

FIG. 2.—Same person and same lead as in Fig. 1. Magnification of the movements of the string about 1200. Value of abscissæ and ordinates as in Fig. 1.

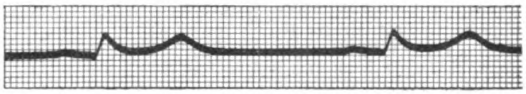

FIG. 4.—Same condition as in Fig. 1, with the exception that an extra resistance of 100,000 ohms has been introduced into the galvanometer circuit.

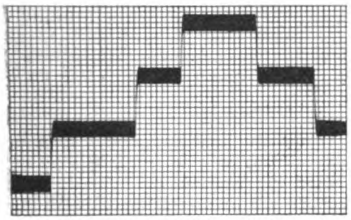

FIG. 3.—Control curve corresponding to Fig. 2. Absc. 1 sc. div. = 0·02 sec. Ordin. 1 sc. div. = 10^{-4} volts.

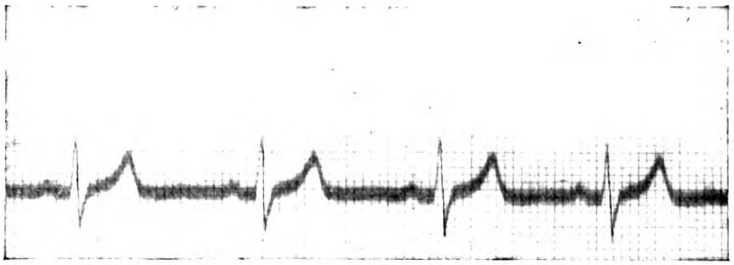

FIG. 5.—Fl., Lead I. Absc. 1 sc. div. = 0·04 sec. Ordin. 1 sc. div. = 10^{-4} volts.*

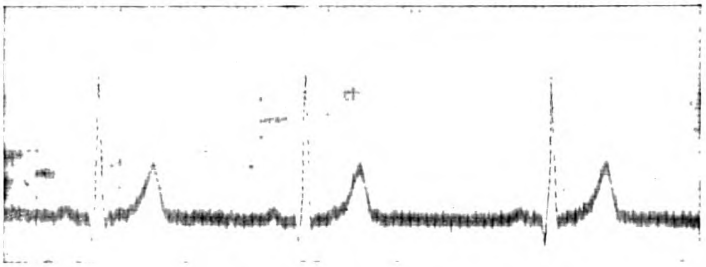

FIG. 6.—Id. Lead II.

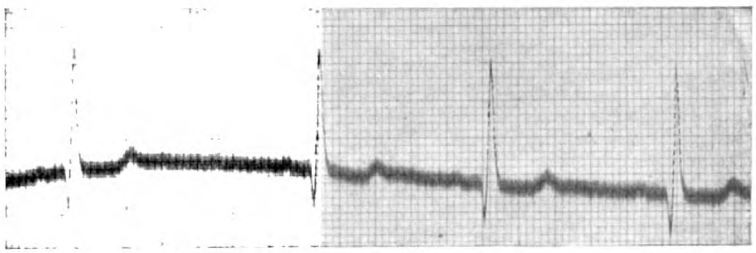

FIG. 7.—Id. Lead III.

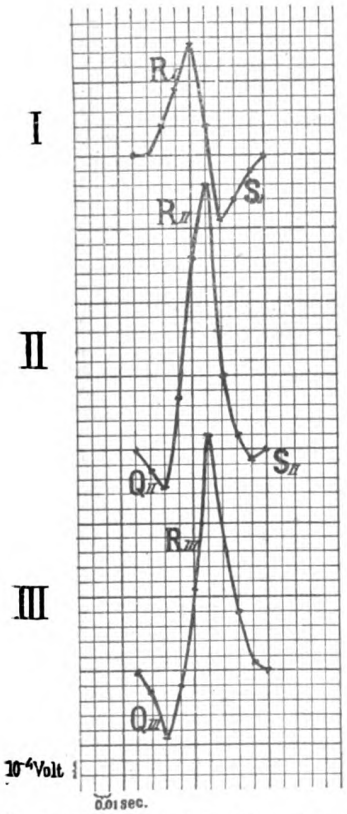

FIG. 8.—Construction of the *QRS*-group in the three leads. Each ordinate represents identical phases of a cardiac cycle. Absc. 1 sc. div. = 0·01 sec. Ordin. 1 sc. div. = 10^{-4} volts.

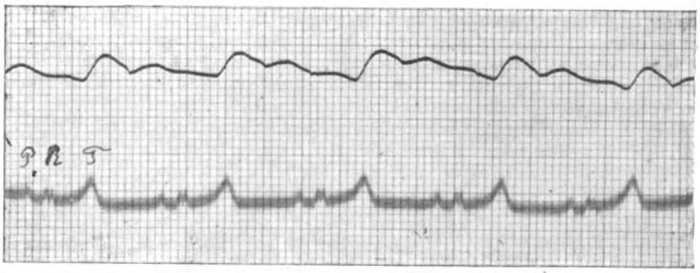

FIG. 9.—Wi. Lead I. A remarkable *QRS*-group.

* If not otherwise mentioned the abscissæ and the ordinates in all figures have the same value as in Fig. 5.

field, or the use of an oscillograph containing a number of mirrors, is not suited to this purpose, because these instruments do not reproduce the form of the EKG. accurately, whereas it is especially desirable in this case to have the form as exact as possible.

Another method has been applied by Fahr and de Waart. They have recorded the EKG., together with the heart sounds, according to the method of Kahn. The EKG.'s obtained by the three leads were taken from the same person under exactly the same conditions, the curve of the heart sounds being combined with each EKG. By this means a fixed point falling always in the same phase of a cardiac cycle could be marked, and corresponding phases in the curves of the various leads could be accurately identified.

The investigation of Fahr and de Waart shows that the ventricle EG. when obtained by leads II and III begins, as a rule, a little earlier than when obtained by lead I, whereas the summit of R_I is reached a little earlier than the summits of R_{II} and R_{III}. If we make use of these data it is not difficult to show the validity of the formula, even in complicated forms of the EKG. To illustrate this we have reproduced in Fig. 8 QRS-group of the EKG.'s of Fl. shown in Figs. 5, 6, and 7. The three curves are constructed in the same system of coördinates. The abscissæ have been increased 4 times more than the ordinates, so that the whole figure has been stretched in the direction of the abscissæ; one scale division of the abscissæ represents 0·01 sec., one scale division of the ordinates 10^{-4} volts. Each vertical line corresponds to one phase of a cardiac cycle and the formula lead II − lead I = lead III holds good for every phase. We see that the peaks Q_{II} and Q_{III} begin 0·01 sec. before R_I and fall in the anacrotic branch of this peak. The whole peak S_I falls in the catacrotic branch of R_{II} and R_{III}, whilst the whole of peak S_{II} only corresponds with the anacrotic branch of S_I.

Similar constructions can be made, as a rule, without great difficulty and can be applied to peaks P and T as well, but it is often difficult to attain a great degree of accuracy. This is especially true when the height of a small peak must be determined from the difference in the heights of two peaks of nearly the same size. If T_I and T_{II} are of approximately the same height, as is often the case, then the value of T_{III}, calculated by means of the formula, is very inexact.

It is thus evident that we should not content ourselves with taking only two leads, for the dimensions of a curve constructed by calculation can be determined not only more simply but also more accurately by directly recording it by the third lead. The great advantage of a construction as in Fig. 8 is the better insight obtained into the QRS-group.

QRS-group.

This group deserves a closer examination because it forms the beginning of the ventricular EG. and shows the path by which the excitation wave is conducted from the auricles to all parts of the ventricular wall. This group takes very different forms in normal hearts, so that it is sometimes impossible to point out the peaks Q, R, and S. The examination of even a small number of curves will show that the inconstant peak Q fails in some EKG.'s, the inconstant peak S fails in others. In some EKG.'s S is as large as R, and in some others both Q and S fail so that only R remains.

We reproduce here an EKG. of Wi. (Fig. 9), who possesses a normal heart. The curves obtained by leads I and II show large peaks R, as is often the case with normal hearts. The curve reproduced above and taken by lead I exhibits an entirely different form of the QRS-group. This group is here represented by a slight elevation, about as high as P and about one-third as high as T. On closer examination it is seen to consist of two small upwardly directed peaks, placed close beside one another. It is impossible to say whether they are Q, R, or S. The same is true of many normal as well as of many pathological curves taken with lead III. A single example of such a $(QRS)_{III}$-group may suffice (Fig. 10).

We have here again two upwardly and two downwardly directed peaks, no one of which may possibly be distinguished as Q, R, or S. T_{III} is negative in the EKG. of this person.

The explanation of the ventricular EG. is based upon this great variability in the QRS-group. As soon as the excitation wave has reached the ventricular walls through the atrio-ventricular bundle and the Purkinje fibres, the ventricular musculature begins to contract in many places at the same or nearly the same time. The atrio-ventricular bundle, according to the investigations of Aschoff-Tawara, consists of a system of muscle fibres, well likened to a tree with its branches. From their origin in the auricular septum to their arborisation in the walls of the lower chambers of the heart, these fibres are separated from the rest of the heart muscles by connective tissue. The bundle does not enter into connexion with the heart musculature excepting with its end ramifications, which are spread over a large surface in the walls of the ventricles, fusing with them at many points. The great variety of forms of the QRS-group is caused by small variations in the architecture and the conductivity of the bundle and the Purkinje fibres, so that the excitation wave in some hearts reaches the right side 0·01 second sooner than the left, or the base sooner than the apex, whereas the opposite sequence occurs in other hearts.

The contraction wave spreads over the whole ventricular musculature within a few hundredths of a second, and all changes in potential disappear temporarily. This happens in the time between group QRS and the beginning of the T wave.

The potential difference indicated by the galvanometer in any given moment is the resultant of the joint potential differences existing at that moment between the various parts of the heart. If we consider the phenomena from this point of view we may agree with Selenin, who regards the EKG. as the algebraic sum of the changes in potential, caused by the contraction of the right and left chambers. We also may agree with Eppinger and Rothberger, who assume that the EKG. is the resultant of the forces in the constrictor fibres and in the longitudinal fibres of the heart musculature. Neither is there any objection to the idea of the EKG. being the expression of the antagonism between base and apex. For we may divide the heart into two arbitrary parts, and the EKG will always be the resultant of the changes in potential differences in these parts. The curve must represent, under all circumstances and in every moment, the algebraic sum of all the potential differences which at that moment are developed in the heart.

Peak U.

We must now point out two peculiarities of the EKG. which up to the present have been considered worthy of only slight consideration. In the first place, the existence of a wave, which comes after the T wave and may have a considerable height in pathological cases. This wave U is also present in the curves from normal hearts, but in these cases it is very low as a rule. Lewis estimates that wave U is present in three-quarters of all EKG.'s taken by lead II. After an examination of my collection of EKG.'s I also conclude that the presence of peak U is very common, at least in half of all persons.

Figs. 11 and 12 are illustrations of EKG.'s with fairly high peaks U, obtained from persons with normal hearts. Fig. 11 is from a sportsman, aged 37 years, with a strong musculature; Fig. 12 is from a well-built young man, 19 years of age, of somewhat more than the average height. Wave U reaches a value of about $0{\cdot}5 \times 10^{-4}$ volts in both curves, but is not of equal height in all heart beats. This wave must be regarded as an inconstant one.

The significance of it and the reason for its inconstancy are for the present not known with surety. The method of recording the heart sounds, together with the EKG., has shown that the second sound is produced almost immediately after peak T is finished. The end of U lies after the second sound, so that there is no doubt that wave U falls wholly or partly in that phase of the cardiac cycle which follows the closing of the semilunar valves. The heart is in diastole after the closing of these valves. But the heart muscle, which does not begin to contract at all points at the same time, does not relax at all points at the same time either. A large part of the heart can have already relaxed, so that the pressure in the heart's cavities may be practically diminished to zero, and at the same time a few fibres may still be in the condition of contraction. Peak U will not have reached its end until these latter fibres are fully relaxed.

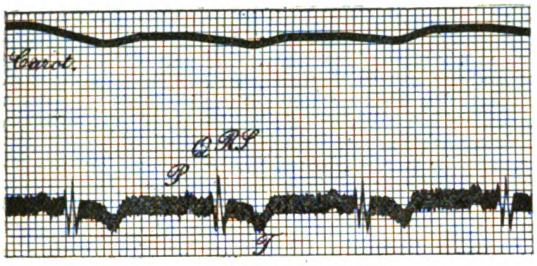

FIG. 10.—Jo. Lead III. A remarkable *QRS*-group.

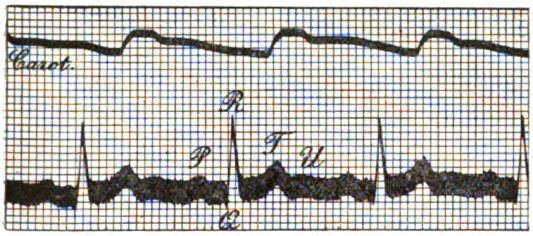

FIG. 11.—Br. Lead II. Wave *U* visible.

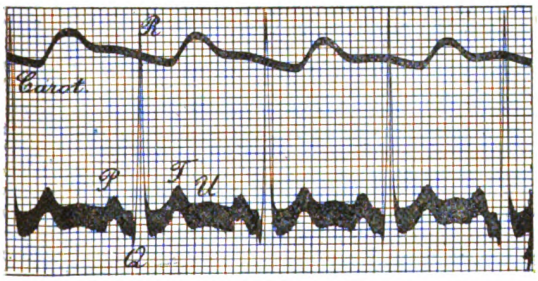

FIG. 12.—Sch. Lead II. Wave *U* visible.

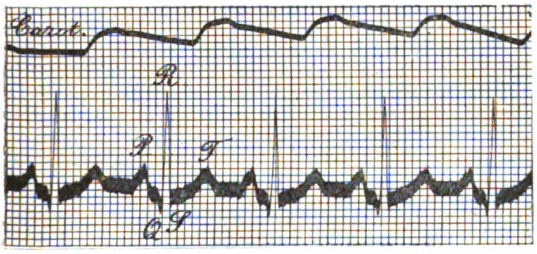

FIG. 13.—Em. Lead II. The level of the curve between *P* and *Q* is different from the level during diastole.

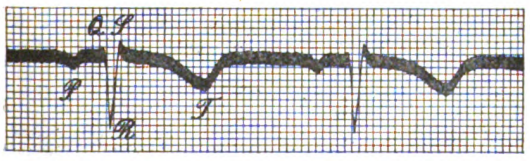

FIG. 14.—Situs inversus viscer. Lead I. Absc. 1 sc. div. = 0·02 sec. Ordin. 1 sc. div. = 10^{-4} volts.

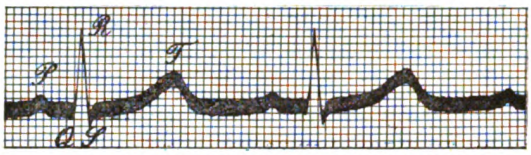

FIG. 15.—Id. The connexions of the electrodes reversed.

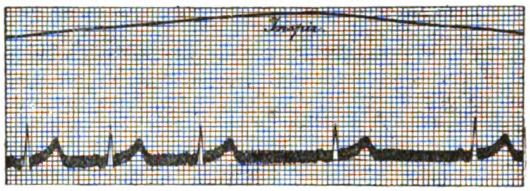

FIG. 16.—Bl. Lead I during inspiration.

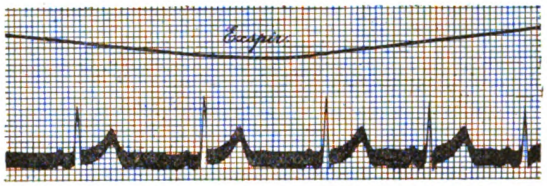

FIG. 17.—Id. Lead I during expiration.

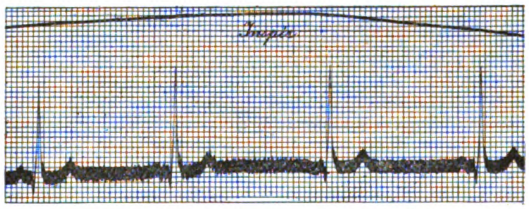

FIG. 18.—Id. Lead III during inspiration.

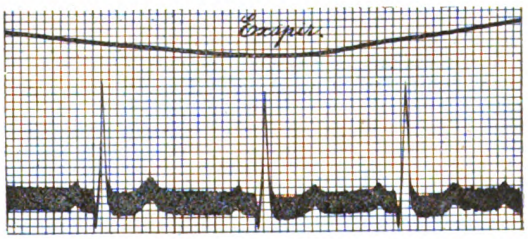

FIG. 19.—Id. Lead III during expiration.

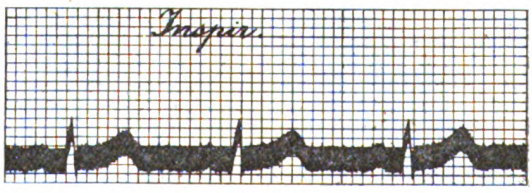

FIG. 20.—Bak. Lead I during inspiration.

The Interval between Auricular and Ventricular Contraction.

In the second place, we wish to direct attention to the position of the galvanometer in the interval between P and the QRS-group. In many cases the string takes the same position here as that held during diastole, so that a horizontal line is recorded at the level of the line of diastole. But in many other cases there is a perceptible difference in the positions of the lines. We wish to illustrate this with only one example (Fig. 13). We see in this figure that the curve between P and the QRS-group lies about 1 mm.—i.e., 10^{-4} volts lower than during diastole. To what must this be ascribed?

Is the conduction through the atrio-ventricular bundle accompanied in this case by the development of a perceptible electrical current, or is a potential difference developed even during the diastole? Have we perhaps to consider a generation of electricity effected by the same causes that produce peak U? For the present we shall not choose between the possibilities mentioned, but shall content ourselves with the information that curves like Fig. 13 are often obtained from persons with normal hearts.

The Influence of the Position of the Heart.

The position of the heart influences the form of the EKG. In electrocardiographic investigations we are chiefly interested, however, in getting a better insight into the *functioning* of the heart, and it is easy to understand that a difficulty must arise in drawing conclusions as to this point from the form of the curve, if a displacement of the organ is sufficient in itself to produce a change in the EKG.

The difficulty is best solved by making ourselves accurately acquainted with the effects of a shifting and a rotating of the heart. The easiest and at the same time the most striking example of the influence of the position of the heart upon the form of the EKG. is offered by a case of situs inversus viscerum. Waller was the first to investigate such a case, and since then a number of other cases have been published. I permit myself here, moreover, to publish a curve taken by Dr. Fahr from a boy aged 7 years by lead I. We see immediately that the peaks of Fig. 14 are exactly the reverse of a normal EKG. If we interchange the conducting wires to right and left hands we obtain a curve which cannot be distinguished from a normal EKG., as is shown in Fig. 15.

Whereas the EKG. in situs inversus may be very easily explained and gives no cause for a more extended discussion, other cases of change in position of the heart are accompanied by more complex phenomena, and these require a more detailed analysis for their understanding. We shall here discuss in particular the deviations in the position of the heart which accompany the movements of respiration.

Movements of the diaphragm participate to a greater or less extent in the respiratory movements of women as well as of men, and the heart must be displaced in the thorax whenever the diaphragm takes a higher or a lower position.

Even before the construction of the string galvanometer Samojloff demonstrated to his classes that increased respiratory movements had a perceptible influence upon the oscil'ations of the mercury meniscus of the capillary electrometer connected with the human body. By lead I the oscillations became larger in the phase of expiration and smaller in the phase of inspiration. Many other investigators have examined the same phenomena. In our description we shall make use of curves which were taken with the help of Vaandrager and later with the help of Fahr and de Waart. In Figs. 16 and 17 we see pieces of a curve which was taken from Bl. by lead I. The upper curve is the pneumogram.

The pneumogram was obtained by recording the movements of a Hutchinson spirometer into which the person under investigation breathed. A movement of the recording lever upwards corresponds to an inspiration, a movement downwards to an expiration. Each scale division of the ordinates represents 250 c.c. inspired or expired air; the amplitude of the oscillations of the pneumogram vary between 11·3 and 11·5 scale divisions—i.e., 2·8 to 2 9 litres. The vital capacity of the person amounted to 4·4 litres; thus the respiratory movements during the recording of the curves were about two-thirds of the vital capacity. These movements were sufficient for our purpose, and at the same time the subject could execute them with ease.

The pneumogram reproduces the changes in the volume of the thorax without practically any delay. This may be shown by means of the trembling of the subject at the height of inspiration. The effect of this trembling caused by the strong muscle contractions necessary for the excessive movements of inspiration is to be seen clearly in the EKG. As soon as the inspiration is ended the oscillations in the EKG. disappear, for the muscles relax and passive expiration begins. We may say that the end of the trembling coincides with the top of the wave of the pneumogram, if we neglect small differences in time—as, for example, differences of five scale divisions, or 0·2 second.

Apart from the form of the EKG. and the height of its peaks there is a striking variation in the heart's frequency during the movements of respiration. I should like to point out that the maxima and minima of the heart's frequency do not correspond with the crests and troughs of the pneumogram. For instance, the longest pause in the heart's action is found at the end of Fig. 16, the shortest pause at the beginning of the same figure, whereas the volume of the lungs is about the same in both places. The volume of the lungs is also the same at the beginning and at the end of Fig. 17, whereas the heart's frequency differs markedly in these places.

The explanation of this phenomenon is generally known; during very slow and deep respiratory movements the gases of the blood change sufficiently to influence the tonus of the vagi, especially at their origin in the medulla. As the maximum and minimum of vagus tonus do not correspond to the extreme positions of inspiration and expiration, the time of the greatest and the time of the least frequency of the heart will also be displaced in respect to these positions. This displacement varies largely from person to person. We have mentioned this circumstance here because it must be taken into account whenever the influence of the respiratory movements upon the form of the EKG. is discussed. For we know that the form and magnitude of peak P as well as of wave T can be materially changed by the action of the vagi.

In Figs. 18 and 19 we reproduce two pieces of a curve, which was taken from the same person by lead III. The influence of the vagi upon the form of peak P is shown very clearly in these figures. After long heart pauses P is small, sometimes diphasic, other times totally negative, whereas P has its normal form and magnitude after small pauses—i.e., with increased frequency and decreased vagus tonus.

The above mentioned facts make it evident that we meet with a difficulty when estimating the influence upon the form of the EKG. of a displacement of the heart caused by the respiratory movements. Peak P is influenced by two factors, and it is not easy to separate them from one another nor to estimate the magnitude of each alone. We shall therefore concentrate our attention upon some other peaks of the curve.

We see from Figs. 16–19 that the peaks of lead I are larger during expiration, whereas by lead III they become smaller during the same phase of respiration. If we consider these facts in connexion with the formula, lead III = lead II —lead I, we must conclude that the changes in the peaks of lead II will be very slight. And this is, in fact, the case with Bl. and with the majority of the persons investigated. The practical result of this is that we must apply this lead when examining a patient if we wish to investigate the form of the EKG. as free from the influence of the respiratory movements as possible.

Further, we wish to remark in the above figures that peaks R and T are both decreased or both increased in the same degree as well in lead I as lead III during the various phases of breathing. Thus the relative heights of the peaks remain the same, so that the curve retains its form.

But similar changes are not observed in all persons. In some persons we find differences which upon superficial examination seem to be wholly irregular and thereby puzzling. We shall first describe some of these differences separately, and shall then try to unite them all under one point of view.

In the first place we shall direct attention to the fact that the changes which peak R undergoes are, in many cases, materially larger than the corresponding changes in T. Figs. 20, 21, 22, and 23 are examples of this. Figs. 20 and 21 reproduce the EKG. of Bak. by lead I. Two pieces have been cut out of the original curve in such a way that Fig. 20 renders that portion of the record taken in inspiratory position, and Fig. 21 renders that portion taken in expiratory position. In this latter figure we see that the enlargement of peak R is materially greater than that of the T wave, whereby the curve receives quite another shape.

An even greater disparity is brought to light in Figs. 22

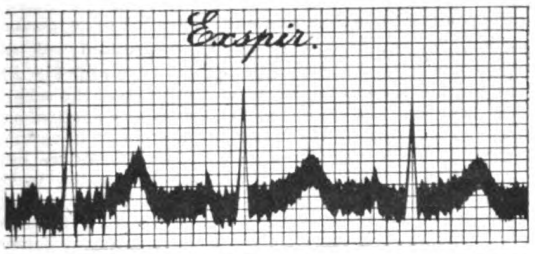

FIG. 21.—Id. Lead I during expiration.

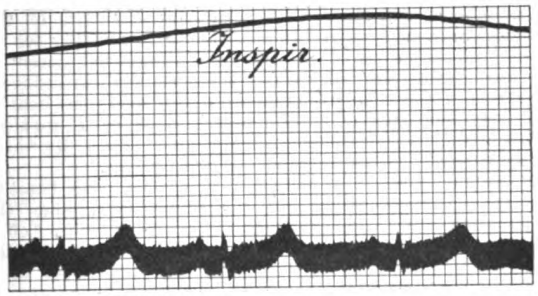

FIG. 22.—Wi. Lead I during inspiration.

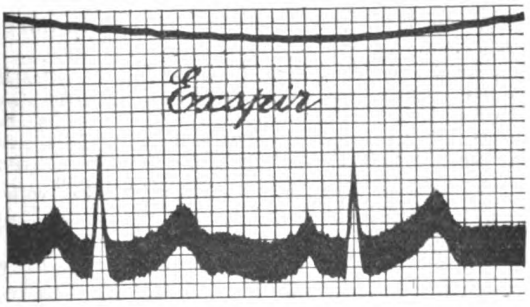

FIG. 23.—Id. Lead I during expiration.

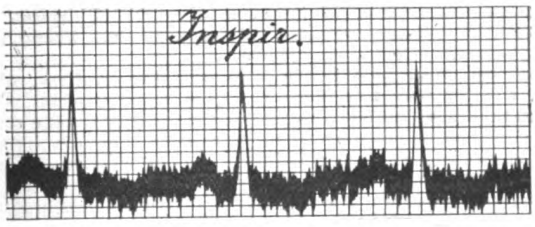

FIG. 24.—Bak. Lead III during inspiration.

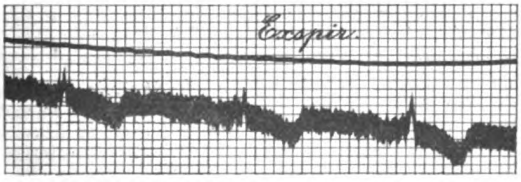

FIG. 25.—Id. Lead III during expiration.

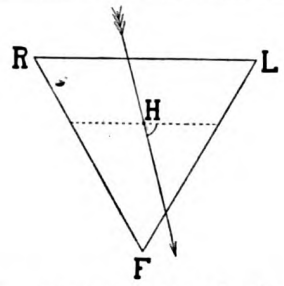

FIG. 26.—Schema of the equilateral triangle. *R* corresponds to the right hand, *L* to the left hand, and *F* to both feet. The heart, *H*, is in the centre. The arrow indicates the direction of the potential differences in the heart. $\alpha = 76°$.

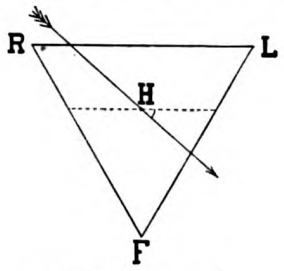

FIG. 27.—Id. $\alpha = 40°$.

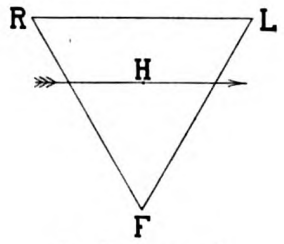

FIG. 28.—Id. $\alpha = 0°$.

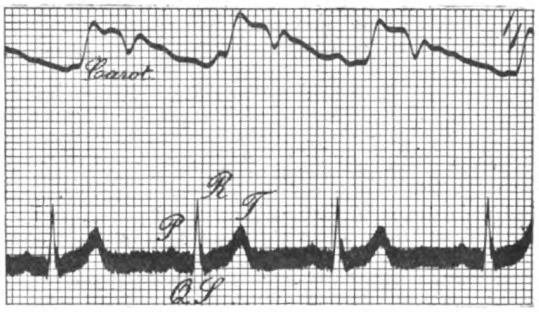

FIG. 29.—Fl Lead I, lying on his left side.

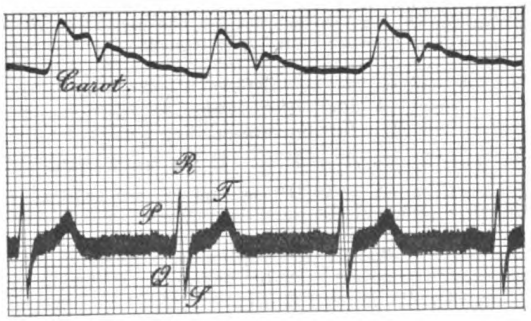

FIG. 30.—Id. with same lead, lying on his right side.

and 23, which were obtained from Wi. Here we have again two pieces of a curve taken by lead I; Fig. 22 corresponds with the inspiratory, Fig. 23 with the expiratory position of the person under investigation. In the first position R is larger than T, in the second the relation is reversed.

Another difference found is that a peak which becomes larger in lead I also increases in lead III. This phenomenon occurs whenever the peaks have opposite directions in the above-mentioned leads. Figs. 24 and 25 furnish an example of this. They reproduce the EKG. in lead III of the same person whose EKG.'s in lead I were shown in Figs. 20 and 21. Wave T is negative in lead III and we see that T_{III} has increased as well as T_I. Phenomena similar to those described above are to be observed in the *QRS*-group.

But we shall now try to explain the apparently so irregular effects of the respiratory movements upon the form of the EKG. In the first place we exclude the possibility that such potential differences as are shown by our curves might be due to accidental causes—as, for instance, the muscle contractions necessary for the respiratory movements, or to a displacement of the electrodes. For if such secondary causes should exercise an influence synchronous with the movements of respiration, then the curved line which reproduces a series of EKG.'s would have to rise and fall in the same rhythm as the movements of breathing. But we see that the line drawn through the heart pauses does not show such a rhythm. On the contrary, it has in many curves an absolutely straight course, as may easily be seen with the aid of the system of square millimetres.

As a second possibility to be taken into account we may mention the influence of a changing body resistance, a hypothesis pointed out by Samojloff. The electrical resistance of the organs surrounding the heart must show during breathing rhythmic changes due to changes in the blood and air content of the chest, and these changes in resistance must necessarily influence the heights of the peaks of the electrocardiogram. But this influence is obviously small, for the curve of lead II shows only slight changes as a rule, whereas the changes produced in lead III are as a rule the opposite of those in lead I. Moreover, the fact that the relation between the heights of the peak is often changed cannot be explained by a change in the resistance of the body.

As a third cause we may mention that the manner in which the heart contracts depends upon the pressure in the thorax. The negative interpleural pressure, which increases during inspiration and decreases during expiration, mechanically influences the circulation perceptibly. But this influence is also insufficient to explain the phenomena described.

The difficulties are solved at once, however, if we apply a schema in which the human body is represented by a plane, homogeneous plate in the form of an equilateral triangle, RLF. (Fig. 26.) From its corners the current is lead off to the galvanometer. R corresponds to the right and L to the left arm, while F indicates the potential of both feet. Thus, a lead from R and L corresponds to lead I, from R and F to lead II, and from L and F to lead III. A small spot H in the middle of the triangle represents the heart. We assume that in a given moment the potential differences in the heart are so distributed that their resultant takes the direction of the arrow drawn in the figure. This direction indicates the direction of the current in the heart. The angle which the arrow forms with the side RL is called α. We shall call the angle positive if, when looking towards the front wall of the chest of the patient, the arrow rotates with the hands of the clock; negative if it rotates in the opposite direction.

We now suppose that the EKG. of a patient has a simple form in each of the three leads, so that the peaks R_I, R_{II}, and R_{III} fall in corresponding phases of a cardiac cycle, and $R_{II} - R_I = R_{III}$. If we transfer the values found with the patient to the schema we are able to determine the direction of the potential difference which has been present in the heart during the recording of R.

The EKG. of Bak. in the position of inspiration may be taken as an illustration. In his curves the following values are found for R: $R_I = 3{\cdot}2$, $R_{II} = 12{\cdot}5$, $R_{III} = 9{\cdot}3$ millivolts. In the homogeneous triangular plate with the heart in the centre these values can only be produced by a potential difference, having the direction of the arrow drawn—i.e., that $\alpha = 76°$.

In the position of expiration we find for the same person: $R_I = 9{\cdot}2$, $R_{II} = 11{\cdot}2$, $R_{III} = 2{\cdot}0$; wherefrom we can calculate that under the circumstances $\alpha = 40$. (*Vide* Fig. 27.)

Thus we are able to demonstrate by means of the schema that the heart has rotated in the chest around a sagittal axis during the movement of expiration. The amount of rotation according to the schema is $\alpha_1 - \alpha = -36°$. As we have reason to believe that the real amount of rotation in the body corresponds sufficiently well for practical purposes with the amount of rotation in the schema we shall hereafter simply consider the direction of the potential difference in the body as parallel to the direction of the arrow in the schema. The way in which α can be calculated from the potential differences recorded need not be explained in details. It may suffice to state that the calculation is simple and can be executed very quickly.

The schema can show more than the direction of the potential difference only. It also makes it possible for us to compare the values of the potential differences present in the heart itself. To make this clearer we shall introduce a new term, "the manifest potential difference in the heart," and when speaking of certain peaks, P, R, or T, we shall indicate them with the figures Pm, Rm, or Tm. By these figures is meant the manifest values of the peaks.

We define the manifest potential difference in the heart as the amount shown in one of the three leads, when the direction of the current between the points of leading off is parallel to the direction of the potential difference in the heart. We here consider only potential differences in a frontal plane. Suppose that a given potential difference in the heart forms the peaks T_I, T_{II}, and T_{III}, and that the direction of the current in the schema is represented by an arrow parallel to the side RL (see Fig. 28), then T_I is the largest of the three peaks, T_{II} and T_{III} being opposite to one another, and each equal to one half of T_I. In this case $Tm = T_I$.

The manifest value of a peak can always be calculated from the height of the recorded peaks and thus can always be expressed in absolute measure—e.g., in tenths of a millivolt. This calculation is also easily and quickly made. If we apply it to peak R of Bak., the dimensions of which have already been given, we find $Rm = 13 \times 10^{-4}$ volts in the position of inspiration, $Rm = 12 \times 10^{-4}$ in the position of expiration.

In another person a rotation of the heart of $-12°$ was brought about by expiration, Rm amounting to 27×10^{-4} volts in a position of inspiration and to 26×10^{-4} volts in a position of expiration. In a third person a rotation of $-20°$ was found, whilst Rm kept the constant value of 20×10^{-4} volts. In all persons examined till now the rotation takes place in the same direction in expiration, whilst the manifest height of R keeps constant within the limits of the errors of the method.

We can investigate the direction and the manifest value for T in the same way as for R. As is to be expected, T is always rotated by the movements of respiration in the same direction as R, but the amount of rotation is not exactly the same. Moreover, the manifest value of T changes—a fact which points out that other factors besides the rotation of the heart are active in the formation of T during respiration. The vagus tonus is one of these factors.

There are good reasons for assuming that the most prominent peaks of the ventricle electrogram, T and R, are brought about by potential differences localised in approximately frontal planes. This is proved by the behaviour of peak S in lead I. When a person lying horizontally upon the left side turns over upon the right side whilst his EKG. is taken, we obtain the striking phenomenon that peak S_I, which is often very small or not present at all in the first position, becomes visible and sometimes reaches a prominent height in the second position. Figs. 29 and 30, both of which were taken by lead I, furnish an illustration of the production of a large peak S_I by the turning of the body on to the right side. Fig. 29, which was recorded while the patient was lying upon the left side, shows a small peak S, which may almost be neglected, whereas Fig. 30, which was

obtained while the patient was lying upon the right side, shows a peak S so large that we are inclined to be astonished that both curves have been obtained from the same person, with the same lead, and with the exception of the body position, under quite the same circumstances.

The most satisfactory explanation of this, upon superficial examination, so puzzling phenomenon is to be found in the assumption that the heart rotates in the chest about the longitudinal axis of the body, when the body itself turns from the right upon the left side. If there is a potential difference in the heart having a sagittal direction, then a slight rotation of the organ about the longitudinal axis of the body can produce a material change in the height of the corresponding peak, and this will be especially well shown by lead I. If the potential difference has exactly the sagittal direction the peak entirely disappears. It is probable that the large differences in S in different persons, as well as its inconstancy, must, as a rule, be explained by this circumstance.

We direct attention to the fact that in Figs. 29 and 30 the peaks P, R, and T undergo hardly any change. If we conclude from the enormous change in S that a rotation of the heart has taken place round the long axis of the body, then we must also assume that the peaks P, R, and T are developed in approximately frontal planes, or in other words, in planes making relatively large angles with the sagittal plane, for thereby it can be most easily explained that under these circumstances the changes in these peaks are so small.

The application of the schema of the equilateral triangle accounts for a number of phenomena here treated of. First it is immediately obvious from the schema that a comparatively large displacement of the heart parallel to itself will only slightly affect the heights of the peaks recorded. This explains the fact that the EKG. of many persons is hardly perceptibly changed or is not changed at all during the ordinary movements of breathing. It also explains the fact that with the exception of peak S, there are only slight changes produced in the EKG., when the body is turned from one side to the other, although we must expect from the anatomical conditions that the heart has hereby taken a lower position in the chest.

The schema explains easily and satisfactorily how the various peaks of the EKG. are often unequally increased or decreased by a change in the position of the diaphragm, and why the curve of lead II shows slighter changes than the curves of leads I and III. A potential difference which is present in the heart and has a direction which in the one position of the heart makes an angle of 80°, and in the other position an angle of 40°, according to the schema, causes the formation of a peak which remains unchanged in lead II, but which is very much altered in lead I as well as in lead III. If this peak in lead II has the value $9{\cdot}4 \times 10^{-4}$ volts in the first position of the heart, it keeps this value in the second position. It increases in lead I from $1{\cdot}7 \times 10^{-4}$ volts in the first position to $7{\cdot}7 \times 10^{-4}$ volts in the second. It decreases in lead III from $7{\cdot}7 \times 10^{-4}$ volts in the first position to $1{\cdot}7 \times 10^{-4}$ volts in the second.

It is equally clear why a peak which has the same direction in leads I and III undergoes opposite changes by a displacement of the diaphragm, whereas it is either increased or decreased in both leads if it has a positive value in lead I and a negative in lead III. This is the case when α has a value between $-90°$ and $+30°$.

With the aid of the schema we are in a better position to judge the form of the EKG. under all circumstances. For instance, it is possible therewith to show that an increased frequency of the heart brought about by bodily exercise is always accompanied by a positive rotation of T and by an increase in the manifest value of this peak. In myodegeneratio cordis and in many cases of auricular fibrillation T is small in all three leads. It need not be said that Tm must also be small under these circumstances.

In cases of hypertrophy of the left ventricle we sometimes find the most prominent peak of the QRS-group in a direction represented by $\alpha = 40°$, whereas in normal hearts the value of α for this peak lies between $+40°$ and $+90°$. We see from these figures that the deformation of the EKG. in this heart affection is not, or not chiefly, caused by a change in the position of the heart. The manifest value of the most prominent peak of the QRS-group in hypertrophy of the left ventricle can reach the enormous value of 26×10^{-4} volts. In hypertrophy of the right heart we obtain, as is well known, EKG.'s of an entirely different form, to which, however, similar considerations may be applied. By means of the schema we can in general differentiate the real changes in the heart's action from the apparent ones, which are only caused by variations in the position of the heart.

Atypical contractions may also be examined with the aid of the schema. They are of great importance in the clinic, and are worthy of a special, detailed discussion, but I must conclude now.

It gives me an especial pleasure to bring to remembrance here that the human EKG. was first recorded by a London physiologist, Augustus D. Waller, who also introduced the term "electrocardiogram" into science; and that Dr. Thomas Lewis, whose extensive researches have been crowned with such exceptional success, was the first man in England who applied electrocardiography to clinical investigations.

The method of electrocardiography is still a young plant. We may reasonably expect that it will continue to bear good fruit.

A CASE OF RUPTURED KIDNEY.

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RUPTURE of the kidney is such a rare condition that it becomes a duty to report a case, especially when accompanied by conditions of peculiar interest. Morris collected 26 cases from American and English authors from 1884 to 1896 inclusive, of which 14 died and 12 recovered; and Keen, in 1896, reported 118 cases of subparietal rupture published since 1878. The causes are usually crushes, direct blows, falls from a height, or forcible flexion of the trunk antero-posteriorly or laterally, the most common being by direct violence, by buffer accidents, the passage of wheels over the ilio-costal space, or falling over a hard object, or by a fractured rib penetrating the organ, usually occurring between the ages of 20 and 40 years; it is rare at other ages, being due to occupation risks. A more rare cause is by indirect violence, or simple muscular contraction, and Morris quotes three cases which resemble the case which came under my notice. A man, walking behind a wagon loaded with sacks, observing one falling off, attempted to catch it, and was seized with sudden pain followed by hæmaturia (Clement Lucas). A girl of 14 doubled up her body in jumping, and was seized with severe pain, collapse, and hæmaturia (Caldwell). A soldier when boxing was suddenly seized with pain in his loin and died from ruptured kidney. The cause of the lesion in this type of case has been variously explained, and, as usual, the explanations are unsatisfactory in proportion to their number. Küster showed by experiment that it was due to the hydraulic pressure acting through the full vessels and pelvis causing the kidney to burst; but this explanation does not explain a case of a completely torn across kidney, like the case quoted below, nor the cases where only the fibrous capsule or cortex is torn.

Another explanation given by various authorities is that the kidney is caught between the ribs and crest of the ilium or between the ribs and vertebræ. This should give injuries of the muscle and various other organs as well and it is not generally accepted as a sound theory. Again, some authors say that the kidney is attached to the psoas muscle and in cases of a sudden strain thrown on it, the kidney being unyielding, is torn across, whilst the muscle stretches; but this would not account for the great majority of cases where the kidney lies loosely embedded in the perinephric fat.

The lesion is usually subparietal in adults, due, no doubt, to the bed of areolar tissue and fat in which the kidney lies; but in children the perinephric fat is not developed till after 10 years of age, and the kidney being separated from the peritoneum by the perinephric fascia the peritoneum is almost invariably torn in the rupture of the kidney, thus adding to the complications by opening up the abdominal cavity and increasing the mortality, as shown by the fact

that in Morris's statistics six out of seven cases under 10 years of age died. The symptoms are collapse, vomiting, local pain and tenderness, attacks of ureteral and renal spasm, and disturbance of renal function, hæmaturia, and diminution of urine. The collapse is usually profound and of long duration. The face is pale and drawn and covered with sweat. Temperature is subnormal, the pulse quick and small, and the extremities cold. The aspect of the patient for some hours is discouraging in the extreme. In some cases ecchymoses appear at the root of the penis and over the external abdominal ring (Morris). Testicular retraction due to the severe hæmaturia and the passage of clots in the ureter have been observed. A tumour from the extravasation may occur rapidly, rounded in form and dull to percussion, and fluctuation may be felt. Hæmaturia may be due to simple contusion of the kidney or by transudation. After the effects of the shock have worn off the local pain continues and is increased on respiration. The pulse becomes sharp and rapid, the skin hot and feverish, the tongue furred, and there is nausea with vomiting. The complications are numerous and dangerous: (1) continuous and excessive extravasation of blood, (2) peritonitis, (3) inflammation and suppuration of the perinephritic tissues, (4) occlusion of the ureter, (5) traumatic nephritis, and (6) extravasation of urine. Of these, hæmorrhage is the most common cause of death.

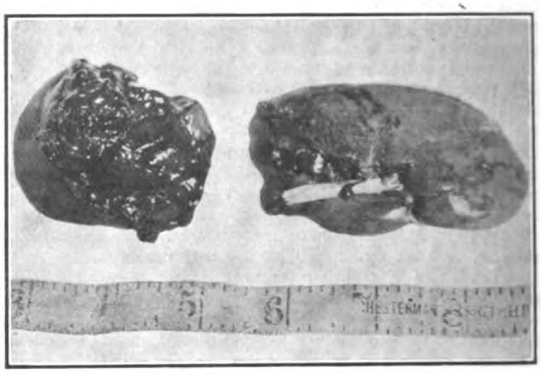
Treatment.—The effects of the shock must be combated by absolute rest, and the patient kept warm; stimulants and solid food avoided and fluids limited. The bowels should be well moved by enemata and morphia given to relieve pain. Ergot is sometimes given to relieve the hæmorrhage, but its use is of more than doubtful efficacy. No attempt should be made to at once remove the blood-clot from the bladder, as the urine has a solvent action on it. As regards operation, each case must be decided on its merits; but Morris advises early interference. In this connexion it is interesting to note that the first recorded case of nephrectomy for ruptured kidney was by the late Dr. Rawdon of Liverpool, on a boy of 12 years, who fell down steps, sustaining a bruise over the right ilium, when it was found that the kidney was almost completely torn across. He died later from cystitis due to attempts to remove the blood-clot from the bladder.[1]

A schoolboy, aged 12 years, was admitted to the Royal Infirmary, Liverpool, on the evening of July 20th, suffering from injuries caused by a fall. While returning to school after dinner in crossing a field he slipped on the wet grass and fell, his side coming into contact with the ground and (perhaps) a small stone. He was shortly afterwards picked up and carried home, being unable to walk, and seen by Dr. G. Gunn, of Neston, who found him in a state of collapse, with a frequent pulse and cold sweats. Vomiting set in and he was put to bed and kept warm. Later a couple of ounces of urine were passed, darkly stained with blood, and a diagnosis of "injury to the kidney" was made, and he was transferred to the infirmary by a motor, a distance of ten miles.

On admission at 9.45 P.M. he was conscious, absolutely blanched, bathed in a cold perspiration, pulse 108 per minute, small and weak, temperature 96·8° F., and respirations 28 per minute. The only injury apparent on examination was a small abrasion on the right side in the anterior axillary line, corresponding to the eighth, ninth, and tenth ribs, and about half an inch wide. There was no hæmorrhage from the skin nor sign of fractured ribs, and the abrasion was evidently caused by the stone. The abdomen, but more especially on the right side, was absolutely rigid and tender, and he complained of pain if touched there, the symptoms being most pronounced in the right hypochondrium. The right flank was absolutely dull on percussion, but there was no swelling or distension. He only complained of pain on being touched. There were no symptoms of renal or ureteral cramp, no ecchymosis at the root of the penis or over the external ring, and no testicular retraction. His condition was so serious that operation was deferred to see if there should be any improvement and ⅓th grain morphia was administered hypodermically, while he was packed round with hot bottles and blankets. He complained of severe thirst. At 12 P.M. he was sleeping. At 2 A.M. the pulse had risen to 120 per minute and the temperature to 100·6°. At 3.30 A.M. he was in a critical condition, with symptoms aggravated; and Mr. T. C. Litler Jones being called, decided on immediate operative interference.

[1] Vide THE LANCET, May 26th, 1883.

An anæsthetic (open ether) was administered and an incision was made 1 inch below and parallel to the twelfth rib through the muscles, and on cutting through the transversalis fascia the kidney was found buried in an enormous blood effusion invading the pelvis, diaphragm, and neighbouring organs. On turning out this clot the lower half of the kidney was found completely torn off and lying loose in the clot. (See figure.)



Reproduction of photograph of the specimen after removal.

The vessels attached to the upper portion were at once clamped and ligatured with Van Horn No. 1. catgut and the remainder of the kidney removed. The peritoneum covering it was found intact, and the blood effusion extending behind it over the diaphragm and down into the pelvis was removed as completely as possible, the cavity packed with dry sterile gauze, the muscle layers sutured with Van Horn catgut and the skin with silkworm gut, leaving an opening for the packs. He was then returned to bed, ⅓th grain of morphia was administered hypodermically and 4 oz. of salines hourly per rectum. The temperature and pulse-rate dropped immediately after the operation, but later steadily rose till 6 P.M., when they reached a maximum of 101·6° and 156 per minute. He was given small quantities of fluid by the mouth, and first passed urine (4 oz., deeply blood-stained) at 2 P.M. Morphia was again administered at 2 P.M. and at 7 P.M., and the saline continued hourly for 48 hours. The packs were removed 36 hours after operation, under gas, and the wounds repacked.

The after-history was uneventful. The wound healed without any sign of sepsis, and the boy quickly recovered his loss of blood; as the other kidney improved in tone more food was administered. He was discharged from hospital a month later apparently quite strong and well, and since then his progress has been good.

I would like to express my indebtedness to Mr. Litler Jones for permission to publish this case, and his kind assistance and advice on these notes.

Liverpool.

SALVARSAN IN SYPHILIS.

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AND
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WE have been using salvarsan, "606," in the treatment of syphilis for over a year, and we think that a short account of our experience may be of value. We have treated and followed up 200 cases which were in the primary, secondary, and tertiary stages.

A Wassermann reaction was always taken before commencing treatment, and again in six months, nine months, and a year. All cases under treatment have given a negative reaction, the reaction having been positive previous to the first injection. Two intravenous injections of salvarsan, "606," have been given in all primary and secondary cases, the injections being at an interval of three weeks, because if "606" injections are given at shorter periods there is great danger, as has been recorded in the French journals (Gaucher, Caravan, and others).

The urine has been examined daily in 20 cases, and this

has shown that arsenic is eliminated after intravenous injection for four days, and in cases of intramuscular injection arsenic is still present up to the twelfth day. Between the first and second injections of salvarsan the patients have been ordered a mercurial inunction, this being continued after the second injection for 20 days in each month for a period of six months. The preparation prescribed is "crème de mercure" (Gordon), as it is easily absorbed and is more cleanly than the official ointment.

None of the cases so treated has had a relapse or has shown symptoms of syphilis, but although at present their Wassermann reaction is negative it is impossible until further time has elapsed to regard them as cures.

We have had no serious accidents to report. In one case soon after the second injection there was an eruption of herpes round the chin and lips and on the tongue, which yielded to the ordinary treatment. Some of the cases presented slight induration at the site of the injection which soon disappeared.

In women we observed that the regular period following the injection appeared a week earlier than usual, and was sometimes profuse in character. In one patient with severe ulceration of the leg iritis occurred, but it was not due to the treatment. The dose administered has varied from 0·4 to 0·6 gramme, according to the condition of the patient.

The injections were done in three ways:—(1) *Subcutaneous.*—This method was quickly discarded as it proved too painful. (2) *Intramuscular.*—(*a*) In neutral solution; this method also proved painful and caused a good deal of induration. (*b*) In the form of an oily emulsion; this proved more satisfactory. (3) *Intravenous*—This method if properly performed is much the best way of administering salvarsan, except in those exceptional cases where it is impossible to find a suitable vein.

The apparatus we used in the intravenous method consisted of a glass cylinder of a capacity of 300 c.c. To this is attached indiarubber tubing fitted with two glass windows. The whole having been sterilised by boiling, a cannula and needle (previously sterilised in oil) are then attached. The apparatus having been filled with saline solution, it is impossible for air to enter at any time during the operation. The salvarsan solution must be prepared *immediately* before use and kept at a temperature approximating blood heat during administration. Chemically pure sodium chloride and caustic soda must be employed for the solutions. The technique is as follows.

Into a narrow-necked graduated glass cylinder of a capacity of 250 c.c., containing about 40 sterile glass beads, 40 c.c. of distilled water at a temperature of 104° F. are measured. The salvarsan, 0·6 gramme, is then gradually added, the tube being vigorously shaken to aid solution. The solution must not show (even when examined by transmitted light) any drop-like or gelatinous particles. To this are added 20 drops of a 15 per cent. caustic soda solution. A precipitate forms which redissolves on the addition of a few more drops of caustic soda solution. The clear yellow liquid is then filled up to 240 c.c. with a 0·5 per cent. saline solution prepared from sterile freshly distilled water. Each 40 c.c. of the solution now contain 0·1 gramme of salvarsan, 200 c.c. contain 0·5 gramme, so the dose required may be accurately ascertained.

An elastic band having been placed on the upper part of the arm the most prominent vein is selected at the bend of the elbow. The site of the puncture is then painted with iodine solution. The apparatus being filled with saline solution care must be taken that all air is expelled. The needle is then run into the vein, when blood will be seen to flow back by the glass window. The elastic bandage is then removed and the saline solution allowed to pass into the vein. If this takes place readily with no swelling at the site of the injection, the salvarsan solution is then slowly added to the saline until the required amount is given. Saline solution is again added until the liquid entering the vein is quite clear.

If swelling occurs at the site of injection it is caused by the needle having pierced the side of the vein; in that case it is advisable to remove the needle and select another vein. The presence of salvarsan solution in the tissues will cause painful induration and sloughing might occur. It may happen that the liquid does not flow freely, the point of the needle having come in contact with the wall of the vein; this is obviated by either raising or depressing the point of the needle.

There should be no local reaction. A general reaction nearly always occurs and varies in intensity according to the condition of the patient and the amount of salvarsan given. During the injection the cheeks generally become pink and some patients complain of a metallic taste in the mouth. An hour or two after the injection there is likely to be a rigor and the temperature may rise to 101°–102° F., with, perhaps, headache and vomiting. This condition quickly passes and the patient feels well soon afterwards. During the last few months we have observed that cases of vomiting have occurred less frequently. Whether this is due to an improvement in technique or the salvarsan supplied by Ehrlich being purer we cannot say. It is hoped by the particular combination of salvarsan and mercury to attain a means of preventing the development of tabes and paralysis.

There can be little doubt that Professor Ehrlich by his recent work has added a most valuable drug to our Pharmacopœia.

CLASSIFICATION IN GYNÆCOLOGY.[1]

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CLASSIFICATION marks the transition of any subject of inquiry from being a mere collection of observations and theories into being a science. In other words, no subject becomes a science until it is sufficiently well known to admit of the logical and orderly arrangement of its details. If this test be admitted, gynæcology is still a very young science, if, indeed, it has yet reached the scientific stage. As an art it has, of course, reached a high level.

The first attempts to give an orderly account of the diseases of women in this country seem to have been made in the later third of the nineteenth century. Thus the third edition of West's "Lectures," published in 1864, and the third edition of Grailey Hewitt's book, published in 1872, both contain traces of arrangement into diseases of the vulva, vagina, uterus and other organs. In 1877 Lawson Tait published a small book with a definite anatomical classification, and the same arrangement was used by Barnes, whose second edition appeared in 1878. From this date until the present time most books on the diseases of women have been arranged on the same plan, though some are conspicuously free from any attempt at logical classification. The object of the present paper is to examine the nature and results of this anatomical classification, and to find out if it is the best that can be made now, as it doubtless was when it came into use.

Though it may have been useful as a "preliminary effort," it is not only an artificial division, but a bad one of its kind, and it has been made worse by faulty application. For a number of conditions which are not conditions peculiar to women have been brought in. Such are the various skin diseases described under the headings "Vulva" and "Mons Veneris"; symptoms like pruritus, and affections of the bladder, urethra and rectum. Naturally the gynæcologist has to treat them; but when he is trying to give a scientific account of diseases of the female reproductive organs he might at least relegate other matters to an appendix. Conditions do not always appear in the appropriate anatomical division. Thus cystocele and rectocele are often called diseases of the vagina, prolapse and retroversion being placed amongst diseases of the uterus, while all four are really abnormalities of the pelvic connective tissue. These are all avoidable errors in the application of the system.

But the division itself is to blame for splitting up and multiplying diseases. Gonorrhœa, for example, is one condition; but in books it is described in different sections under vulva, urethra, vagina, cervix, uterus, tubes and ovaries. Thus facts which should be together are scattered abroad. Further, local pathological processes are made into separate diseases, and names are given to them such as

[1] A paper read before the North of England Obstetrical and Gynæcological Society on Feb. 17th, 1912.

vaginitis, endocervicitis, endometritis, metritis, parametritis, perimetritis, salpingitis, ovaritis. These are described, each with its symptoms, signs, diagnosis, prognosis and treatment. "It is a dull and obtuse mind," said Calvin, "that divides in order to distinguish; but it is a still worse which distinguishes in order to divide." The older gynæcological writers may not have distinguished between ovaritis and salpingitis with the conscious intention of dividing them, but their writings have effectively separated these processes in the minds of their followers. Nor can the use of the anatomical system be said to be successful in practice. Senior students and young graduates constantly remark that while they can make useful progress in medicine, surgery and midwifery, they are in despair about the diseases of women. Interest, intellect and industry are not wanting; the method is alone at fault. The subject presents no unique mystery. It is badly taught simply because writers and teachers persist in using the anatomical arrangement. How can the student grasp the connexion between vulvitis and salpingitis when they are separated by hundreds of pages in text-books and by the lapse of weeks in lecture-rooms? How can he help regarding ovaritis as a disease when it is described as one? How can he escape the conclusion that prolapse is a uterine trouble when it is placed among diseases of the uterus? Various other bases might be taken for the main divisions of a new system, but what is required is a natural arrangement.

The word "cancer" at once calls to mind a number of resemblances between all cases of cancer; but the term "disease of the uterus" does not suggest to the mind any resemblances between diseases of the uterus except that of place. The word "infective" conveys a number of facts concerning all cases of infection; but the word "vagina" tells nothing about any case of disease of the vagina except the site of the lesion. In short, the knowledge that a condition affects the broad ligament, the uterus or the ovary conveys much less information than the knowledge that the condition is an injury, a tumour or a malformation. In general terms, the important feature of a disease is not its site, but the way in which it departs from health—namely, its pathology. The word pathology must not be taken in its narrow sense of morbid anatomy, but must include function as well as structure, morbid processes as well as lesions. Does it not follow that the main divisions of any natural classification of diseases should be based on pathological resemblances and differences, minor features, such as the position of lesions, being used only in the subdivisions of the system?

Attempts to bring into use pathological main groups of diseases of women have been made in this country by four authors: David Berry Hart, J. W. Ballantyne, W. Blair Bell, and the present writer. In 1893 Hart read a paper to the Edinburgh Obstetrical Society on the Pathological Classification of the Diseases of Women, with a Plea for the Revision of Current Views.[2] He suggested 11 headings as follows: (1) Congestive (vascular ruptures included); (2) Hypertrophy; (3) Atrophy; (4) Traumatism; (5) Simple Inflammations; (6) Micro-organismal (includes pathological versions); (7) Herniæ (prolapse, &c.); (8) New Growths; (9) Displacements (inversion only); (10) Developmental Errors; and (11) Neuroses.

Ballantyne published his "Essentials of Gynæcology" in 1905. His classification of the diseases of women was in 10 headings. He put hypertrophic and atrophic states together, although they are opposite in nature. He included extra-uterine pregnancy, which is midwifery; and also sterility and menstrual anomalies, which are symptoms rather than primary conditions. Hart and Ballantyne both include "neuroses," which would generally be regarded as disorders of the nervous system, rather than of the female reproductive organs.

In his "Principles of Gynæcology," published in 1910, Dr. Blair Bell also uses ten headings. One of these is "Disorders of the Normal Physiological Conditions in Relation to Menstruation," and this, like Ballantyne's "Menstrual Anomalies," deals with symptoms, not with primary conditions. Another heading is "Disorders of the Normal Conditions in Relation to Conception," which, again, is midwifery. Various conditions which are not primary disorders of the female reproductive organs are included under the heading, "Allied Morbid Conditions."

Thus Ballantyne's and Blair Bell's arrangements are not faithful to their main basis of division, and they poach on obstetrical ground. Hart's plan, if the heading "neuroses" be omitted, is free from these defects; but it suffers with the others from the fact that the student cannot easily keep in mental view so many as ten groups of conditions.

For some years I have been using six main divisions both in clinical teaching and in my own systematic work.[3] They were suggested by the arrangement of specimens introduced by Professor Lorrain Smith into the pathological museum of the University of Manchester, and thus have the sanction of professional pathologists. They are: (1) Developmental Errors; (2) Vascular Changes; (3) Mechanical Conditions; (4) Results of Infection; (5) Progressive Conditions; and (6) Retrogressive Conditions.

1. "Developmental Errors" must, for gynæcological purposes, contain two sub-groups: (*a*) congenital errors; and (*b*) errors in development at puberty, for the reproductive organs have two phases of development, one embryonic and fœtal, the other occupying the years immediately preceding and following puberty.

2. "Vascular Changes" includes active and passive hyperæmia as recognised at first by symptoms and later by hypertrophy and fibrosis respectively. This group also includes varicosity of the veins in the pelvis and hæmorrhage into the pelvic organs, the pelvic cellular tissue, and the peritoneal cavity.

3. "Mechanical Lesions" is a large and obvious group containing injuries, displacements, and herniæ.

4. "Results of Infection" is a main division which should be subdivided according to the organisms present in each case. In this group the few cases of primary pelvic parasitic disease may be included without gross impropriety.

5. "Progressive Conditions" includes overgrowths, cysts and new growths. Perhaps this group should be divided. But it is hard to draw the line between hypertrophy and adenoma of the endometrium or between innocent and malignant new growths.

6. "Retrogressive Conditions" occur mainly in connexion with the menopause, but the reproductive organs share in the general changes of senility.

Further, there are errors in the retrogressive changes which are characteristic of normal menstruation, ovulation and involution. I have found that the use of these main groups has certain advantages. The division is logical and is based on the most important resemblances and differences between morbid conditions—namely, the pathological. It is familiar to students of medicine, and the headings are so few that they can easily be remembered. If the student is able to place a case in one of these groups, he has made a definite step towards a complete diagnosis and has gained some useful information about the patient. But it is, of course, a division of conditions, not of patients, for a woman can have two or more conditions at the same time (infection and new growth, for example).

Such a division has the further advantage that it does not magnify symptoms and pathological processes into diseases. Nor does it lead to confusion between primary conditions affecting the reproductive organs and general diseases such as phthisis, rickets, anæmia, and myxœdema, which often lead to the appearance of gynæcological symptoms. Such symptoms of general diseases may well, like diseases of the female bladder, urethra, and rectum, be mentioned by the gynæcologist in teaching; but it is better that they should be kept out of any classification of diseases of the female reproductive organs which aims at being scientific and logical.

Those who have written text-books and arranged courses of lectures according to the anatomical plan can hardly be expected to approve of the changes now advocated, though the use of pathological main groups saves much space and prevents much repetition. Again, students taught to use a pathological main division, unless well informed and agile in mind, might easily fail to please examiners of the anatomical generation. Thus mental inertia and the fear of the examiner tend to perpetuate the anatomical grouping. But it cannot last much longer, and the writer hopes to see the day when it will not be used in any course of lectures delivered in this country nor in any book which holds a place on the British market.

Manchester.

[2] Transactions of the Edinburgh Obstetrical Society, vol. xix. and vol. ii. Edinburgh Hospital Reports, 1894.

[3] Manual of Diseases of Women. William Green and Sons. 1910.

THE SEX OF THE LARVÆ OF MOSQUITOES
AND OTHER EXPERIMENTAL WORK.

BY H. A. ADIE.

(From the Malaria Laboratory at Lahore.)

THOSE interested in medical entomology have not been able, in spite of the large amount of work done on anophelines alone, to distinguish male from female larvæ in the case of mosquitoes. Working with anophelines I have succeeded in solving this difficulty.

On each side of the sixth abdominal segment of the anopheline larva can be made out, in males, a brownish oval tumidity. This can be seen with a two-thirds or a hand lens; with practice the latter is sufficient for a fair-sized larva. With a two-thirds it can be recognised on the third day. The brownish oval tumidity is the pear-shaped testis with its hard sac. On dissection it is found to be connected by a vas with a vesicula and ductus. It contains spermatozoa both formed and undeveloped. This test decides the question of the male sex. Twenty-four prognostications have come out correct on completion of metamorphosis. On dissection ovaries and spermatheca are quite clear in the female pupa, and in the case of the female larva rudimentary ovaries can be seen.

In the culex larva the testis has not the conspicuous brown colour or the hard sac, and therefore is not so recognisable.

The question has arisen, Are M. culicifacies and M. listoni distinct species or races? It is known that in some localities—e.g., Punjab plains—pure culicifacies is very common, and pure listoni only met with occasionally (Gujrat and Amritsar). In other localities, such as the Kangra and Kulu Valleys, pure listoni is very common and culicifacies a curiosity. The higher valley (Kulu) has no culicifacies. Where both are met with, as in the lower parts of the Kangra Valley, forms were obtained which diverged from their type markings, and it was sometimes difficult, if not impossible, to say to which species a particular specimen belonged. James and Liston, in their standard work on Indian anophelines, recognise this. "Indeed, it would seem that in a few places (e.g., Bombay) the prevailing variety is almost exactly intermediate between the two species." Both breed in running water and are malaria carriers, but there are some small differences in the larval characters, and in the resting attitude of the adults. In this connexion reference might be made to the African malaria carrier, M. funesta, which closely follows the description of the above two species.

From the ova of the adult listoni from the Kangra Valley and adult culicifacies from Ferozepore male and female imagines were bred out. Then from the hatched-out insects males and females of culicifacies and listoni were kept with females and males of listoni and culicifacies under as suitable conditions as possible in the cold weather. It might be pointed out that the necessary arrangements for artificial temperatures, feeding, and watching generally, required the strictest attention day and night. The mean temperature in Lahore at the time was about 55° F.

About 17 days after pairing a female culicifacies, which had been kept in a jar with a male listoni, was found to have died during the night. She was immediately dissected and seen to contain ova of apparently full size but less than the usual number. As far as could be made out they had the characters of culicifacies ova. The spermatheca did not show spermatozoa. The coming-on follicles were at figure 4 of Christophers's scale.

On Dec. 29th, 26 days after pairing, a female listoni, which had been kept in a jar with two male culicifacies in succession, was accidently killed and immediately dissected. She had less than the full number of apparently full grown ova, and concerning these a most interesting point was observed—viz., while the majority of the ova were of the listoni type, the upper surface having two fringed oval areas, a few were of the culicifacies type, the upper surface being one continuous fringed area; also one intermediate form was observed. In this case as well the spermatozoa could not be recognised. The coming-on follicles were at figure 4, Christophers's scale.

In a third experiment, male listoni and female culicifacies, the female after 22 days was found sprawled and dissected. She had only about 30 ova of culicifacies character, and not full size, but floats were present. The spermatheca was apparently empty.

Of course, it was unfortunate that the eggs could not be hatched out, but other experiments are in progress. The presumption of mating is probable, especially from the evidence of the ova in the second experiment.

The objections still outstanding are the apparent absence of spermatozoa from the spermatheca, and the possibility of parthenogenesis. In the consideration of the former objection I might point out that it has often been the experience in routine dissections in this laboratory to find, in the case of insects bred in captivity, less than the full number of ova and no spermatozoa. As regards the latter objection, so far as dissections of anophelines here have shown, we have not found egg formation in virgins.

Lahore.

ABSCESS OF THE LUNG AND LIVER:
SIMPLE CURE OF A CHRONIC CASE BY THE UPSIDE-DOWN POSITION.

BY W. E. MCKECHNIE, M.B., CH.B. EDIN.,
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THE following case is recorded to show how a serious and dangerous condition of long standing may be cured by very simple means.

A boy of 14 had coughed up pus day and night for five years. He had had some acute illness previous to the establishment of this condition. When I saw him he was stunted in growth and much smaller than his younger brother, having grown very little since the beginning of his illness five years previously. The parents had given up hope of cure, as he had undergone much treatment without any benefit. The amount of pus coughed up in 24 hours averaged about a teacupful. It was of creamy consistency and varied in colour from a brownish-liver colour to a darkish yellow; it had only a faint smell. On physical examination the base of the right lung was dull, the dulness being continuous with that of the dome of the liver; breath sounds were nearly absent, but moist râles were heard higher up; the diaphragm moved only slightly on the affected side.

From the character of the pus, the practically aseptic condition, and the physical signs, I diagnosed liver abscess with perforation of diaphragm and pleura and secondary abscess in the base of the lung, with adhesion of lung, liver, and pleura to the diaphragm in the neighbourhood of the perforation; with intermittent partial evacuation of the cavities in the liver and lung *viâ* the bronchi and trachea. Fig. 1 shows the condition diagnosed, and it is evident that

FIG. 1.

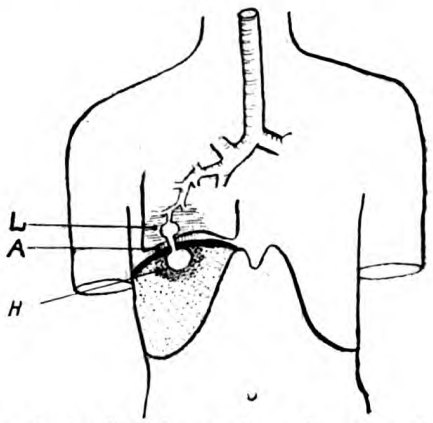


Diagram showing site of abscess cavity. L, Lung surrounding abscess. A, Adhesions between pleura and diaphragm. H, Liver surrounding abscess, adherent to diaphragm.

if such was truly the actual condition there could be little hope of such cavities healing under ordinary circumstances, as the force of gravity would prevent complete evacuation of so complicated a cavity at such a hydrostatic depth by the simple act of coughing, especially if the diaphragm were anchored to the lung and liver so as to diminish its squeezing

expulsive force. It appeared then that the cavities were only partially emptied by fits of coughing when, after filling up, the pus began to rise in the bronchi, causing irritation by its hydrostatic pressure on the lung and liver and its presence in the healthy parts of the bronchi. That this surmise was probably correct was shown by the fact that when I began treatment by inverting the patient at once a very large quantity of pus was evacuated, a full breakfast cupful—a quantity greater by far than he had been in the habit of evacuating by any one spasm of coughing.

Acting on these beliefs my treatment was simplicity itself. I made the boy hang suspended over the edge of a table, head downwards, the whole body hanging vertically upside down, the legs and thighs lying on the table at right angles to the body and thus supporting him. The position is shown in Fig. 2. In this position he was made to cough and squeeze

FIG. 2.

Postural drainage.

his chest till no more pus came out. By this means the abscess cavity was completely emptied, and he was made to repeat the process five or six times a day. At first he got rid of large quantities of pus, but it rapidly diminished, and in about six weeks he ceased to have pus and was cured. His progress was remarkable. The whole boy altered, and a year afterwards he had grown several inches and caught up his younger brother. He became active, bright, and cheerful, and was able to do his lessons with ease, instead of being very backward as he had been before. I think this is a good example of a simple application of the principle that we should allow the force of gravity to drain abscesses. This simple procedure cured in six weeks, without operation or pain, a condition which had lasted five years, had baffled other modes of treatment, threatened the life of the patient, made it a misery, and prevented his growth. No other treatment was employed by me.

I suggest that this postural method of treatment should be tried in abscess of the lung and bronchiectasis before resorting to the more formidable surgical procedures.

PULMONARY EMBOLISM AS A SEQUEL OF DIPHTHERIA.

BY D. STEWART, M.B. GLASG., D.P.H. CAMB.,
LATE MEDICAL SUPERINTENDENT, MIDDLE WARD HOSPITAL, MOTHERWELL.

PULMONARY embolism has been so rarely recorded as a sequel of diphtheria that the following notes of a case which was under my observation in the Middle Ward Hospital, Motherwell, may be interesting.

A female, aged 4, was admitted to hospital with mild faucial diphtheria, and progressed favourably till after a fortnight's residence in hospital, when she became moderately feverish, very restless, and with signs and symptoms pointing to pulmonary trouble. Alteration of the respiratory murmur was made out over the right upper lobe, though from the increasing restlessness examination was difficult. Pneumonia was provisionally diagnosed, but the child grew very rapidly worse, with increasing lividity, restlessness, and respiratory embarrassment. Death took place within 24 hours of the first appearance of symptoms.

Noteworthy points in the case were the mildness of the primary angina and the suddenness of the onset of the fatal sequel—the pulse-rate rising from 108 to 140, and the respiratory rate from 24 to 40 in an hour. Also the temperature was not raised proportionately to the pulse and respiration rates. These points and the quick fatal issue combined to make me doubt the accuracy of the provisional diagnosis, especially as thorough auscultation had been impossible. Permission for a post-mortem examination was obtained, and a large infarction implicating the upper right lobe was found. Some dilatation of the right side of the heart was present but no gross valvular lesion.

Ransome and Corner in an article in THE LANCET of Jan. 14th, 1911, p. 94, reviewed nine recorded cases of gangrene of limbs during convalescence from diphtheria. In one of these cases, recorded by Poupon,[1] embolus in the popliteal artery was revealed by the necropsy and pulmonary embolism was diagnosed during life, but permission was not given to examine the lungs at the necropsy.

Cerebral embolism secondary to endocarditis of the left side of the heart and causing hemiplegia has been recorded fairly often in diphtheria (69 cases in literature according to Rolleston, *Practitioner*, January, 1909, p. 114), but pulmonary embolism resulting from right-sided endocarditis is rarely heard of in this connexion.

Cambuslang, N.B.

Medical Societies.

ROYAL SOCIETY OF MEDICINE

CLINICAL SECTION.

Electrocardiograms.

A SPECIAL meeting of this section was held on March 20th, Dr. SAMUEL WEST, Vice-President, being in the chair.

Professor EINTHOVEN (Leyden) gave a demonstration based on Observations of the Movements of the Heart by Means of Electrocardiograms. This was illustrated by lantern slides of the records of actual cases. He pointed out that muscular contraction and action current are dissimilar, but related to one another. Contraction is a mechanical action, but action current an electrical phenomenon. Electrocardiograms showed that the pulse is an imperfect guide to cardiac action. Differences in magnitude of the pulse do not necessarily correspond to differences in the strength of the contractions of the heart. The ventricles might contract forcibly, and yet a feeble or no pulse be produced by that contraction, because at the time the left ventricle is insufficiently full. This is the case when the ventricular contraction is not preceded by a contraction of the auricles. It could be shown also that in auricular fibrillation the irregularity of the pulse is not caused by irregularity of the ventricular systoles, but by irregularity of those of the auricles. The *pulsus alternans*, in which every second beat is small and feeble, is probably explained by slight changes in the strength of the ventricular contractions. A negative auricular effect, as shown on the electrocardiogram, is probably quite as valuable as a positive one. Tachycardia may exist, and be demonstrable by the electrocardiogram, but the pulse may not be rapid. The work of the heart cannot be judged by the pulse. By experiments on dogs, by which he had estimated the ventricular pressure, he had shown that this is related more closely to the electrocardiograms obtained than to the state of the pulse. The differences in the degree of contraction of the heart may be small, while the differences in the size of the pulse may be very great. It is possible to judge the condition of the heart muscle with greater accuracy by means of the electrocardiogram than by pressure curves obtained from the pulse.

Dr. FLORENCE BUCHANAN gave a demonstration on certain experimental observations which she had made on the heart movements of hibernating animals by means of electrocardiograms. In 11 dormice she had found that during awakening from hibernation there was dissociation of the auricular and ventricular contractions. When the animal was very torpid, showing no signs of respiratory movements for several consecutive minutes and having a pulse-frequency of from 12 to 30 a minute, the records showed only ventricular effects recurring at irregular intervals, the more irregular the lower their frequency. Apparently when the

[1] Le Progrès Médical, vol. clxiii., p. 100.

animal was in its deepest sleep only the ventricles were beating. When the ventricular frequency increased to 40 per minute auricular extra-systoles started, appearing at long irregular intervals, and each well marked and of long duration. These gradually increased in frequency and became more regular, and usually by the time the ventricular systoles had reached 100 per minute the auricular extra-systoles were equally frequent. At the time during which the auricular effects were overtaking those of the ventricles the ventricular effects were apt to become irregular, one or more being dropped, giving records like those of complete heart-block produced by vagus stimulation in other mammals. These auricular extra-systoles did not influence ventricular frequency. True auricular systoles only became visible as the season advanced, or perhaps as the number of times the animal was roused from hibernation increased. They had never occurred while the ventricular frequency was less than 58 per minute. At first they did not always regularly precede each ventricular systole. Experiments on bats served to show that evidence of heart-block, complete or incomplete, was likely to be forthcoming in those animals during hibernation.

Dr. JAMES MACKENZIE said that electrocardiograms had afforded an admirable means of accurate diagnosis in cardiac disease, and had led to great advances in our knowledge of many obscure affections of the heart. Some years ago he had attempted to explain certain forms of arrhythmia by ascribing them to contractions starting in unusual positions, and it had been very gratifying to him when Dr. Lewis had demonstrated by electrocardiograms that the auricle in such cases had gone into fibrillation. This method had also explained some cases of tachycardia, when the auricles were beating faster than the ventricles. It had helped with regard to the management and treatment of patients. He regarded the *pulsus alternans* as a condition which is not rare but always of very grave significance.

Dr. THOMAS LEWIS paid a high tribute to Professor Einthoven's work. He said that the profession was indebted to Professor Einthoven for a perfected instrument and for a method of unrivalled precision. First upon the list of their indebtedness to this instrument he would place the almost universal corroboration it had given to the findings by another method which was also new and was devised by Dr. James Mackenzie. The importance of this corroboration could scarcely be exaggerated, for the method to which he referred—the analysis of venous pulse curves—was one which could be applied by all who practised medicine. He illustrated his contention by reference to the interpretation of such irregularities of the heart's action as were produced by premature contractions or extra-systoles and by heart-block. The analysis of cardiac irregularities was a chapter of medicine fast reaching its close. It was but rarely that the galvanometer failed to disclose the nature of a disordered heart action. In the majority of instances its answer was immediate and decisive. Of cardiac irregularities one had been spoken of by Dr. Mackenzie, which, on account of its frequency and its important influence upon the life-history of the patient, had commanded close attention. He referred to auricular fibrillation. Among the first electrocardiograms of auricular fibrillation were those taken by Professor Einthoven, and it was his instrument which introduced us to auricular fibrillation as a clinical phenomenon. We were indebted to this galvanometer for our knowledge of the site of origin of the heart beat. It had shown us that in pathological states other centres of impulse formation were active in the muscle, and it had located these centres in a remarkable fashion. It was possible to-day to state, not only that a new impulse arose in auricle or ventricle, but, within certain limits, the part of the individual chamber in which the impulse had its birth could be defined. The new method had very materially advanced our knowledge of paroxysmal tachycardia; it had shown us that those crises arise, not as the result of simple disturbances of innervation, but as an outcome of new and rhythmic impulse formation in portions of the heart remote from the pacemaker. It had transpired that the galvanometer could detect not only functional disturbances of the main auriculo-ventricular bundle, but also similar defects in the main branches of it. This was a discovery of fundamental importance in the study of heart affections. In his original paper Professor Einthoven had pointed out certain relations between electrocardiographic curves and right- and left-sided ventricular hypertrophy. A great deal of evidence was now forthcoming in support of his original contention that the relative weights of the two ventricles could be estimated by this means. It would be needless for him to emphasise the importance of these observations. The examples he had given would suffice to illustrate the unquestionable and far-reaching value of the method. Electrocardiography was a growing science. Instruments were being installed in all lands where pathology and clinical medicine were actually studied. The value of the method had received immediate and universal recognition. Curves were shown to illustrate the various points.

SECTION OF OBSTETRICS AND GYNÆCOLOGY.

Exhibition of Specimens.—Extra-peritoneal Dermoid Cyst.—Cæsarean Section in a Case of Dystocia.—Pathological Classification of the Diseases of Women.

A MEETING of this section was held on March 7th, Dr. AMAND ROUTH, the President, being in the chair.

The following specimens were shown:—

Dr. H. A. LEDIARD (Carlisle): (1) Sacral Teratoma in an Infant two days old—Operation and Recovery; and (2) Large Warty Fibroma of the Labium.

Dr. H. BRIGGS (Liverpool): (1) Fibroid of Uterus of Unusual Character; and (2) Large Placenta in a case of Ectopic Gestation Three Months beyond Term.

Dr. CLIFFORD WHITE: Fœtus with Congenital Hereditary Graves's Disease.

Dr. C. HUBERT ROBERTS: (1) Demonstrations under the Epidiascope of a Three Months' Abortion, the Placenta undergoing marked Calcareous Degeneration; and (2) Sections of Ovarian Concretions (Hæmatoliths) and of the cyst wall in which they were contained.

Dr. LEDIARD read a short communication on a case o Extra-peritoneal Dermoid Cyst, which had suppurated, occurring in a patient, aged 26. who was operated upon in 1906. The tumour was of the size of a six months pregnancy and had been felt for four months. The peritoneum was raised by the growth, and incision of the abdomen revealed a silvery-surfaced tumour. The cyst contained sterile pus to the extent of two pints. Traction and finger dissection sufficed to extract the cyst without damage to the ureter or other organs. The cyst was thick-walled for the most part, and contained four teeth, nodules of cartilage, and some hairs. The patient made an easy recovery and was at present in good health—i.e., six years after operation.

Dr. HENRY BRIGGS read a short communication on Cæsarean Section in a case of Dystocia due to Loops of Cord round Fœtus at Term. He remarked that a short umbilical cord, whether absolutely short or relatively short, by being coiled round the fœtus may arrest descent and prevent engagement of the head in the pelvic brim. Such extreme cases were very rare. In Dr. Briggs's case the patient, a young woman aged 22, was admitted to the Liverpool Maternity Hospital at the full term of her third pregnancy at 10.30 A.M. on Jan. 28th, 1912. Labour had been in progress 10½ hours, and the cervix admitted the finger. Pains were slight. On the following day the membranes ruptured spontaneously, and at midday the cervix was half dilated. At 11 P.M. the same day the cervix was still incompletely dilated and the head was still above the brim. The general condition of the patient remained good, violent expulsive pains being relieved by an injection of scopolamine and morphine. The patient was first seen by Dr. Briggs after she had been 43 hours in labour, and up to the completion of the fifty-second hour the conditions seemed consistent with the birth of a living child when the cervix was fully dilated and the head engaged. After the patient had been 52 hours in labour she was examined under an anæsthetic, and the fœtal head palpated with the hand in the vagina. The sagittal suture lay nearer the pubes (Leitzmann's obliquity); the disengaged head receded readily above the brim, as if its ascent were easier than its descent; the manipulation of the head elicited the sensation of its being held from above, and the head persisted in lying transversely high up and inaccessible. The fœtal heart was beating normally. The obstruction within the uterus was beyond any safe method of attack from below. Patience in awaiting natural efforts had been adequate, if not excessive. It was therefore decided to effect delivery of the child by Cæsarean section. It was then found that there were three complete collar-like, and appreciably tight, coils round the

neck. From the navel to the neck the cord passed under the right shoulder and across the back of the chest and over the left shoulder. The pallor of the child when first delivered was alarming. After loosening the coils of cord the child began to breathe, and was still thriving. Dr. Briggs was of opinion that delivery by forceps or version would have been difficult, if not impracticable, and that the life of the child entirely rested upon the treatment by Cæsarean section.

Dr. W. E. FOTHERGILL read a short communication entitled "A Plea for the Use of Pathological Classification of the Diseases of Women."

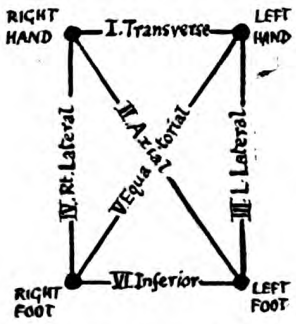
CHELSEA CLINICAL SOCIETY.

The Human Electrocardiogram.

THE annual clinical debate of this society, dealing with Disorders of the Circulatory System,[1] was continued on March 19th at the Physiological Laboratory of the University of London, South Kensington, Dr. MANSELL MOULLIN being in the chair.

Professor WILHELM EINTHOVEN, of Leyden, read a paper on the Various Forms of the Human Electrocardiogram, which will be found fully illustrated in this issue of THE LANCET.

The discussion was commenced by Professor A. D. WALLER, who said: It has been a great pleasure to all of us, and to me especially so, to listen to Professor Einthoven's lucid description of his state of mind and knowledge in this matter of the electrocardiogram. We all know the great share that he has taken in the development of our knowledge of this subject, and how his beautiful instrument, the string galvanometer (I wish it had a more beautiful name), has transformed the electrocardiogram of the laboratory into a common object of the hospital, where it is called to play its part among the time-honoured methods of clinical diagnosis. Like all new methods it has its detractors who know too little, and its zealous advocates who say too much. But in spite of both kinds of extremists I think this method will render real service to clinical medicine; indeed, as you have just heard, it has already done so. Obviously, time will not allow me to consider all the developments that have entered into Professor Einthoven's exposition. But I should like to take advantage of his visit to clear up a difference between us as regards the relative effectiveness of the several possible leads from the heart by means of the hands and feet. There are six such leads—viz.,[2] I, transverse; II, axial; III, left lateral; IV, right lateral; V, equatorial; and VI, inferior—summarised diagrammatically in the schema shown. In my first description of 1887 I classified



these six leads into two groups of three, "favourable" and "unfavourable," according as the electrical pulse was large or small. Obviously in a first survey of the matter, when the task before me was to demonstrate the physiological origin of these various derivation effects, it was necessary to review all of these six cases. But at a later stage, the facts and their common principle having been established, it became possible and necessary to simplify the six original premises. Professor Einthoven, proceeding from the observed fact that the difference in case VI (inferior) is very small, and that there is accordingly a very small difference between III and V and between II and IV, treats that difference as negligible, and reduces the experimental cases from six to three by treating the two lower limbs as equipotential. In this way, regarding the two lower limbs as one limb, he eliminates cases VI, IV, and V, leaving cases I, II, and III, which afford three cardinal magnitudes from which he calculates the position of the heart. This simplified scheme may be represented by a triangle thus, or thus, and for purposes of calculation as well as for clinical investigation is obviously convenient, although it does not take into account the small difference of potential between right and left foot.[3] In Einthoven's first account of the matter in 1895[4] he agreed with me in every particular, but a few years later, in 1908[5] he demurred to my reckoning the left lateral—i.e., III—as an "unfavourable" lead. He selects it as one of the three positions I, II, and III, and presents as a law that the magnitudes II − I = III, or I + III = II—i.e., he decomposes the axial difference of potential into its transverse and longitudinal components. I accept this mode of stating the case as being theoretically correct, but I also adhere to my own statement of "favourable" and "unfavourable" combinations, reckoning the left lateral with the latter. In the great majority of normal cases I have found the left lateral III much smaller than the right lateral IV, and the equatorial V much smaller than the axial II. Otherwise stated, I present in accordance with my diagram of 1887 the left hand in combination with either foot as the "bad hand," and the right hand as the "good hand." The two unfavourable cases, left lateral and equatorial, are approximately equal and of smaller magnitude than the two favourable cases, right lateral and axial, which likewise are approximately equal. It is hardly necessary to add that VI, the inferior, is smaller than any other. Einthoven gives the following example of his equation—the numbers express voltages of R:—II (0·0013) − I (0·0009) = III (0·0004). Obviously in this case the left lateral III was much smaller than either the transverse I or the axial II. My own numbers, obtained this year (1912), as well as the first tentative numbers of 1887–90. are of a similar order. They bear out my first statement as to the favourable and unfavourable trio in 1887–90, and bear out the statement contained in Professor Einthoven's trio. Thus in the subject now under observation the values of R in Einthoven's trio are:—I (0·0010), II (0·0014), III (0·0004). Cases are indeed to be met with in which this first ventricular spike (R or QRS) is larger in III than in I; others in which it is negative instead of positive, and if time permitted I should have an explanation to offer of this which would further justify my placing case III in the unfavourable group. Einthoven has said that I probably did so from having mistaken T for R—i.e., a second for a first ventricular wave. But I can assure him that there was never the smallest risk of my falling into this error—the double ventricular movement was clear to me from my very first observations; what troubled me at that time with the capillary electrometer was the *direction* of the first phase, which sometimes appeared to be positive, sometimes negative. Thanks to his "string galvanometer" this has been cleared up; we see readily enough on the records that the first phase is sometimes positive, sometimes positive-negative, sometimes negative, and that this is especially the case in left lateral records (III). Lead III is, I believe, Professor Einthoven's favourite lead, and it is also mine, for the reason that it is a borderland case and the most variable in form of all the six normal cases. And it is the case of most importance to study

[1] THE LANCET, March 23rd, 1912, p. 795.

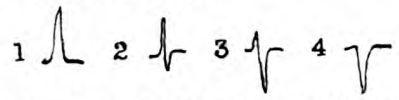
[2] I take the order as above in order that my numbers I, II, III should correspond with Professor Einthoven's I, II, III. Otherwise I should have preferred to make the right lateral III and the left lateral IV.

[3] This difference varies with the conditions of derivation of the heart—variations of the surface of contact with the diaphragm—state of the lungs, stomach, and liver. Sometimes it is too small to be estimated numerically. Sometimes it (i.e, V_I or R) amounts to a tenth of the value found for the transverse effect

[4] Pflüger's Archiv, vol. lx.

[5] Ibid., vol. cxxii., p. 552

under normal conditions as a preliminary to the study of pathological records. The first ventricular wave (Einthoven's wave *R* or *QRS*) in lead III presents the following varieties of form in various normal subjects—



and with a rather slow-moving string this last form may appear, i.e., purely negative, in striking contrast to the first form in which it is purely positive. I do not stop for any explanation, but go on to say that clinically this apparently negative response of the left lateral position has been given as characterising (1) cardiac neurasthenia; (2) hypertrophy of the left heart; and (3) a lesion of the right limb of the auriculo-ventricular bundle of Kent and His. Now it may mean any or all of these lesions—that is not for me to say; I only enter a caveat against concluding too hastily what it means, since it commonly presents itself in perfectly normal subjects. Of half a dozen random cases recently tested in this laboratory, three present it and three do not. And I am convinced that those three first cases are not cases of cardiac neurasthenia, or aortic disease, or lesion on the right limb of the *a.-v.* bundle, and I know that at least one of the three persons who do not present it has well-marked hypertrophy of the left side. I have learned to recognise when to expect this pronounced negative effect; it occurs in any case where the transverse is larger than the axial effect; it does not occur when the transverse is smaller than the axial effect, and I think that Professor Einthoven will be disposed to recognise in this an illustration of his normal equation I + III = II. I do not forget that this is a *clinical* meeting in a physiological laboratory; I have therefore confined my remarks to a particular physiological item—the varying character of the first ventricular wave *R* in lead III—because its consideration strikingly illustrates the necessity of a physiological basis as a preliminary to clinical judgment. I shall not trespass upon the clinical domain, which is to be dealt with by other speakers, Dr. Lewis, Dr. S. R Wells, Dr. Halls Dally, who have special knowledge of special aspects of this manifold problem viewed from the clinical side. I have been particularly gratified by the presence here to-day of Dr. Thomas Lewis. I have not forgotten the zeal and ability with which he first addressed himself to Einthoven's string galvanometer in this laboratory, and the acumen with which he has followed it up in the hospital. The extension of the method as a clinical method will have been principally due to the enthusiasm of Dr. Lewis, and to the special clinique which he conducts at the University College Hospital. Auricular fibrillation, or, as I should have preferred to hear it called, auricular asystole, as everyone knows, thanks to Dr. Lewis, is now as familiar on the human subject in hospital as it is upon animals in the laboratory.

Dr. THOMAS LEWIS said that it had been a peculiar pleasure to him to have seen and heard Professor Einthoven expounding his methods and his views to an audience of his countrymen. Professor Einthoven had given them a splendid address, and had provided them with much food for reflection. Continuous advance in knowledge was slow; the chief progress was in steps, and a step was the result of the introduction and application of a new method. Einthoven was one of those rare workers who had devised such a method. He wished to speak more especially of the assistance which the new method had given to students of disordered heart action. In the study of arrhythmia it had proved invaluable, so much so that this chapter of clinical medicine was rapidly closing. It was only in the rarest instances that the galvanometer failed to provide an exact analysis of the sequence of cardiac chamber contraction. Professor Waller had uttered certain warnings in regard to the value of the method in the examination of hearts which beat regularly, and had especially criticised conclusions which dealt with the variations in the shape of the ventricular complex. He concurred with Professor Waller, in that he fully recognised the necessity of a full study of the normal electrocardiogram before dogmatic assertion in respect of the abnormal curves could be justified. Rash statements had undoubtedly been made, but not by clinicians working in this country. Nevertheless, and after a close study of the subject which had lasted for four years, he could speak with confidence of the value of electrocardiograms taken from patients with regularly beating hearts. Supposing that the limits of the several peaks and depressions were ascertained in a series of 50 or more subjects, and supposing that in a patient who presented no other signs of cardiac trouble these limits were surpassed in three, four, or more directions, it could be confidently asserted that the heart was abnormal, and that it was abnormal was borne out by his clinical experience. He referred to the curves which were held to represent damage of one or other branch of the auriculo-ventricular bundle, of which Professor Waller had also spoken. He maintained that the evidence which associated these curious curves and the corresponding lesion was considerable. If the right branch of the bundle was destroyed the impulse would travel to the left and apical portions of the ventricle and give rise to a curve similar in outline to that of a premature contraction arising in this region. That might be considered all very well in theory, but it had been proved experimentally, and in cases in which the lesion had been diagnosed before death, such lesion had been found post mortem. Dr. Lewis emphasised the frequency of this sign and the importance of its association with widening of the *P–R* interval; for the two together were evidence of a widely diffused muscle damage, which probably affected not only the main bundle and its branches but also more silent areas of the heart; a parallel was drawn between the condition and the similar nervous phenomena in disseminated sclerosis. A prominent physician, speaking but a little while ago at a large London hospital, a physician who weighed his words before he uttered them, declared that an examination of the heart was incomplete to-day until the electrocardiographic examination had been undertaken. Dr. Lewis actively supported this view. The fame of Einthoven's method had spread to all parts of the world. Instruments were installed, or were being installed, at several London hospitals. There were a number in New York, and many in Germany and other countries. He looked forward to the day when Einthoven's instrument would be a part of the equipment of all large hospitals, and had no doubt that the time when this would happen was fast approaching. In conclusion, Dr. Lewis thanked Professor Waller for his kind references to his own work at University College Hospital, and for the cordial manner in which he had expressed his appreciation of the new clinical method.

Dr. J. F. HALLS DALLY made a few remarks upon the case of Adams-Stokes syndrome to which reference had been already made. The case was that of a man, aged 64, first seen in the out-patient department on May 4th, 1911. There was no history of rheumatism or of any acute specific infection. Syphilis was denied, and a Wassermann reaction proved negative. The patient was a moderate smoker and drinker. During the previous year he had occasional attacks of giddiness apart from exertion, with brief periods of unconsciousness once or twice a week, preceded by dimness of vision. These syncopal attacks had become more frequent, and were followed by dyspnœa lasting for about a minute; there was no headache or pain in the chest, but palpitation, exhaustion, and shortness of breath, together with slight cough and expectoration, were his chief symptoms. On examination the man appeared older than his years. A well-marked arcus senilis was present in both eyes. The brachial and radial arteries were thickened and tortuous, but not the temporals. The blood pressure (Pachon) registered 210 mm. Hg in systole, 105 mm. Hg in diastole. He had an apical systolic murmur communicated to the anterior axillary fold; there was some œdema of the ankles and slight albuminuria. Nothing abnormal was found in the abdomen or nervous system. A skiagram (exhibited) showed enlargement of the heart to the left, with some dilatation also of the right auricle. On screen examination the auricles were seen beating independently of the ventricles with a rhythm of their own. When first seen the pulse was of moderate volume, with occasional dropped beats and a rate of 60 per minute. Within the next month the rate diminished to 48 beats per minute, four months later to 30 per minute, and a fortnight before the meeting was as low as 28 per minute, the patient, nevertheless, being better able to get about and do ordinary light work than he was in the earlier stages of the malady. This fact coincides with the general experience that when heart-block has become complete the patients usually suffer less discomfort than during the period in which the interference with conduction is only partial.

Tracings were shown from apex and radial pulse, in many of which the beats due to auricular contraction could be distinguished, but the value of the electrocardiographic method was evidenced by a series of electrocardiograms taken with different leads (thrown upon the screen), all of which showed clearly auricular beats occurring at regular intervals of time but quite independently of the first and second ventricular waves. Leads I, II, and III showed these especially well, the tracing with axial leads showing the varying relation of one of the auricular beats to the second ventricular (*T* of Einthoven). In the early stages, in the absence of the electrocardiogram, diagnosis would have been with difficulty positive, since in this case, where one most wished to get venous curves in the neck, they were difficult to obtain. Dr. Halls Dally, after referring to the brilliant work of Professor Einthoven, said that he considered this case as an example of the usefulness of electrocardiographic methods in accurate diagnosis of various disturbances of the circulation, and thought that it might be of interest to members of the society if he quoted the concluding paragraph from a personal letter recently received from Dr. Lewellys Barker, the associate professor of medicine in Johns Hopkins University: "It seems to me," said Professor Barker, "that sphygmography and phlebography have now in practical work little more than historical interest provided arrangements are made for electrocardiography."

OPHTHALMOLOGICAL SOCIETY.

A Distinctive Conjunctival Papule.—Operative Treatment of Conical Cornea.—A New Cell Proliferant.—Relief of Tension in Chronic Glaucoma.—Exhibition of Specimens.

A MEETING of this society was held on March 14th, Mr. J. B. LAWFORD, the President, being in the chair.

Mr. H. HERBERT read a paper entitled "A Distinctive Conjunctival Papule." He described a somewhat prominent defined painless papular swelling found on the inter-palpebral ocular conjunctiva, fairly common in India, and apparently rare in Europe. It occurred in adults, chiefly in males, and most often at the inner side of the cornea. It was generally of a pale pink colour, paler than the immediately surrounding injected conjunctiva, and there were a few enlarged blood-vessels running to it. It might stain feebly with fluorescin. It might last two or three weeks only or considerably longer. Its chief histological features were great epithelial proliferation, more or less inflammatory infiltration, and elastic tissue degenerative changes. In the more active cases the epithelial cells were much enlarged, and multinuclear epithelial giant cells were to be found. Where epithelial downgrowths were unable to form, owing to firm supporting fibrous tissue, the nutrition of the epithelial mass was served by the penetration of thin-walled blood-vessels running into it. It was doubtful whether the elastic tissue changes were an essential feature, since they were well developed in the otherwise normal neighbouring conjunctiva. They were the changes which had been described in pingueculæ. Some of the broken-down elastic tissue was carried by the lymph stream into the epithelium, more particularly in the more inflammatory cases. Some of the degenerate material was taken up by the epithelial cells and thus disposed of. Its presence appeared to stimulate the multiplication of the cells. Portions of it, by causing localised proliferation, led to the formation of "cell nests." This observation should be tested as to its possible application to epithelial pearls in other affections, as in epithelioma of the skin. Much of the hyalin degenerate elastic material no longer stained specifically, but showed some newly acquired selective staining affinity, which aided in its recognition. In one case particles of broken-down tissue were also found in the epithelium.

Mr. C. A. WORTH read a paper entitled "Operative Treatment of Conical Cornea," describing a new operation for the condition. In most cases needing operation there was a very high degree of myopic astigmatism, sometimes as much as 15 or 20 D., with little spherical error, and even with the most accurate combination of correcting lenses vision was usually very poor. At the apex of the cone there was usually what looked like an opacity, but examination with oblique illumination and a loupe often showed this appearance to be merely a refraction effect. Most surgeons operated on conical cornea by applying the actual cautery to the apex, whether with or without complete perforation. Some surgeons say that to operate without perforation is to produce a large opacity, and small effect upon the refraction. Those who do not burn a hole completely through the cornea say that the presence, for several days, of a sloughy fistulous opening into the anterior chamber would be a source of grave danger to the eye. The instruments required for Mr. Worth's operation are a platinum thermo-cautery and spirit lamp, and a broad needle and spatula for tapping the anterior chamber. The platinum cautery has a flat surface of an elongated oval shape. The eye is cocainised, and a drop of eserine instilled. A spot is selected on the cornea in the meridian of greatest curvature, nearly midway between the summit and the margin of the cornea. The cautery is heated in the spirit lamp and held over the eye until it almost ceases to glow in daylight. It is then applied to the cornea at the selected spot with its long axis at right angles to the meridian of greatest curvature. It should only be left in contact with the cornea for an instant. Two or three applications are required, the cautery being heated each time. It is endeavoured to make a cavity about 4 mm. long and 2 mm. wide, with steep edges, and extending nearly down to Descemet's membrane, but very great care should be taken to avoid opening the anterior chamber. Descemet's membrane appears to be more resistant to burning than the substance of the cornea, or perhaps the aqueous protects it in the same way as water protects a tin kettle. With care one can continue the cauterisation until the membrane is seen bulging at the bottom of the wound. Then the anterior chamber is tapped near its periphery and the aqueous evacuated. This is done on each of the following three or four days, and after that on alternate days until the ulcer is healed. The main points of the operation are—the dangers of a communication between the wound and the interior of the eye are avoided; the frequent evacuation of aqueous promotes rapid healing of the wound and greatly increases the effect of the operation; by concentrating the effect of the operation chiefly upon one meridian, and so reducing the myopic astigmatism, one gets better visual results than could otherwise be hoped for; no subsequent iridectomy is required. Mr. Worth said the operation was so safe and satisfactory that he would not hesitate to recommend it in a case of non-progressive myopic astigmatism of very high degree.—The paper was discussed by Mr. ERNEST CLARKE, Mr. C. WRAY, Sir ANDERSON CRITCHETT, Major G. F. ALEXANDER, Mr. ARNOLD LAWSON, and Mr. T. HARRISON BUTLER.—Mr. WRAY, in his remarks, expressed surprise at hearing Mr. Worth say that so many cases of the kind were corrected by means of myopic cylinders. The last seven cases he had himself had were corrected by plus cylinders.—Sir ANDERSON CRITCHETT'S observations consisted of a defence of his operation by means of the galvano-cautery.

Mr. A. R BRAILEY read a contribution, entitled "A New Cell Proliferant." He called attention to a new drug, named allantoin, which he termed a cell proliferant. Its action was not that of an antiseptic; indeed, it actually encouraged the growth of organisms; but its great use was that it encouraged the proliferation of the cells of the tissue. He mentioned the case of a small corneal ulcer, which, after cauterising and the application of various remedies, did not get well. Drops of allantoin quickly caused a marked improvement. He mentioned several similar cases, and said it acted by causing extra nourishment to be received by the cornea. The drug was, he said, well worth a trial in long-standing keratitis, and possibly scleritis.

Mr. A. B. ZORAB read a paper on the "Relief of Tension in Chronic Glaucoma: A Preliminary Report on a New Operation." After briefly reviewing the existing operations, he indicated that the guiding principle in each was drainage of the interior of the globe. He then described his own procedure, based on the same guiding principle. He described two methods, of which the second was, in his opinion, the better. Originally he passed a threaded needle subconjunctivally into the anterior chamber, piercing the sclerotic coat at the angle. The needle was then brought out at a corresponding point through the angle and out again subconjunctivally. The ends of the silk were cut short and a little manipulation ensured their being covered by conjunctiva. He found, however, that the conjunctiva was very frequently torn by the fixation forceps, and also there was some risk of pricking the

iris and lens capsule with the point of the needle. Acting on the suggestion of Mr. J. F. Bullar, he modified the operation thus: A large flap of conjunctiva was raised—at the upper part of the globe for choice—leaving a crescentic attachment along the limbus. A small incision was then made under this flap into the anterior chamber. A piece of sterile silk thread, about a third of an inch long, was doubled on itself, and the loop was pushed gently through the sclerotic incision into the chamber. The conjunctival flap was then replaced and stitched in a couple of places, great care being taken to see that the distal ends of the bight of silk did not come near the margin of the conjunctival incision. Mr. Zorab claimed for this procedure that it was quite devoid of manipulative risk, that it established efficient drainage which promised to be permanent, and that it was simple to perform. The only danger, in his opinion, was from sepsis, but he did not regard this as being any greater than the other operations involving opening the eyeball. The greatest emphasis was laid on ensuring a complete covering of the silk by healthy conjunctiva. As the oldest case only dated back to July, 1911, he was careful to state that the operation was only on trial, but he was firmly convinced that it held out good promise. He had so far restricted it to cases of chronic glaucoma, as acute cases did well with iridectomy. He concluded his paper with notes of the cases already operated on.—Mr. M. STEPHEN MAYOU mentioned some cases on which he had tried a similar procedure somewhat before Mr. Zorab.—Mr. ZORAB replied.

The following card specimens were shown and discussed:—

Mr. R. R. CRUISE: (1) A Case of Tuberculosis of the Conjunctiva; and (2) Scotometer for Testing Central Colour Vision.

Mr. WRAY: A case of Subretinal Cyst.

Mr. H. B. GRIMSDALE: Acquired Hypermetropia with Rupture of Choroid.

Mr. G. COATS: Pigmented Cyst lying Free in the Anterior Chamber.—Mr. HERBERT said he saw a similar case to Mr. Coats's in Bombay, but there was no deposit on the lens capsule.

Mr. L. V. CARGILL showed a case of Osteoma of the Frontal Sinus.

Mr. J. F. CUNNINGHAM showed a case of Episcleral Nodule, probably Tuberculous.

Mr. N. BISHOP HARMAN exhibited a case of Guttate Iritis.

NORTH OF ENGLAND OBSTETRICAL AND GYNÆCOLOGICAL SOCIETY.

Exhibition of Specimens.—Concealed Accidental Hæmorrhage.—Diverticulitis.

A MEETING of this society was held in Sheffield on March 15th, Mr. RICHARD FAVELL, Vice-President, being in the chair.

Dr. D. G. NEWTON showed a specimen of Chorion-Epithelioma.

Mr. A. W. CUFF reported a case of Extreme Vesical Incontinence, associated with prolapsus uteri, successfully treated by laying bare the urethra, putting in some puckering stitches, then doing a very thorough anterior and posterior colporrhaphy and Gilliam's operation.

Dr. G. W. FITZ-GERALD showed: 1. A Mucoid Polypus of the Cervix removed from a patient aged 31. The patient, who had been married for 12 months, complained of dyspareunia, pain in the back, occasional menorrhagia, and a persistent offensive leucorrhœal discharge. The tumour when removed was of the size of a tennis-ball, and was brought before the society on account of its unusual size and the similarity of its structure, naked-eye and microscopical, to that of a malignant adenomatous growth of the cervix and uterus recently shown by Dr. Fitz-Gerald. This tumour showed no indication of malignant change. 2. A Dermoid of the Right Ovary and a Pedunculated Fibroid Tumour, which was attached to the posterior wall of the uterus, removed from a patient aged 70. An interesting feature in the history of the case was that two years before she had suffered from an acute illness, which was attributed to a pelvic tumour. Her condition at that time had been so grave that it was feared she would not survive. She, however, got well. The dermoid showed at its upper end a blood clot of the size of a ping-pong ball, which no doubt was the result of torsion of the pedicle having occurred at the time of the previous illness. She complained of constant pain in the right iliac fossa, and low down in the back.

Mr. MILES H. PHILLIPS (Sheffield) reported a case of severe Concealed Accidental Hæmorrhage, which had been successfully treated by Cæsarean section followed by hysterectomy. The patient was 33 years old. During the previous 13½ years she had had nine full-time labours, and one miscarriage. Until one morning a fortnight short of full time she had been in good health. She was then awakened by severe abdominal pain. She fainted two or three times. There was no external bleeding. Dr. E. T. K. Walker, of Tinsley, recognised the condition, and at once sent her into the Jessop Hospital. On admission she was very pale, with drawn features, and a feeble pulse of 120. The uterus was tense and tender; the child could not be felt. The cervix was thick and firm and just admitted the tips of two fingers. On attempting to rupture the membranes a gush of blood poured down the vagina as if from a tap. A speculum was at once inserted and the vagina tightly packed with gauze. Blood soon began to escape freely through the packing and the pulse became uncountable. Considering that an immediate hysterectomy might give her a chance, the house surgeon, Dr. J. Chisholm, promptly had the theatre got ready and telephoned for the surgeon on duty. On opening the uterus a large quantity of blood and clot escaped. The child was as dead-white as the mother. The placenta was found loose on the posterior wall of the fundus, completely separated from the placental site, which was on the anterior wall. The membranes were intact. The uterus was thin and perfectly flabby. It was at once amputated at a level slightly above the cervix. No hæmorrhage occurred from any of the cut edges. The patient was too bad to move from the hot operating theatre for several hours. Pituitary extract, oxygen, saline infusions, strychnine, and digitalin were used. For 36 hours recovery was very doubtful. Thereafter she made steady progress, which was delayed in the third week by a slight paracervical cellulitis.

Dr. C. OLDFIELD read a paper on Diverticulitis as a Cause of Pelvic Inflammation, with a report of three cases. The disease, he said, was fairly common and well known to surgeons. Although the lesion was usually pelvic, the disease had apparently escaped the notice of gynæcologists. The two chief clinical varieties were: (1) left-sided "appendicitis"; and (2) chronic obstruction. The former might assume various forms just as appendicitis did, and not uncommonly cause pelvic abscess or even general peritonitis. The latter variety resembled obstruction from malignant disease of the pelvic colon, and on exploration, and even after resection of the portion of bowel involved, the disease was usually taken for carcinoma. In nature it was inflammatory and arose in connexion with small multiple diverticula from the colon, particularly the sigmoid. On dissection these diverticula were found to be hernias which took the form of little pockets varying in size from a pea to a hazel nut. The mucosa was herniated through slits in the muscular coat of the bowel and generally projected into the sigmoid mesentery or the epiploic appendages. It would be readily imagined how concretions or foreign bodies came to lodge in these pockets and, further, that inflammatory diseases would result. In operating for pelvic inflammation it was necessary to be mindful of the existence of this disease because, while it simulated left tubo-ovarian disease, its operative treatment was both more difficult and more dangerous. Indeed, the death-rate from operations in chronic cases was very high and was mainly due to the fact that the true nature of the condition had not been determined until after death.

EDINBURGH OBSTETRICAL SOCIETY.

Transplantation of the Ovary.—Lateral Incision of the Perineum.—Measuring Internal Diameters of the Female Pelvis.

A MEETING of this society was held on March 13th, Dr. J. HAIG FERGUSON, the President, being in the chair.

Dr. HUGH S. DAVIDSON read notes on three cases of Transplantation of the Ovary in women in whom palliative measures had failed. As all the women were under 30 homoplastic grafting was attempted, in order to obviate the symptoms following the early menopause. One case was a complete failure. One was a comparative success but was

complicated by the appearance of a fibroid of the uterus; the patient, however, had not shown any menopausal symptoms. The third began to menstruate three months after the operation and had menstruated ever since. None of these patients suffered any return of menstrual pain, nor any pain at that time at the site of the transplantation of the ovary in the rectus abdominis muscle. A mere slice of ovary was embedded into a slit in the muscle. Dr. Davidson considered this method of treating pathological ovarian conditions superior to attempts at conservative surgery, as the transplanted portion had shown no signs of further change in its new situation, whereas pieces of ovary left *in situ* tended to become pathological and thus to require a second operation. While the grafts might not prove permanent, they produced a slowly appearing and consequently milder menopause.—Dr. A. H. F. BARBOUR asked whether the return of hæmorrhage after the removal of the two ovaries was considered as a menstruation. This occurred without transplantation. Had the cases described gone on menstruating for a year? Could the same results be expected from a portion of ovary engrafted into a muscle as from ovaries in the normal position? Did secretion from an engrafted ovary get into the system in the same way? Was there any evidence that ovulation was taking place? However, this transplantation was easily done, and might be practised in many cases and the results watched.—Dr. J. W. BALLANTYNE remarked that the results of transplantation experiments in animals had not so far been successful, but suggested possibilities. The ideal site would be transplantation into the wall of the uterus, and so to continue their secretion and ovulation, with possibly impregnation, as in a case of removal of the tubes.—Dr. F. W. N. HAULTAIN asked whether the menopausal symptoms were equally kept off if menstruation was not established. He always removed the uterus when removing both ovaries. Was this essential in the prevention of the symptoms of artificial menopause? He believed the results attending the removal of the ovaries to be much exaggerated. He had found that of women in certain asylums only 0·5 per cent. had had their ovaries removed, whereas 5 per cent. were without their appendices; so that one was more justified in saying that insanity followed removal of the appendix than of the ovary. He believed the results of the artificial menopause depended wholly on the sexual temperament of the woman.—Mr. E. W. SCOTT CARMICHAEL related the results of transplanting the ovary in 21 rabbits. In 15 there was success and 6 completely failed. Success depended on the site; it was more successful when implanted into muscle than into the broad ligament or on the parietal peritoneum. Transplantation in the human subject should be into muscle. He believed that in women only a slice of the ovary could be transplanted, and that the tendency would ultimately be to complete atrophy; yet even this would temporarily diminish the symptoms. If part of an ovary was left normally attached it would certainly hypertrophy.—The PRESIDENT said that when the ovaries and part of the body of the uterus had been removed he had known menstruation to occur from the lower part of the endometrium, which kept the patient comfortable. Transplantation was an alternative to resection of the ovary, which he had found unsatisfactory, as the portion left tended to become cystic.—Dr. DAVIDSON, in reply, said that the wall of the uterus seemed the best part for the transplantation. Conservative surgery of the ovary was a failure; in every case he had seen a second operation had been required in from 12 to 18 months.

Dr. R. ROBERTSON, in a paper on Lateral Incision of the Perineum and its immediate repair after labour, advocated lateral incision with scissors whenever there seemed probability of rupture. It was required specially in primiparæ, in occipito-posterior cases, and in rigidity of the perineum. Right lateral incision was practised from the vagina to 1 inch outside the anus and for 2 inches up the vaginal wall. There was often free bleeding. After the child was born, and before the placenta came away, the incision was carefully stitched up in layers with catgut, bringing the cut ends of the muscle together, the skin edges being joined with silkworm gut. The incision, if carried out in time, saved detachment of the levator ani from the symphysis, and by preserving the perineum prevented prolapse of the anterior vaginal wall. The stitching was easily carried out.—Dr. HAULTAIN said he had tried lateral incision, but had given it up after a fair trial with varying success.—Dr. B. P. WATSON said he adopted Lapthorn Smith's method. When the patient was under chloroform the thumb was passed into the rectum and the fingers into the vagina, and three silkworm-gut sutures were inserted, passing closely below the mucous membrane of the vagina, the ends of the sutures being held by forceps. If the perineum tore, the sutures were in place for tying; if no tear occurred they could easily be withdrawn.—Dr. J. M. BOWIE considered two small lateral snips better than one large one.—The PRESIDENT, Dr. W. FORDYCE, Dr. J. YOUNG, Dr. H. O. NICHOLSON, Dr. JAMES RITCHIE, and Dr. G. KEPPIE PATERSON joined in the discussion, and Dr. ROBERTSON replied.

Mr. ARCHIBALD MCKENDRICK and Dr. JAMES YOUNG demonstrated an improved method of Measuring the Internal Diameters of the Female Pelvis in the living subject. Mr. McKendrick described the X ray and mathematical aspect of the subject and Dr. Young the anatomical. It was shown, as a result of an exhaustive investigation of dried pelves, normal and abnormal, that the plane of the transverse diameter coincided invariably with a line joining the upper margin of the pubes and the posterior superior iliac spines. The plane of the conjugate was more variable, however, but in 95 per cent. of cases a line joining the upper margin of the pubes and the promontory of the sacrum if prolonged cut the vertebral spines on an average 1·7 inches above the line joining the posterior superior spines. By their method the measurement of the transverse diameter was strictly accurate, but that of the conjugate was in a small percentage of cases liable to an error of about one-tenth of an inch when examined by the X ray pelvimeter. A skiagraph was taken with the patient in the prone position, the X ray tube being 36 inches vertically above the plate. A plumb-line was dropped to the region of the sacro-coccygeal joint and the point marked by a metal ×. The posterior superior spinal line and a point 2 inches above it on the spine were similarly marked, and their respective distances from the photographic plate recorded. The distance of the pubes from the plate was also noted. The X ray exposure was made, and a print or tracing taken and applied to the X ray pelvimeter. The X ray pelvimeter devised by Mr. McKendrick reproduced accurately the conditions under which the skiagraph was taken. The focus point of the X ray tube was represented by a pivot from which cords diverged. These cords represented X rays, and were kept taut by means of steel springs. The axial ray was a fixed cord, and was cut at right angles by a fixed transverse cord 36 inches from the pivot; the other cords were moveable about the fixed pivot. For ease of measurement other moveable transverse cords completed the instrument; these moved up and down on fixed scales at the sides marked in inches. The skiagraph was applied to the pelvimeter in such a position that the mark × (focus point) was at the intersection of the fixed axial and transverse cords, the spines of the vertebræ lying under the transverse cord. The cords representing X rays were now moved till they coincided with the bony points marked in metal, and with the pubes and the promontory on the print. The print was now relative to the instrument exactly as the plate was when the X ray exposure was made, but on a different axis. The original distances of the bony points from the plate were now fixed on the pelvimeter by means of the transverse cords; the intersections of these and the X ray cords represented accurately the original relative position of the bony points. A straight-edge applied to the intersections would represent the plane of the conjugate, and where the X ray cord applied to the promontory cuts the straight-edge would correspond to the original site of the promontory. The exact conditions under which the X ray was taken were thus reproduced by means of the pelvimeter, and a measurement from the pubes point to the promontory points on the cords would give the measurement of the conjugate. In the same way the transverse diameter was measured, but in this case the plane was marked by the straight-edge from the intersection of, first, the posterior superior spinal cord and the transverse cord representing its distance from the plate; and second, the pubes cord and the transverse cord representing its distance from the plate. Where the straight-edge cut a perpendicular dropped to the widest part of the brim formed the point across which the transverse diameter was measured (for example, say 3 inches). The print

was now turned round with × as its centre and brought to lie so that the vertebral spines were in line with the original plumb line. Two X ray cords were then applied to the widest part of the brim of the pelvis and the distance between them (say, 3 inches) would give accurately the measurement of the transverse diameter. The X ray pelvimeter was being manufactured by Messrs. Siemens and Co., London.—Dr. BARBOUR and Dr. E. F. T. PRICE discussed the communication.

ROYAL ACADEMY OF MEDICINE IN IRELAND.

SECTION OF MEDICINE.

Cerebellar Tumour.—X Ray Diagnosis of Aneurysm of the Thoracic Aorta.

A MEETING of this section was held on March 8th, Sir JOHN W. MOORE, the President, being in the chair.

Dr. P. DEMPSEY showed a patient suffering from Cerebellar Tumour and detailed her history. The patient, aged 24, had suffered for eighteen months from headache, chiefly vertical, occasionally occipital, accompanied by attacks of vomiting and giddiness and periods of transient blindness. On admission, smell and taste normal; marked optic neuritis, especially in left eye; vision defective, but could read; weakness of left external rectus; slow, deliberate nystagmus to left; rapid fluttering movements to right; slight paresis of left side of face, and tactile anæsthesia over fifth nerve; hemiparesis; left arm showed jerky, rapid movements of supination and pronation on movement; no tremor when at rest; gait staggering, more so with eyes closed; no marked deviation to either side; knee-jerks exaggerated; plantar reflexes diminished, flexor; leg movements ataxic when the patient was lying down; left arm was pronated and supinated slowly and awkwardly; no sensory defect other than mentioned; no bulging or tenderness of cranium.—Dr. J. CRAIG said there were some features in the case that threw a little doubt on the cerebellar nature of the lesion. It struck him as peculiar that the fifth, sixth, and seventh nerves should be involved without any involvement of the eighth. He had exhibited a case some time ago in which the eighth nerve was involved with the fifth and seventh.—Dr. T. G. MOORHEAD said it was extremely important that physicians should form some opinion as to the value of operation in these cases. His experience of operations performed for intracranial compression was very favourable, so far as the relief of the symptoms was concerned, and he had seen sufficient cases done to convince him that operation was the treatment to adopt in all cases of intracranial tumour. In two cases that came under his notice recently very considerable relief was afforded to distressing symptoms by operation in the parietal region.—Mr. A. J. M. BLAYNEY said he understood the patient had refused operation. The recognised surgical treatment was to perform the decompressive operation, and there was no doubt this gave relief for some time. An argument in favour of the occipital in preference to temporal decompression was that should further operation be afterwards undertaken the necessity for a fresh opening would be obviated.—Dr. F. C. PURSER discussed the exact site of the tumour in this case on the symptomatology of many cases which had been operated on or had come to necropsy. He drew attention to the danger of diagnosing tumour of the cerebellum unless localised symptoms come on, at latest, very soon after general symptoms. He also discussed the value of vertigo as a symptom.—Professor W. H. THOMPSON said that from the physiological point of view the case was a complex one. The chief complications were the ataxia and the Romberg's sign; the other symptoms might be explained by an extra-cerebellar tumour on that side. He was inclined to the view that the tumour was extra-cerebellar.—Mr. A. A. M'CONNELL pointed out that brain surgery differed from general surgery and needed much practice in technique. He called attention to a point regarding diagnosis described by Cushing—viz., that in early cases there is a change in the colour-fields of the eyes known as dyschromatopsia.—Mr. F. K. CAHILL gave his experience of a case of a school-boy in which a diagnosis of brain tumour had been made by the school medical officer. The patient consulted him afterwards, complaining of a pain in his head, and on consultation with Sir Henry Swanzy the conclusion was arrived at that there was no tumour. The boy died four days afterwards, and on inquiry it was found that he had been noticed staggering, but up to that time this symptom had been withheld.—The PRESIDENT summed up the discussion, and Dr. DEMPSEY replied.

Mr. MAURICE R. J. HAYES read a paper on the X Ray Diagnosis of Aneurysm of the Thoracic Aorta. The necessity of remaining for from five to ten minutes in total darkness before making a radioscopic examination of the thorax in order to increase the luminous sensibility of the retina was insisted upon, and in order that the observer may be able to give an opinion of any value it was important that he should be conversant with the X ray appearances of chests that were normal as well as diseased. The diagnosis should be made from the screen examination. The shadows on a negative were likely to be misleading, especially to the inexperienced. With the negative static conditions only could be studied, with the screen dynamic conditions could be observed. The appearances of the normal thorax were fully described, and the different positions in which the thorax should be examined were demonstrated. The differential diagnosis of aneurysms, new growths, consolidation of the lung, enlarged glands, and empyema was discussed, and lantern slides and diagrams illustrating the various points in the paper were shown.—The paper was commented on by the PRESIDENT, Dr. MOORHEAD, Dr. PURSER, and Dr. HARVEY.

NOTTINGHAM MEDICO-CHIRURGICAL SOCIETY.—A meeting of this society was held on March 20th, Dr. F. H. Jacob, the President, being in the chair.—A paper was communicated by Mr. Percy E Tresidder and Mr. Stanley Tresidder on the Treatment of Syphilis by "606" or Salvarsan. The former first gave a brief description of the chemical and physical properties of the drug. He briefly outlined the history of syphilis from its introduction into Europe 400 years ago to the discovery of its causative agent in the spirochæta pallida. Mercury had been held to be the sole specific for syphilis until Dr. Ehrlich, of Berlin, discovered salvarsan. Dr. Ehrlich was able to cure inoculated monkeys by means of salvarsan in seven days; he discovered, however, that three months later the cured monkeys could be again inoculated, thus proving that salvarsan did not cause immunity from the disease. A description of the methods employed in administering the drug was then given; the author always used the intravenous method. They generally administered two injections within a fortnight, and then followed with a course of mercury. Certain precautions were necessary; the optic discs should be examined; nor should patients suffering from any of the constitutional diseases—e.g., diabetes, tuberculosis, cardiac diseases, &c.—nor debilitated and old or very young subjects be treated with salvarsan. They kept their patients in bed for 24 hours before the injection and for 48 hours after. Within an hour of the injection the patient's temperature rose to 100° F., and there was general malaise, but after six hours these symptoms subsided and the patient rapidly improved. A Wassermann test of the blood should always be made to confirm the diagnosis, and also should be subsequently made to judge the result of the treatment. Generally, they found six weeks after the injection that the Wassermann reaction was "partially positive," but after a short course of mercury it became negative, and all the symptoms of syphilis disappeared. In cases of skin and mucous membrane lesions the immediate results were marvellous. In cases of congenital syphilis they gave the mother an injection, and this acted upon the child through the milk, in spite of the fact that the milk contained no trace of arsenic. They also found the serum from the blister of an injected patient cured a second patient if injected into him. They had been successful in treating cases of tabes dorsalis, general paralysis of the insane, and a case of severe tertiary glossitis. Finally, a list of diseases that could be cured by the drug was given.—Mr. Stanley Tresidder then read notes of typical cases. They had now employed the drug in nearly 100 cases for a period of over a year. They had never had an alarming complication and their results were striking. He quoted cases where they had successfully employed the drug in primary, secondary, and tertiary syphilis, congenital and hereditary syphilis; in parasyphilitic diseases, such as tabes dorsalis and general paralysis of the insane. On being questioned as regards the latter case, he said the diagnosis had been confirmed by an eminent Edinburgh

specialist, and the man had so far recovered as to be able to travel abroad, although he had only the previous day heard by cable that the patient had unfortunately had a seizure.—A demonstration was then given of the instruments used, and two cases were shown illustrating the curative results of the drug.

DEVON AND EXETER MEDICO-CHIRURGICAL SOCIETY.—A meeting of this society was held at the Royal Devon and Exeter Hospital on March 8th, Dr. R. V. Solly, the President, being in the chair.—Dr. W. Gordon read notes on a case of Cancer of the Œsophagus with Perforation, in which the Boas-Oppler bacillus was recovered from the lung tissue during life.—The President remarked that he had found the bacillus in a considerable number of cases of gastric cancer, and considered its presence or absence of distinct value in arriving at a diagnosis.—Dr. J. Raglan Thomas asked Dr. Gordon if radium had been tried in this case, and related a case under his own care where radium had been applied to an œsophageal growth, but unfortunately discontinued by the patient. A post-mortem examination by a skilled pathologist testified to distinct healing having taken place at the point of radium application.—Mr. R. A. Worthington reported in brief and showed specimens from (1) Endothelioma of the Palate; (2) Cancer of the Large Intestine in which a portion of the growth was passed per anum; and (3) Polypoid Tumour springing from the supratonsillar fossa.—Mr. H. Newman showed the following cases for Dr. Henry Davy: (1) A girl with Erb's Juvenile Form of Muscular Dystrophy; (2) a young woman with Exophthalmic Goitre in whom symptoms of myxœdema coexisted; and (3) a man with Cerebral Gumma under treatment with injections of salvarsan.—Dr. Gordon showed cases of: (1) Aortic Regurgitation in a young girl in whom anginal attacks had occurred; the attacks were relieved by the nitrites and by salicylate of sodium; and (2) Mitral Stenosis. Dr. Gordon also read notes on a case illustrating the Value of the Cardiac Sign in Cancer. The patient was found after delivery to have a tumour in the lower abdomen, and the consensus of opinion favoured a diagnosis of malignancy. The presence of a normal area of cardiac dulness caused Dr. Gordon to reconsider the diagnosis, and eventually the presence of tubercle bacilli in the urine was established and the true nature of the tumour arrived at. Dr. Gordon stated that in about 100 cases 90 per cent. were found to have reduced cardiac dulness.—Mr. Worthington, who had examined the woman with the cystoscope, had noted an ulcer on the posterior vesical wall, and he thought possible that a tuberculous growth of the mesentery had formed adhesions to the bladder.—Dr. J. Delpratt Harris showed a Sacral Tumour which he had removed from a woman aged 26. The tumour proved to be a dermoid; it had caused no inconvenience until quite recently. The excision was performed with considerable difficulty owing to deep extension into the pelvis and intimate attachments to the posterior rectal wall. Dr. Harris also showed X ray negatives of: (1) Renal Calculi; (2) Ureteral Calculi; (3) Phleboliths, and pointed out how easily (2) and (3) could be confused by the unwary.—The President showed a Tumour of the Testis, the growth having occurred in a retained organ.—Mr. Russell Coombe, in commenting on the case, recollected one where myxosarcoma of the testicle at first suggested hydrocele. He remarked on the high grade of malignancy and the rapid recurrence in such cases.

LONDON DERMATOLOGICAL SOCIETY.—A meeting of this society was held on March 19th, Dr. Morgan Dockrell presiding.—The following cases were shown and discussed: (1) A Syphilide Resembling Lupus Vulgaris, by Dr. J. L. Bunch; (2) Pityriasis Rubra, by Dr. W. Griffith; (3) Pityriasis Rosea and a series of cases of Keloid treated by local hyperæmia and X rays, Dr. W. Knowsley Sibley; and (4) Acne Vulgaris Treated by Vaccines, Dr. T. Galbraith.—The President read a paper on Lichen and Lichenification and showed a series of cases and microscopic slides to illustrate these conditions.

WORTHING HOSPITAL.—It has been decided to instal an X ray apparatus and electric bath at Worthing Hospital as a memorial to Mr. Augustus H. Collet, who for 37 years was one of the medical officers of the institution. Mr. Collet died in March, 1909

Reviews and Notices of Books.

The Growth of Bone: Observations on Osteogenesis. An Experimental Inquiry into the Development and Reproduction of Diaphyseal Bone. By Sir WILLIAM MACEWEN, M.D. Glasg., F.R.S. With 61 figures. Glasgow: James Maclehose and Sons. 1912. Pp. 210. Price 10*s.* net.

THIS inquiry was undertaken to test by direct experiment problems connected with the growth of bone, and was carried out for the most part "on the canine species" in the developmental period. According to the author, this was necessary, "as a firm belief exists that all periosteum produces bone—such is the physiological teaching—many believing that diaphyseal bone could not be produced without periosteum, and, once produced, would die were the periosteum removed." He says that previous experience in human physiology had indicated that the periosteum was not osteogenic, but not so convincingly to the mind of others as direct experiments have demonstrated. He speaks of "the osteogenic potency of the growing shaft," not the periosteum, as the true cause of the filling up of blanks in the shafts of growing bone. In the end, of course, it is the osteoblasts that build up bone.

Beginning with the genesis of the osteoblast, we are told that "the nuclei of the cartilage cell divide and are set free as osteoblasts." This is certainly not the usual teaching as regards the origin of osteoblasts. It is also stated that "the growth occurring at the normal epiphysis is governed by inherent heredity." We may remark that very few of the historic names associated with investigations on bone production and regeneration—except those of Duhamel and John Hunter—are mentioned. We were unable to find any reference to the well-known work of L. Ollier, of Lyons, "Traité Expérimentale et Clinique de la Régénération des Os" (1867), some of whose results are in direct contradiction to those of the author.

Besides its other functions the periosteum is regarded as a limiting membrane to the osteoblasts. The author then proceeds to discuss the question, "Has the periosteum inherent osteogenic power?" A portion of the shaft of the radius was removed subperiosteally, the periosteum being left *in situ*. After ten weeks there was a gap between the ends of the bones where the periosteum was left intact, but new bone had been produced by the shaft: even when the whole radial shaft is removed, the periosteum being left intact, no new shaft has formed. "There was an entire absence of ossific reproduction from the periosteum." A flap of periosteum raised from the shaft of the radius and made to surround a muscle did not result in bone formation. Transplanted periosteum, we are told, does not produce bone. Let anyone read Ollier's account of his experiments and study the illustrations showing the production of bone by transplanted periosteum, and even the growth of bone on a cockscomb, and he will see that there is a wide gulf fixed between the results of Sir William Macewen and those of the earlier experimenters in the city on the Rhône and the Saône. Ollier distinctly states that the periosteum of all bones is not equally potent when transplanted. That of long bones is more "favourable" than that of flat bones, and amongst these the "juxta-epiphyseal" periosteum is the most prolific.

The author raised a flap of periosteum from bone except at the proximal extremity and caused it to encircle a "muscular fasciculus." There was no bone formation. A similar experiment was made by Ollier on the tibia of a dog with resulting bone formation, which is depicted in an illustration. Who is to decide when such diametrically opposite

results are found between the experiments of two such distinguished surgeons—albeit the experiments of Ollier were often accompanied by suppuration, while those of Sir William Macewen were, of course, aseptic throughout? Ollier showed that if he transplanted under the skin the scrapings from the inner layer of the periosteum—i.e., the osteogenic or osteoblastic layer—they produced little grains of bone in a rabbit 4½ months old. The next question submitted to direct experiment was "the osteogenic power of bone bereft of its periosteum." On removal of this "limiting membrane" the osteoblasts escape and mingle with the other tissues. On removal of the periosteum from the entire shaft of the radius, after 12 weeks new bone has formed on the shaft. Those interested in this question should read Ollier's account of his experiments. On repeating Duhamel's silver ring experiment it was found that on a silver ring being applied to bone denuded of its periosteum the osteoblasts were poured out of the shaft, increased the thickness of bone, and covered the silver ring with osseous tissue.

Next bone grafting without periosteum is considered, and it is shown that rings of bone without periosteum, when broken up into small fragments, reproduced bone if transplanted to a gap cut in bone devoid of periosteum. Shavings of nude bone were transplanted between the muscles where they united and formed again the continuity of the shaft Osseous shavings inserted into the intermuscular septa of the neck in seven weeks formed one dense plaque of bone. A portion of the entire circumference of a bone and its periosteum was removed and in its place was inserted a glass tube. It was found that bone grew into the glass tube from the osseous tissue in the centre of the shaft to the exclusion of all other sources. Occasionally in injuries osteoblasts may be carried a short distance by the blood stream and form bone—e.g., over the sac of a false aneurysm; and the same is true of pieces of bone carried amongst the muscles, a case being given in a man with fracture of the femur, where all details are fully cited and figured. Flat bones, such as those of the cranial vault, can continue to grow and proliferate after losing their periosteum when they are re-implanted, an interesting case in the author's practice being quoted.

Another series of experiments on the same lines as those already mentioned was undertaken to test the osteogenic power of the epiphyseal cartilaginous plates in the regeneration of bone—e.g., the diaphysis was removed subperiosteally, one epiphysis damaged and the other left intact; metal caps were placed on the divided extremities of the shaft of the diaphyseal side of the epiphyseal cartilages, while the remainder of the shaft was removed. The author found that the new growth came from the epiphyses and not from "reproduced periosteum."

Physiologists and surgeons will alike find Sir William Macewen's book both valuable and suggestive. The results are extensively illustrated by numerous excellent photographs. Some of the author's own cases are particularly interesting, including one of restoration of the transverse ramus of one-half of the jaw by transplantation of bone in a girl.

Text-book of Ophthalmology. By Dr. ERNST FUCHS, Professor of Ophthalmology in the University of Vienna. Authorised translation by ALEXANDER DUANE, M.D., Surgeon, Ophthalmic and Aural Institute, New York. London and Philadelphia: J. B. Lippincott Company. 1911. Pp. 989. Price 25*s.*

THE fourth American edition of Professor Fuchs's "Text-book of Ophthalmology," following the third edition at an interval of only three years, shows the demand for this standard work. To a cursory examination it appears to be the same work, but whereas the last English edition was a translation of the eleventh German edition the present contains many additions, both in the text and in the illustrations, derived from the twelfth German edition. Most noteworthy amongst these is a completely new section of 67 pages on the general physiology, pathology, and therapeutics of the eye, which is placed in the forefront of the book. It is an admirable introduction to the more detailed considerations which follow. It presents the student with a thoroughly scientific survey of general eye conditions and their treatment, thus enabling him to obtain a view which places everything in its proper perspective. In the general physiology the coats of the eye are especially treated of in relation to their physiological functions, and the circulation of the lymph and intraocular pressure are given a position of prominence which emphasises their importance to the student of eye diseases. General pathology deals successively with causes of injury—physical, mechanical, chemical, and parasitic—degenerative processes, congenital defects, and hereditary influence, and the general symptoms associated with eye diseases. Under General Therapeutics hygienic regulations, dressings, physical methods (heat and cold, radiotherapy, Bier's hyperæmia, and so on), medical treatment (mydriatics, miotics, &c.), and causal treatment, including serum therapy, are considered.

The main part of the text of the book remains much the same as in previous editions. Here and there sentences or paragraphs are modified or brought up to date by reference to new suggestions and methods, such as, for example, Lagrange's operation for glaucoma. Throughout the translator has added his own comments, and in some cases whole chapters, especially in the sections on functional examination, motor anomalies, refraction, and operations. These additions are enclosed between brackets and signed with an initial. They are so frequent and sometimes so extensive that it is often difficult to know whether one is reading the author's or the translator's opinions. As we mentioned in reviewing the last edition, in our opinion the translator has reached, even if he has not already overstepped, the bounds of legitimate annotation. The undergrowth is getting so dense that it is difficult to see the trees. A translation should be as nearly as may be a replica of the original picture; it is impossible to retain the same balance of values in an oil painting and a mosaic. Nevertheless, Professor Fuchs's text-book has been, and still remains, *facile princeps* among the text-books on ophthalmology.

Studies in Cardiac Pathology. By GEORGE WILLIAM NORRIS, A.B., M.D., Associate in Medicine at the University of Pennsylvania, Visiting Physician to the Episcopal Hospital of Philadelphia, Assistant Visiting Physician to the University and to the Philadelphia General Hospitals, &c. With 85 original illustrations. London and Philadelphia: W. B. Saunders Company. 1911. Pp. 233. Price 21*s.* net.

A KNOWLEDGE of the morbid anatomy of the heart is an essential for the adequate consideration of the problems of cardiac pathology and for a proper appreciation of the clinical signs of cardiac disease. Many of the questions concerned are so definitely mechanical that a discussion of the size of the cavities and of their walls, and of the character, texture, and competence of the valves, becomes of the utmost importance. These matters are dealt with fully, and in an instructive and interesting manner in Dr. Norris's book. It is founded upon a study of the specimens in the museums of five of the most important hospitals of Philadelphia. Permission to photograph the specimens having been accorded to Dr. Norris, he has given 85 full-page plates, which obviously give the appearances with remarkable

fidelity. The plates are photographic reproductions, and the lighting and arrangement of the specimens have been admirably managed, so that each plate shows clearly the pathological condition which it is intended to illustrate. To each plate is given some explanatory letterpress, usually comprising brief clinical notes, a description of the heart and of the lesions it presents, and in some cases brief notes on the microscopical appearances.

The plates and accounts would alone make the book valuable and interesting, but Dr. Norris has further increased its usefulness by giving in addition a thoughtful and systematic account of the morbid anatomy of the heart, using his plates as illustrations. He deals first with acute endocarditis, differentiating the various forms of this condition and describing their effects. He then discusses chronic endocarditis, and considers separately the lesions of each of the valves, carefully describing their effects on the cavities and on the cardiac physiology. The other subjects considered are pericarditis, hypertrophy and dilatation, cardiac aneurysm, cardiac syphilis, and congenital lesions. The accounts given are not simply transcriptions of ordinary text-book descriptions, but are the outcome of an extensive study of the literature, to which numerous references are given. Statistics derived from special monographs and from the author's own experience are also given in regard to many conditions. Where opinions differ in regard to the explanation of some manifestation Dr. Norris is careful to recount them impartially. He refers to some interesting personal observations on the occurrence of endocarditis and pericarditis in association with tuberculous disease, to which special notice may be directed.

The book is printed in large type upon very good paper, and, as we have said, the illustrations are admirable. It should be a useful companion to anyone working in a museum or in the post-mortem room.

Maladies de l'Œsophage. Par MICHEL GANGOLPHE, Professeur Agrégé à la Faculté de Médecine de Lyon, Chirurgien-Major Honoraire de l'Hôtel-Dieu. Avec 39 figures intercalées dans le texte. Paris: J. B. Baillière et Fils. 1912. Pp. 115. Price, paper, 3 francs; boards, 4 50 francs.

THIS volume forms part of "Nouveau Traité de Chirurgie Clinique et Opératoire" published in fasciculus form under the editorship of A. le Dentu and Pierre Delbet. Within recent years the diagnosis and treatment of diseases of the œsophagus have been considerably modified, one might say revolutionised, by the development of the means of direct ocular inspection called œsophagoscopy. This, apart from the serious and distressing nature of the maladies, justifies the publication of monographs dealing exclusively with the region.

Professor Gangolphe, within a brief space of 115 octavo pages, presents a summary of the diseases and their treatment. He deals successively with the surgical anatomy, the examination of the œsophagus and its malformations. Next he considers spasmodic strictures of the œsophagus, the infectious and parasitic diseases, the results of inflammation and injuries of the structure. He then discusses the treatment of foreign bodies and of cicatricial contractions, and concludes with a chapter on new growths of the œsophagus. Prior to the development and practical application of œsophagoscopy these diseases baffled the practitioner and were dealt with blindly, more particularly in cases of foreign bodies and strictures which, perhaps, baffled the best observers and clinicians. It is a mattter of common knowledge that foreign bodies usually lodge in the upper part of the œsophagus near to its mouth, which contracts upon and grips the obstructing body. When the body is arrested lower down it is not uncommonly due to blind propulsion by a probang. Œsophagoscopy is steadily diminishing the unfortunate results of groping in the dark. Nevertheless, the modern scientific method of treatment continues to be received in some quarters in a stepmotherly manner. For these reasons it is to be regretted that in the present monograph more space was not devoted to œsophagoscopy and to the description and illustration of the more recent instruments devised for direct ocular inspection, the most important improvement in this connexion being the extensible double tube, by means of which the entire œsophagus can be inspected without any preliminary blind probing.

This volume is an introduction to diseases of the œsophagus, and will be found to contain a considerable amount of information compressed within a small compass.

Records of the School of Medicine, Cairo. Vol. IV. The Anatomy and Life History of Agchylostoma Duodenale (Dubini): A Monograph (Part II.). By ARTHUR LOOSS, Ph.D., Professor of Biology and Parasitology. Published for the Ministry of Education, Egypt, by the National Printing Department, Cairo. 1911. Pp. 613, with 19 Plates.

IT appears peculiarly appropriate that a work on the ankylostoma duodenale should be written in Egypt. One investigator has said that there are grounds for believing that about a fourth of the population of Egypt suffers from this intestinal parasite in a greater or less degree. It has also been contended that ankylostomiasis has existed in the country as far back as there exist any medical records in Egypt. Two German observers, Joachim and Schenthauer, have found in the Ebers Papyrus, which is said to date back to 1530 years before the commencement of the Christian Era and 200 years before the Jewish Exodus took place, some evidence which they regard as pointing to the prevalence at that far distant time of a disease with symptoms suggestive of Egyptian chlorosis. But whether this be so or not, it is undoubted that Egyptian medicine has always been much concerned with the treatment of parasitic worms. It is therefore fitting that a great helminthologist like Professor Looss, actually resident in Egypt, should gather up all the facts known about this particular worm, and should add his own practical and laboratory experiences, making together the most complete work on this subject which has yet been published.

This monograph may be described in a single word, which is in common use among Professor Looss's countrymen, as "colossal." It sets out, with characteristic Teutonic attention to detail, all the points associated with the life-history of the ankylostoma duodenale, its development and the distinctive features of the eggs and larvæ, special mention being made of its development outside the host. The modes of infection are fully discussed and the author's own personal experiences, whereby he contracted ankylostomiasis, are related; the migration of larvæ and the symptoms produced thereby in man are also considered. The comparative frequency of the two modes of infection, by the mouth and by the skin, are duly dealt with. Professor Looss appears to have had in the past some reason for complaint that his views were misrepresented by some rival helminthologists; and in making reply he does not spare his opponents. But he good-naturedly explains that he is cruel to be kind, and that as a medical man must sometimes inflict pain before he can heal, so his replies to his opponents are to be regarded in the same light. Progress in our knowledge of the life history of this worm, he thinks, has been hindered by some of the investigators, "though good doctors," being "poor biologists." The heavy task of revising the translation of this work into English has been very successfully carried out by Dr. H. P. Keatinge, director of the Medical School at

Cairo. Professor Looss gives his reasons for using the word "agchylostoma" instead of the term "ankylostoma," more generally used. It is impossible, however, to get over the fact that the Greek γ before a guttural is, and always has been, sounded as n, and was always so Latinised, and by consequence so Englished—e.g., ἀγγελος, *angelus*, angel, to choose one out of innumerable words in common use.

This monograph must prove of the greatest service to all who seek for knowledge respecting the ankylostoma duodenale and Egyptian chlorosis.

A Handbook of Medical Diagnosis for the Use of Practitioners and Students. By J. C. WILSON, A.M., M.D., Professor of the Practice of Medicine and Clinical Medicine in the Jefferson Medical College, and Physician to its Hospital. Third edition, thoroughly revised. London and Philadelphia: J. B. Lippincott Company. Pp. 1438. Price 25*s*.

THE subject matter of this handbook is divided into four parts with a view of simplifying the arrangement of the topics in a department of medicine which has attained large scope and importance. The first part, "Medical Diagnosis in General," considers the boundaries and relations of the external parts and internal organs of the body, and is rendered more explicit by excellent photographs and diagrams. Students will find the remarks on case-taking well worthy of study.

The second part of the work is concerned with certain methods employed in diagnosis and their results. In considering physical examination, inspection, palpation, mensuration, percussion, and auscultation are well described, but the details given are rather too minute and numerous and are likely to give rise to confusion in the minds of students just entering on their practical studies in the hospital. The examination of the blood, the urine, and the sputum is fully discussed, and the conclusions to be drawn from the results are well set forth. The section on the examination of the nervous system deserves special praise. The preliminary considerations on the "neuron" will be found most instructive both by students and practitioners, whilst the significance of the various symptoms and the behaviour of the reflexes is plainly and succinctly laid down.

In the third part, "symptoms and signs"—i.e., the clinical phenomena of disease, both subjective and objective—the student will find many instructive hints and suggestions, which by helping him to cultivate his powers of observation will prove of service to him throughout his professional career. In the fourth part the diagnosis of various diseases is discussed according to the usual classification adopted in medical text-books, and sections are devoted to the diagnosis of the chronic intoxications, food poisoning, auto-intoxication, and constitutional diseases, such as gout and diabetes. This portion of the work will prove valuable for reference by the practitioner, for the information sought can be readily obtained, owing to the free use of large type to indicate the various subjects, each disease being described under the successive subheads of etiology, morbid anatomy (very briefly given), symptoms, physical signs, diagnosis, and prognosis. A full and complete consideration is thus given to each malady.

The present edition has been brought fully up to date, and the most important advances in the knowledge of diseases and their diagnosis have been incorporated. The illustrations are excellent and considerably aid in the elucidation of the letterpress.

Handbook on Military Sanitation for Regimental Officers. By K. B. BARNETT, M.B, B.Ch. R.U.I., F.R.C.S.Irel., Major, Royal Army Medical Corps. With an Introduction by Lieutenant-General Sir HORACE L. SMITH-DORRIEN, K.C.B., D.S.O., A.D.C. 1912. London: Forster, Groom, and Co., Limited. Pp. 176. Price 2*s*. 6*d*.

THIS small handbook has been prepared, as its title indicates, for regimental officers of the army at home and abroad, not only for examination purposes, but also as a guide in their daily duties in barracks, camp, and on the line of march.

The author very rightly draws attention to the fact that the popular idea of sanitation is "something to do with drains and smells," but it has a much wider significance, and in its application to military life includes all the methods to be adopted for preserving the health of the soldier in peace and war, at home and abroad. Nelson, in 1804, wrote: "The great thing in all military service is health; and you will agree with me that it is easier for an officer to keep men healthy than for a physician to cure them." The present Army Medical Service dates from the introduction of sanitation and many other much-needed reforms in the army at the end of the Crimean war. This was chiefly brought about by the historical letters of the late Sir William Russell to the *Times* describing the awful condition of the troops in the trenches and hospitals before Sebastopol. Sidney Herbert, Secretary of State for War, wrote in the year 1859: "If the education of military officers comprehended a knowledge of the principles of sanitary science, commanding officers might safely be left to their own judgment in adopting sanitary precautions for protecting the health of the men." In 1861 regular lectures on sanitary matters were delivered at the Military School of St. Cyr to the officers of the French army. In the United Kingdom it was not until 1906, four years after the South African war, that a "School of Army Sanitation" was opened at Aldershot at the instigation of Sir Alfred Keogh, K.C.B., Director-General of the Army Medical Service, for the instruction of officers and men of the British army; and by Army Order 3, dated January, 1908, all officers before promotion to the rank of captain and all cadets before appointment to commissions in the regular forces are required to pass an examination in sanitation, as was suggested by Herbert in 1859.

This small book will prove of value to regimental officers, as it is simple, practical, and easily understood, for technical terms have been avoided where possible, and, when included, are explained.

MISCELLANEOUS VOLUMES.

In *Charles Dickens as Editor*, by R. C. LEHMANN (London: Smith, Elder, and Co. 1912. Pp. 404. Price 12*s*. 6*d*), the reader will learn something of the constant vigilance, the unremitting toil, the constant weight of responsibility to public, author, and publisher alike, that are required of a conscientious editor. The book consists of a series of letters addressed to Dickens's sub-editor, Mr. W. H. Wills, covering the period of his editorship of the *Daily News*, *Household Words*, *Once a Week*, and *All the Year Round*—viz., from 1848 to 1870. There is little or nothing of special medical interest in the book, the only references by name that we can find to medical men of note being to an expected call from Mr. (later Sir) Erasmus Wilson, and to Sir Charles Shaw, "for many years the first surgeon at the Middlesex Hospital." The violent opposition in 1856 of Miss Harriet Martineau to the factory laws is interesting. She is said to have stated in a very vituperative pamphlet championing the

manufacturers that "The issue to which the question is now brought is that of the supersession of either the textile manufactures or the existing factory law. The two cannot longer coexist." The factory laws have, however, not only continued to exist, but their application has since been widely extended, while the textile industries are not yet defunct. In one of his letters Dickens says: "I cannot bear the notion of the 'Academy for Cooks' going next to 'Illiberal Doctors'" (published in *All the Year Round*, February, 1863), but whether it was the purveyors of meat or the purveyors of medicine for whose susceptibilities he was so solicitous we are not told. He also tells us that being shaken by the constant express travelling occasioned by his reading tours: "Said the doctors, 'Take warning. Stop instantly.' I made the plunge and became, please God, well." Truly a sensible patient! One little touch of real human charity may be earnestly commended to the attention—and imitation—of the numerous tribe of vicarious philanthropists, both in and out of Parliament, who so earnestly yearn to alleviate the sufferings of the unfortunate at the doctor's expense. He writes in January, 1856, to Mr. Wills as follows: "Will you send John [his own servant] to Mr. Morgan, our family apothecary (John knows his house near Russell-square), with a note asking him to call upon you at the office at a certain time? When he comes, will you tell him that you have it in charge from me to beg him to charge his attendance, medicines, &c., for Mrs. Hogarth in her illness to my account, and just to say nothing at all about the matter to her, or her family, or any one else."—We recognise the grand novelist and moralist that Dickens was when we try to read the modern novel written to caricature and chastise our social vices. No one could be more wildly sensational than Dickens, and no one more hopelessly sentimental; yet the English-speaking world hung on his lips, and time after time social reform followed his teachings. Those who delight in slang, socialism, or sensation, one or all of them, may sup full with horrors by a perusal of *An Enemy to Society*, by GEORGE BRONSON-HOWARD (London: T. Werner Laurie. 1912. Pp. 350. Price 6*s*.). But we doubt if any reformation will follow upon his onslaughts on the wicked. A socialist of criminal instincts works upon a poor tradesman in New York through the commercial wrongs inflicted upon him by an unscrupulous trust magnate to kidnap the latter's infant son. This son is brought up as an "enemy to society," and instructed in the arts of card-sharping and burglary under the guise of philanthropic socialism, and taught that to rob the wealthy oppressors of the poor is the whole duty of modern chivalry. The lad, apparently being devoid of any conscience to admonish him that even those desirous of doing good must not attain it by means in themselves evil, throws himself with the zest of unsophisticated innocence into a career of crime, attaining at the same time an enviable reputation as a philanthropist with the fruits of his crimes. Needless to say, his instructors, whose love for the oppressed poor is by no means equal to their hatred of the oppressing rich, show no such weakly sentimentality about their own shares of the plunder which he is their catspaw for obtaining. When the hero falls in love—as it happens, with the ward of his unknown father—he awakens to the falsity of the fiction wherewith his actions have hitherto been guided, and it recoils on his mentors like a boomerang. Presumably the book is intended to convey a moral. Whether it is that socialism is the ideal morality or that socialists are *au fond* as selfish as other people, that nature is stronger than nurture or nurture than nature, it is hard to say. All that we have been able to deduce from the story is that card-sharping and burglary are not only not reprehensible, they are indeed actually righteous and salutary, provided they are practised against trust magnates and other unscrupulous wealthy people. The book contains, however, a remarkable *exposé* of the methods of the New York police, and of the political and administrative corruption in that city.

In THE LANCET of April 22nd, 1911, p. 1090, we discussed editorially the plan for the organisation of a National Medical Service, elaborated by Professor Benjamin Moore in his book "The Dawn of the Health Age," and while admitting that the ventilation of such views, leading as they do to thinking about the fundamental issues, serves good purpose, we expressed our conviction that such a plan as was there proposed was not at present at any rate practical, if for no stronger reason at least because it would be unpalatable to the medical profession and the public alike. This same comment applies equally to *A National Medical Service*, by F. LAWSON DODD, M.R.C.S. Eng., L.R.C.P. Lond. (Fabian Tract, No. 160. London: The Fabian Society. 1911. Pp. 20. Price 2*d*.), which is a very well-written presentation of the same general principles, lacking their detailed mode of application, as those submitted in Professor Moore's book. Mr. Dodd, however, urges that the transition could be effected without undue disturbance by increasing the efficiency of the public departments of medicine until the individual demand for curative advice and medicine became largely reduced as a consequence of the collective demand for information as to how to suppress or improve the callings and home conditions that kill and maim. Thus, he thinks, the centre of gravity of medicine will leave the curative and tend more towards the preventive side of medicine, rendering practicable in the future the establishment of a National Medical Service.—Mr. J. B. Pike, M.R.C.S. Eng., honorary surgeon to the Loughborough General Hospital, discusses the National Insurance Act in a pamphlet bearing that title (Loughborough and London: John Corah and Son. Pp. 15. Price 3*d*.) in both a briefly explanatory and a critical manner. He describes the intention and scope of the Act; the obligations upon employers, employed, and the revenue; the benefits; the relation of the Act to the medical profession and the Friendly Societies, to the Poor-law service, and to the voluntary hospitals. In regard particularly to the relation of the Act to the medical profession Mr. Pike insists that the proposed arrangements under the Act would perpetuate some of the worst features of the Friendly Society organisations; that Mr. Lloyd George is mistaken in assuming that the present contract arrangements are largely countenanced, for "some of them are disapproved by the General Medical Council and unrecognised in practice"; that as a matter of fact the suspension of medical benefits under the Act, so far from being disastrous for the doctors, would be the best thing in the world for them; and that "by the organisation of public medical services throughout the country the profession can work side by side with the Act and in coöperation with its legitimate aims." This last course he regards as the true solution of the present *impasse*, the feeling in favour of which is rapidly gaining ground. In an appendix he gives the rules and by-laws of the Loughborough Provident Medical Association established just 20 years ago, and consisting of "all medical men willing to coöperate in the work of the institution at present practising privately in Loughborough, with such additions as may from time to time be decided upon by the committee," wherein such essential principles as freedom from outside control, choice of doctor, and an income limit of £2 a week are in successful operation.

In *A Digest of the Laws and Regulations of the Various States Relating to the Reporting of Cases of Sickness* (Washington: U.S A. Government Printing Office. 1911. Pp. 191), Assistant Surgeon-General John W. Trask, of the United States Public Health and Marine Hospital Service, abstracts these

laws under the heading of the States arranged in alphabetical order, analyses them in tabular form, and appends extracts in the *ipsissima verba* from recent laws enacted by the various States on the subject. The peculiar character of the United States constitution, whereby each individual State is absolutely autonomous in all matters of police, which includes care for the public health, renders a lack of coördination a source of peril to neighbouring and even remote States, in consequence of the facility of commercial and personal intercourse due to good roads and rapid transit. Some of the author's remarks, however, apply to all countries. For instance, a failure on the part of practitioners to perform the essential duty of notification of prescribed diseases is not confined to the United States. Similar defaulters are to be found occasionally in other countries. Surgeon-General Trask suggests that "where the State issues licences permitting the practice of medicine, one of the most reasonable penalties which it might be expected to impose on physicians who did not comply with the laws [relating to notification] would be the suspension or revocation of the licence." In regard to the vexed question as to what diseases should be made notifiable, there is wisdom in the remark that "there would seem to be decided advantages in making notifiable all preventable diseases, and that these might be considered to include infectious diseases, certain parasitic diseases, occupation diseases, and certain diseases due to damaged foods." The pamphlet is a useful publication of reference for those interested in the study or practice of public health.

JOURNALS AND MAGAZINES.

Æsculape. Vol. II., No. 2. February, 1912. Paris: A. Rouzaud.—In this number Dr. Laignel-Lavastine writes a final article on the Utility of Classical Studies for the Medical Career. He considers the influence of such studies on the formation of the medical character, and traces the decay of culture in French medical students since 1902 to the abolition of compulsory classical studies, for the restoration of which to the curriculum he submits a scheme. Dr. H. M. Fay continues his researches on the "Cagots" and the Church. According to him the "cagots" (as generally understood, cretins) were really the lepers of the Middle Ages, and he reproduces several of the grotesque heads and figures from fonts and capitals to confirm his contention. Count Robert de Montesquiou discusses the peculiar art of Rodolphe Bresdin, and Dr. Lucien Libert, in "Paysages et Cités d'Orient," gives a fascinating account of the Greek lands. Dr. Léon Demonchy traces historically the ideas on the therapeutic value of music, and essays to show that music-therapy has its foundations not merely in empirical observation but in true physiological conditions. Dr. H. Gougerot and Dr. M. Dogny give a very interesting antiquarian study of hospital internes, the "élèves chirurgiens" of early days, founded on their discovery of certain hospital documents of the old Hôpital St. Louis and its parent institution, the Hostel Dieu. The decree, dated June 9th, 1679, establishing the order of "élèves chirurgiens" is given. M. André Baud makes a contribution to radium-therapy in tuberculosis.

The Child.—In the March issue Mrs. Mary D. Scharlieb, M.D., contributes an excellent article on the morals of the young. She brings under consideration the factors in the making of morals—heredity and environment; the foundations of character—discipline, obedience, self-denial, and self-control; hindrances to morality—overcrowding, poverty, improper feeding or clothing, vices (such as juvenile smoking, drinking, and gambling), and premature emancipation from discipline; helps to morality, in which she includes (besides the opposites to the hindrances) team games and military training. With regard to the last-named she says: "Military training is useful in much the same way as team games, and probably one of the greatest boons to the young people of the land would be compulsory military training for a short time during adolescence, but until this end is attained we must seek to develop a very considerable extension of the present movement for the formation of Territorial Corps, Lads' Brigades, Boy Scouts, and Girl Guides. The moral element comes into all these, and into none more prominently and happily than into the Boy Scout movement with its simple vow of obedience, of self-denial, and of loving help to the aged and defenceless." Dr. Alice Burn discusses the clothing of children in relation to physique and development. Dr. David McKail considers eyestrain in school children, and Edith H. Hewett the teaching of deaf children. "A Child Garden in a Slum" is the title of a delightful pen-picture of a free kindergarten in Salford, for children aged from three to five years, by Mrs. W. F. Lofthouse, who urges on groups of leisured women citizens this opening for a definite social service, which costs about £130 a year. Dr. L. D. Cruickshank describes child welfare work in Dunfermline. Professor C. H. Herford, Litt.D., gives a biographical note of William Henry Herford, a pioneer of child study, and Madeline Bateman describes Westfield College, Hampstead, for women students of the University of London. The Birmingham and District Cripples' Union is the subject of a paper by Mary Champness.

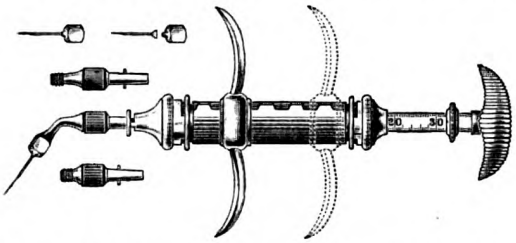
VOYAGE D'ÉTUDES MÉDICALES.—The second Voyage d'Études Médicales of the season of 1912 will take place from Sept. 1st to 14th under the presidency of Professor Landouzy, when the following route will be observed: La Motte-Beuvron (sanatorium), La Roche-Posay, Néris, Evaux, La Bourboule, Mont-Dore, Saint-Nectaire, Vic-sur-Cère and Le Lioran (climatic stations), Royat, Durtol (sanatorium), Chatel-Guyon, Vichy, Bourbon-l'Archambault, Bourbon-Lancy, St. Honoré-les-Bains, Pougues. For further information application should be made to Dr. Carron de la Carrière, 2, Rue Lincoln, or to Dr. Jouaust, 4, Rue Frédéric-Bastiat, Paris.

CHELSEA CLINICAL SOCIETY: ANNUAL DINNER.—This society held its annual dinner at the Hotel Richelieu on March 20th, the day after the conclusion of its annual clinical debate. The President, Dr. J. A. Mansell Moullin, was in the chair, and the guest of the evening was Professor Einthoven, of Leyden, to whose paper on the Electrocardiogram (published on p. 853 of our present issue), many complimentary references were made by the speakers. The chairman, in proposing the toast of the society, congratulated it on having now, in its fifteenth year, a suitable meeting-place in the medical school of St. George's Hospital. This had added much to the success of the meetings, and the members were very grateful to the hospital staff for lending the rooms. Dr. T. B. Hyslop responded in a humorous speech, and spoke of the increasing use and success of the society. The health of the guests was proposed by Dr. T. W. Parkinson, who referred to the international and non-political nature of the brotherhood of science. He said that the medical profession, although it practised conservative surgery, prescribed a liberal diet, performed radical operations, and held socialistic theories of friendship, had no other politics. Professor Einthoven, in his reply, paid a graceful tribute to the society, and remarked that the electrocardiogram had at least demonstrated the good-heartedness of English medical men. Dr. A. Waller, who was called upon for a speech, said that he had never dreamt of the practical possibilities of the instrument designed by Professor Einthoven. Dr. R. S. Trevor, dean of St. George's Hospital Medical School, the Mayor of Chelsea, and Professor Hugo Marcus, of Buenos Aires, also responded for the visitors, and the toast of the President and officers of the society was entrusted to Dr. Campbell Boyd. Dr. Mansell Moullin (president) and Dr. G. A. Simmons (treasurer) replied, and a successful evening was shortly afterwards brought to a close.

New Inventions.

DENTAL HYPODERMIC SYRINGE.

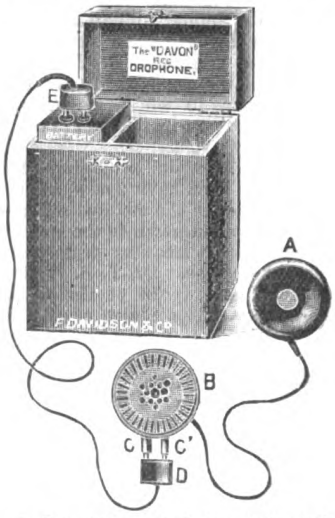
Messrs. Burroughs, Wellcome, and Co., Snow Hill Buildings, London, E C., have made an improved pattern of their dental hypodermic syringe, which has been strengthened and simplified in some of its parts. The syringe shown in the illustration is made entirely of metal, is easily taken apart for cleaning and sterilising, and as easily put together again. No packing is required round the piston, which consists of a solid plain metal plunger, ground to fit the barrel accurately. The barrel, cap, nozzle, and needle attachment are locked together by a simple modified form of bayonet catch, which



does away with screws, washers, and other parts easily damaged or lost. The finger-grip can be fixed at any point on the barrel, and there is a screw on the plunger rod which regulates the amount of fluid injected. Unmounted needles are used, and the metal case in which the instrument is packed forms a sterilising tray. The qualities which the manufacturers claim for this syringe—namely, efficiency, durability, stability, and convenience—are well substantiated in actual use.

THE "DAVON" OROPHONE.

THIS electrical aid has a different tone to any other at present on the market. This in itself will make it of value to cases which can be aided by this class of instrument, as a certain proportion of patients will prefer it to any other design. It will not, however, suit such a wide range of deaf cases as some of the appliances already known to us. With this instrument, after the ear has been educated to it, the suitable



A, Receiver. B, Transmitter. C, C', Terminals of the transmitter into which the connecting plug D is inserted; these terminals are of different size, so that the plug can only be inserted in the right manner. D, Connecting plug to transmitter. E, Connecting plug to battery.

patient will be able to pick up speech from a distance, as, although the instrument is not a loud one, the transmitter diaphragm is not "damped" in any manner. The buzzing present in so many "electrical aids" is abolished in the "Orophone," which would serve as a preparatory instrument until a more powerful one could be used. The transmitter has no tab to fasten it on to the clothing, or any means of being attached to the battery, so that the battery may be used as a pedestal or support. The receiver ear-cap is unnecessarily large for the size of the diaphragm used, and the diaphragm is not adjustable, while the battery is too large to be carried in the pocket. The flexible cords are good and well fastened off, so that the mechanical strain comes on the covering and not on the conductor; but the receiver cord is too long, and the method of fastening the cord on to the transmitter entails taking the transmitter to pieces to put on a new cord. The instrument may not prove very economical, because there is no switch in circuit to use when not listening to any sound, while the current consumption is not low. It has been tried on a number of cases and most patients could hear distinctly better with it than without it. The instrument is made by Messrs. F. Davidson and Co., 29, Great Portland-street, London, W.

A NEW PORTABLE OPERATING TABLE.

THIS table, recently made to my design, consists throughout of finest seamless steel tubing, except the hinged joints, which are of solid brass, and the ratchets, which are of pressed steel. The table is absolutely rigid, very strong, and weighs a little over 30 lb. It can be unpacked, set out, and repacked in a few seconds. When closed it measures $39 \times 21 \times 3\frac{1}{2}$ in. (Fig. 1), when open it is $71 \times 36 \times 21$ in. (Fig. 2), but it can be manufactured any less height than 3 ft. The head legs are slanted, giving a large base, and suiting the Trendelenburg and allied positions; all the legs are fitted with solid rubber feet. The illustrations show the table closed and open, with the long foot extension dropped, but it can be fixed in any of the positions required in modern surgery. Lithotomy uprights and straps are provided, and an arm rest and instrument trays which simply catch on to the side of

FIG. 1.

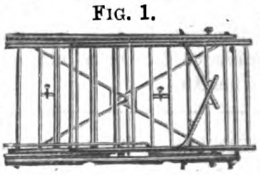


FIG. 2.

the table are added. The difficulty met with, even in operating theatre tables, of over-extending the arm, as required in dissection of the axilla, has been met by a detachable rotatable bar to which the arm may be attached and held horizontally at any angle. In addition an upright bar can be fitted on to any of the legs, or at any point on the upper horizontal bars, on which may be hung a lamp, an infusion apparatus, and so on; this also carries a candle-socket. All the tube joints are welded and rounded. The ratchets of the head and foot extensions are detachable and fitted with special sockets preventing any save intentional movements. The table is nickel-plated throughout, but can be enamelled if preferred. For travelling purposes a canvas bag, or a light tin case, or a wooden case, which becomes an instrument table if required, have been provided by the makers, Messrs. James Gibbons, of Wolverhampton.

Wolverhampton. C. A. STIDSTON, M.D. Lond.

THE LANCET.

LONDON: SATURDAY, MARCH 30, 1912.

Coal Smoke Abatement.

MUCH good work has been done in the direction of abating the smoke nuisance since the question was asked in THE LANCET some 17 years ago, "Is the Smoke Nuisances Act properly enforced?" That question received an emphatically negative answer from us, with a positive proof that the provisions of the Act were practically ignored by our public health authorities, the evidence of whose wanton disregard was patent on all sides. Three years later, however, there were signs of the question receiving serious attention, for in 1898 the Coal Smoke Abatement Society was formed under the guidance of its first and present President, Sir WILLIAM RICHMOND, with Dr. HAROLD DES VŒUX, the treasurer, as one of its leading spirits. The society has since done excellent work by prosecuting practical inquiries to show the extent to which nuisances existed and by pointing the way to remedy. From time to time we have published in our columns the results of the practical investigations referred to; the opinion of sanitary authorities has thereby been stimulated, and at last the public is realising that the evil is real and one that should be prevented. So much progress has been made in the comparatively short time during which the Coal Smoke Abatement Society has existed that it feels justified in reporting that "the result of the modern crusade is already apparent in a decrease of the smoke-laden fogs which a generation ago made existence in the metropolis a burden for several months in each year." The society has set itself a great task, but the results are certainly encouraging.

There is much more to be done, however, as was shown in the report from THE LANCET Laboratory which appeared recently in our columns[1] as to the enormous amount of soot which annually falls upon the metropolitan area. When it is shown that from 60,000 to 70,000 tons of soot are showered upon our public buildings and streets in the metropolitan area every year, it is clear that not only is there a sheer wastage of fuel going on, but also an output of products, solid and gaseous, which are a menace to the public health and a source of destruction to property. The metropolis is not alone in committing this offence, for recently we have received a very carefully compiled and interesting account of the smoke scourge in Leeds,[2] in which the authors record that a comparison of THE LANCET Laboratory figures in regard to London shows on the whole a very ominous agreement with the results obtained in Leeds. For example, the annual soot deposit from Leeds rain varies from 539 tons per square mile to 25 tons; in London from 426 tons to 158 tons, the mean for the Leeds area being 220 tons, that of the London area 260 tons per square mile. Again, the amount of sulphuric acid in the London city area was about 69 tons per square mile, whilst in Leeds the average for the four city stations was 65 tons per square mile. It is rare indeed that the air, even in the country, can be shown to be free from atmospheric contamination due to smoke. The importance of these inquiries is obvious when health statistics in relation to smoke-laden places show without doubt that coal dust, smoke, and soot increase the death-rate from acute lung diseases. The great damage inflicted upon vegetation, upon the fabrics of our buildings, and the stores of our merchandise has also to be sorrowfully remembered.

Considerations of the foregoing description make the International Smoke Abatement Exhibition, held this week under the auspices of the Coal Smoke Abatement Society at the Royal Agricultural Hall, of special interest. It is clear, at all events, that a movement good from both a health and economic point of view has come into real being. "Gas companies and electricity supply undertakings," we are told—and a personal inspection of the exhibits which we have made shows that it is true—"vie with each other in bringing before the notice of the community the special advantages which their systems of cooking and heating offer to the householder." Natural and artificial smokeless fuels are being constantly pressed upon the public, and in various realms of industry it is generally recognised that scientific principles can now be so applied to the production of power that in most cases, at all events, it is in a pecuniary sense advantageous to avoid the emission of unreasonable volumes of smoke. The remarkable reduction which has taken place in factory and domestic smoke is a sign clear enough to encourage the hope that a clean and pure air is within a measurable distance. We congratulate the Coal Smoke Abatement Society on the excellent progress which it is making, and we are glad that we have been able to contribute to this success by our own practical investigations, as well as by the publicity which from time to time we have given to the urgent need there is for removing a reproach from our midst.

The Treatment of Leprosy by Nastin.

FOR many years search has been made to discover a specific for leprosy, a remedy which might be relied upon to act in the majority of cases as mercury does in syphilis or quinine in malaria. Though various drugs have been brought forward at one period or another as cures for leprosy, none of them have stood the test of time, and each in turn after a brief period of popularity has fallen into disfavour. Some cases of the disease improve unaccountably for a time without having been submitted to any method of treatment, and it is a well-recognised fact that the mere removal of a leper from his squalid and filthy home to the better hygienic surroundings of a hospital or asylum often produces, for a time at least, a marked improvement in his state of health. Leprosy in many instances follows an irregular or erratic

[1] The Sootfall of London: Its Amount, Quality, and Effects. THE LANCET, Jan. 6th, 1912, p. 47.
[2] Smoke, a Study of Town Air. By Julius B. Cohen, Ph.D., B.Sc., F.R.S., and Arthur G. Ruston, B.A., B.Sc. London: Edward Arnold. 1912. Pp. 88. Price 5s. net.

course, the progress of the disease being apparently arrested without any obvious cause, and the literature of leprosy furnishes many examples in which nature entirely unaided by drugs has brought about what may be regarded as an approximation to a cure. When with his knowledge and consent a leprous patient is placed under treatment by a new remedy his mental attitude seems to be stimulated by the renewed hope of recovery inspired by the new drug, and he is seemingly apt to exaggerate unconsciously his own feelings and to express himself as being much benefited, at the same time devoting himself to his work with greater zest and alacrity. In the circumstances it is obvious that there are peculiar difficulties to be encountered in estimating the precise value of any method of treatment for leprosy, and it is admitted that errors in judgment are particularly liable to arise in this connexion.

Few modes of treatment brought forward in recent years for leprosy have raised such hopeful anticipations at their introduction as did nastin, which was introduced some six or seven years ago by Professor G. DEYCKE, now of Hamburg, and formerly of the Turkish Government Medical Service. At the February meeting of the Society of Tropical Medicine in London Professor DEYCKE read a paper on the treatment of leprosy by his method and the results so far obtained by it. In the statistics which he brought forward he dealt with 529 cases which had been treated by 69 different medical men in various parts of the world. He stated that he had excluded from his tables any cases treated personally by himself for the reason that the fate of a new remedy should rest as far as possible in the field of general practice, and not in the hands of the discoverer. Of the 529 cases, 13 were reported as cured, 34 nearly cured, 131 considerably improved, and 154 as improved—a total of 332, or 62·76 per cent., in which beneficial results were attributed to the method of treatment. The improvement is said to have been almost equally shared by the three forms of the disease—the nodular, the anæsthetic, and the mixed, and Professor DEYCKE has pointed out that he has never in his published works spoken about the "cure" of leprosy by nastin, but always of "the arrest of the disease" or "the improvement in the symptoms and the general health of the patient." He holds it advisable in special cases to speak of nothing more than "temporary freedom from the presence of B. lepræ." But even with these restrictions he claims that his results are very satisfactory, and he repeats what he maintained at the Bergen Congress on Leprosy in 1909, that "the nastin treatment, if consistently and rationally applied for a sufficient time, produces in a large percentage of cases of leprosy more or less extensive improvement in the 'leprous systems' and in the general health of the patients." He also emphasises the fact that he attaches less importance to the "qualitative" results of the treatment than to the "quantitative," contending that he is justified in the assertion that nastin, though no "wonder-remedy," has proved "quantitatively" equal to the claims which he had put forward on its behalf.

When nastin was first brought forward some difficulty was experienced in finding sufficient opportunities for trying its effect on any large scale, and repeated applications were made by Professor DEYCKE and his supporters to the British authorities to have the remedy tested in one or other of the colonies where leprosy was prevalent. Ultimately the Colonial Office agreed to allow Professor DEYCKE to test nastin in the public leper asylum at Mahaica in British Guiana, the work to be carried out in coöperation with the colonial medical officers. During a period of six months Professor DEYCKE conducted the treatment by his method, and at the same time instructed the Government medical men in the details which were to be carried out after his departure, so that there was no question of the treatment being administered otherwise than according to its originator's own method. Last year Dr. K. S. WISE, the Government bacteriologist (who is also, we understand, the director of public health) for British Guiana, presented a report to the Colonial Office showing the results achieved in the 135 lepers who had received the treatment between December, 1908, and September, 1910.[1] Dr. WISE reported that a few seemed to have improved considerably, that some were worse, and that the majority remained *in statu quo;* he added that since the favourable results were so few a longer and wider experience could alone determine whether the successful cases were merely instances of natural improvement irrespective of the nastin treatment, or were, on the other hand, really due to the action of that remedy alone. In continuation of Dr. WISE'S observations the Colonial Office has recently issued a "Further Report on the Nastin and Benzoyl Chloride Treatment of Leprosy at the Mahaica Leper Asylum from September, 1910, to September, 1911," by Dr. E. P. MINETT, assistant bacteriologist for British Guiana. This officer had taken Dr. WISE'S place during the latter's absence on long leave in Europe. The report deals with three groups of cases, 24 patients being treated with nastin, 71 with benzoyl chloride, and 8 receiving no medicinal treatment at all. Dr. MINETT appears to have no hesitation in arriving at his conclusions. He regards nastin as being apparently of little value in cases of leprosy, and the subcutaneous injection of benzoyl chloride in sterilised oleum petrolatum he looks upon as of doubtful utility, though in the figures which he presents the latter shows a slightly higher percentage of improvement in the cases treated with it, as compared with the former. But in his opinion benzoyl chloride in petroleum oil is extremely valuable as a nasal spray or as a paint for application to ulcerating surfaces; it quickly renders the discharge free from the presence of bacilli, and he strongly recommends its regular use for this purpose in all leper asylums. The so-called destruction of the bacilli is, in Dr. MINETT'S view, of limited value as an indication of the effects of treatment.

The results obtained in the leper asylum at Mahaica appear to be very different from those reported to Professor DEYCKE by the 69 medical practitioners already mentioned. The British Guiana cases were excluded from Professor DEYCKE'S statistics, partly because he had himself treated some of them for six months, but mainly because, as he stated in his paper, he had no figures as to the actual results; he adds, however, that he knew that a number of the cases had been discharged from the asylum, bacteriological

[1] THE LANCET, July 22nd, 1911, p. 237.

examination having proved the absence of B. lepræ in these instances. But it appears to us the figures were available if wanted, for the reports by Dr. WISE and Dr. MINETT had already been published before Professor DEYCKE'S paper was read. It is, of course, possible that selection of cases for the nastin treatment might have had an important influence on the statistics. For if early cases were selected by the majority of the 69 practitioners satisfactory results of treatment would be more likely to be obtained than if advanced cases had been chosen. We have it on Professor DEYCKE'S authority that a good number of the lepers treated by nastin at the Mahaica Asylum were in an extremely bad condition as regards the disease; and it is, therefore, possible that such cases would not readily derive much benefit from the nastin treatment. With this conflicting evidence before us it is not easy to arrive at a definite conclusion, but in the circumstances we think we are justified in saying that up to the present the evidence put forward in favour of nastin is hardly convincing enough to lead to its general acceptance. Further observation and experience seem to be required before a correct opinion regarding it can be reached.

Annotations.

"Ne quid nimis."

THE COAL STRIKE.

BY no one is the approach of misery among the poor more easily detected than by the medical man, and now the signs have become very obvious to those whose daily work it is to superintend our public health or administer our great charities. It is very difficult, therefore, to contemplate without keen anxiety the outlook that this disastrous coal strike may yet last some weeks—or that, at any rate, it may be some weeks before a general return to work takes place. But that is the prospect which has to be faced. The calmness and order which have so far characterised the behaviour of the public under cruel trial is a thing of which we may all, as a people, be justly proud. The necessary self-control is putting a severe strain upon thousands of persons, as all our readers know, but the attitude must be maintained, and those of us who can help their weaker brethren in any of the sad concomitants of a national tragedy will find in such actions the bravest support for themselves.

MURDER BY POISON.

TRIALS for murder by poison are of special interest, both to the medical man and to the student of crime from the legal point of view. Of necessity a murder by poison is always premeditated and practically always one carried out in secret. Evidence calculated to bring the crime home to the accused is therefore, as a rule, purely circumstantial and dependent upon problems of chemical analysis and a knowledge of pathology and of differential clinical diagnosis. Medical murderers are, we are thankful to say, few in number, but naturally enough when a member of the medical profession does sink so low as to commit murder he chooses poison as the means of crime. He can obtain it without suspicion, and also in many cases has opportunities for administration which are denied to laymen. Three of the most notable trials for murder by poison in the last century were those of Lamson, Pritchard, and Palmer, all three medical men. The trial of the last-named, a copy of the proceedings at which now lies before us, created a great sensation at the time, and is still a leading case in treatises on medical jurisprudence as to strychnine poisoning.[1] The medical points raised in the trial were many and various, among the chief being the conflict of evidence as to whether the symptoms from which Cook suffered were indicative of strychnine poisoning, tetanus, "idiopathic" or traumatic, or, it is surprising to read at the present day, angina pectoris. Again, no strychnine was found in the body after death by the Crown analysts, although various analysts called by the defence testified that there should have been no difficulty in finding it, had it been administered so as to cause death. Mr. Knott has contributed an interesting introduction, giving a *précis* of the Attorney-General's opening speech for the Crown. He has also printed two appendices, of which the second gives an account of the judges (there were three) and the counsel engaged in the trial, while Appendix I. is a reprint of an astonishing pamphlet which was circulated after the trial, addressed to Lord Chief Justice Campbell, and purporting to be written by the Rev. Thomas Palmer, brother of the prisoner. Thomas Palmer denied the authorship, and the letter is attributed "to a blackguard barrister." That William Palmer was guilty, not only of the murder of Cook but of several other murders for which he was not tried, there can be no reasonable doubt, and the proceedings at the trial form a notable example of careful and judicial reasoning of interest to every medical man. Mr. Knott makes no mention in his introduction of a story which has often been told, but which is worth recalling none the less. It is said that after the conviction of Palmer the inhabitants of Rugeley, being distressed at the evil reputation which their town had obtained, petitioned the then Prime Minister for leave to change the name of the town. They were uncertain by what new name to call it, and the Prime Minister kindly suggested that it should bear his own name. The deputation were much flattered until one of them suddenly remembered that the Minister's name was Palmerston. So Rugeley the town remained. Is there any basis of fact for this story?

EXPERIMENTS UPON LIFE WITHOUT MICROBES.

IN practically all vertebrates the alimentary canal contains very large numbers of bacteria, some of which appear to serve a useful purpose and therefore to be in a sense symbiotic. It has long been a matter of debate as to whether life is possible without these organisms, and experiments have hitherto given results which were by no means conclusive. Some interesting observations are recorded upon this subject in the *Annales de l'Institut Pasteur* of Feb. 25th by M. Michel Cohendy. Metchnikoff has shown that some invertebrates are bacteria-free. His researches demonstrated the aseptic character of the intestine of the scorpion and that of several species of mites. Certain helminthes, parasitic in man, such as young round worms, have also been found to be bacteria-free. Wollman has been able to rear the larvæ of flies (Lucilia Cæsar and Caliphora vomitoria) under sterile conditions. Experiments upon vertebrates have been attended by great technical difficulties and have given discordant results. Schottelius has devoted several years to the investigation of this question, using the hen's egg. His results have led him to the conclusion that life is impossible without microbes. Mme. Metchnikoff succeeded in raising under sterile conditions a series of tadpoles, but they were cachectic and puny. Nuttall and Thierfelder endeavoured to rear fœtal guinea-pigs removed

[1] Notable English Trials: William Palmer. Edited by George H. Knott. Edinburgh and London: William Hodge and Co. Price 5s. net. Pp. 320.

by Cæsarean section; the animals increased in weight normally, but the experiments had to be interrupted on the tenth day owing to technical difficulties. M. Cohendy has carried out observations upon the development of the chick under sterile conditions partly in Professor Schottelius's laboratory at Freiburg, partly at the Pasteur Institute in Professor Metchnikoff's laboratory. He has overcome the technical difficulties encountered by previous workers by devising ingenious apparatus, the first small, the second larger, enabling his observations to be prolonged. He has taken care to control his results by rearing chicks under precisely similar conditions, except in regard to the sterile nature of their food, and also by rearing others under normal conditions outside his apparatus. He has found that in all points except one the chickens raised under sterile conditions were similar to the controls, the only difference being in regard to their digestive functions. The appetite of the sterile animals is greater than that of the others, and their dejecta are more frequent and more abundant. The development in both was equal, and the sterile animals were at least as robust as the controls, although in some instances neither were as heavy as those reared outside the apparatus, this being due probably to the more confined space in which they were placed and to the other conditions of the experiment. M. Cohendy found also that the sterile chickens presented a very great resistance to death by cold, damp, hunger, and thirst. Those of them allowed to continue their life under ordinary conditions after a time of sterile life developed into well-grown adults. M. Cohendy concludes that life under sterile conditions is possible, and that it does not involve any disadvantages for the organism. At the same time he points out that his experiments show that though the intestinal flora are not indispensable they are yet utilised, since apparently the sterile animals require more food and digest it less completely than the normal ones. These results confirm those of Nuttall and Thierfelder, who found that cellulose was not digested by their sterile animals. The fact that these sterile chicks grow normally after the end of the experiment, although their intestines rapidly develop an abundant bacterial flora, suggests that the preparation for the struggle against these microbes is hereditary, and not the result of individually developed immunity. Professor Metchnikoff, in collaboration with four of his pupils, has obtained similar results with Pteropus medius. These observations are of far-reaching interest and merit careful notice.

THE CONSTITUENTS OF BUTTER.

IN THE LANCET of March 16th, p. 751, an account was given of a case heard at the Tower Bridge police court, the subject matter of which arose out of the alleged use of milk powder for the adulteration of butter. On that occasion it was a point at issue whether the milk powder found upon the defendant's premises was intended to be added to the butter which they manufactured, and the finding of the magistrate apparently did not deal decisively with the question whether the use of it, if proved, would constitute an offence under Section 3 of the Butter and Margarine Act, 1907, when he dismissed the case with £40 costs against the Board of Agriculture. In a case recently before Mr. Garrett, however, at the South-Western court, the intended use of the milk powder was not disputed, and evidence was given on both sides as to the desirability of its being employed, as, indeed, was also done before Mr. Rose. It was contended by Mr. MacMorran, K.C., for the defence that the use of milk powder in blending butter from various sources was for the purpose of promoting uniformity of texture, flavour, and colour, and not in order that the article sold might be cheaper to produce than butter to which no milk powder had been added; and that butter was not the less butter after the addition of 1 per cent. of milk powder, in itself a wholesome article of food. Mr. Garrett, in giving his decision, appears to have held that it is essential to butter that it should be churned direct from milk and cream, and that the addition of milk powder containing no butter fat diminished the proportion of butter fat in the compound obtained in such a manner as to constitute adulteration. He did not accept the view that as long as the constituents of butter were present in due proportion in the article produced it was unadulterated butter. After the learned magistrate had imposed a fine of £5, a discussion took place upon the question of costs, which on the side of the Board of Agriculture, the prosecutors, were stated to amount to about £200, and 80 guineas were allowed as costs. It is to be regretted that heavy expenses of this sort should have to be incurred either by the Board of Agriculture or by manufacturers in order to settle in an individual case what constitutes an offence against an Act of Parliament, where it is a matter as to which doubt may reasonably arise. At present, at any rate, Mr. Garrett's decision is one which does not bind, and need not influence, other magistrates who may come to a different conclusion upon similar facts. The preparation of food for the market is a matter which every year produces fresh developments, and mechanical and chemical science is called in aid in increasing degree. The legitimacy of interference with pre-established standards is often doubtful, and cases may arise where it is to the public interest that such interference should be sanctioned or condemned decisively, and it is suggested that it should be possible on such occasions to obtain a regulation, framed by the Government department interested, laying down a definite standard with regard to the matter in doubt. Such a regulation would be based upon the advice of experts guided by expert evidence in making inquiry. It must be remembered that a magistrate is an expert in deciding questions of law; as to questions of scientific fact he is a layman, deciding as such between the conflicting expert opinions.

IONISATION IN RINGWORM OF THE SCALP.

IN the treatment of ringworm of the scalp ordinary topical applications fail because they do not penetrate sufficiently deeply into the hair follicles. The X rays have proved a much more efficient remedy, but are open to the objection that the alopecia which they produce is sometimes permanent. In the *Glasgow Medical Journal* for February Mr. J. R. Riddell estimated the frequency of this occurrence as 2 per cent. of the cases treated, and therefore recommends ionisation, which overcomes the difficulty of penetration. The following technique has given him good results. The head is shaved or the hair cropped short all over. An aqueous 1 per cent. solution of mercuric chloride or iodine (dissolved with the aid of potassium iodide) is rubbed well into the affected parts. Folds of lint (10 to 16 ply) are soaked in the solution and applied evenly to the surface. Over this the electrode is placed and secured by a few turns of bandage. The lint should overlap the diseased area. The electrode may be made of any convenient metal. Mr. Riddell most frequently uses copper gauze, as it is pliable and easily adapted to the surface. It should be large enough to cover the diseased area, and the contact between the head and the lint and between the lint and the electrode should be of equal pressure all over. If there be any irregularity, so that over a small area the contact between the lint and the scalp is much better than elsewhere, the current will concentrate on that point, possibly to such an extent that a slough will be produced. Short of this there may be so much irritation that the treatment has

to be suspended for a week or more. If a public supply of electricity is available this may be used; if not, a battery of 20 or 30 cells. One pole of the supply is attached to the electrode on the head; the other is connected to a water bath in which the child's arm or foot is immersed, or to a large well-moistened pad which may be bound to the arm or leg. The current must not be turned on or increased too quickly. If it is the child will feel pain or disagreeable sensations, such as giddiness, and become restive, so that a prolonged sitting is impossible and only a weak current will be tolerated. The child must be secured so that he cannot suddenly break the circuit, as by taking the limb out of the water. If he does, he will experience a shock and not again willingly submit to the treatment. The current is slowly turned on and gradually increased until the subject begins to feel slight warmth in the scalp. After a few minutes it will be found the current can be increased without discomfort. It should be increased as much as possible short of discomfort. When the area under treatment is large a child usually allows 15 to 20 milliampères to be used. Each sitting should be as prolonged as possible. Mr. Riddell aims at from 40 to 50 minutes, as one sitting of 45 minutes is better than three of 15 minutes. The more prolonged the sitting the deeper will the ions penetrate. The pads should be kept thoroughly wet; at the end of the sitting the current should be turned slowly off. The treatment should be repeated two or three times a week. It is well to have the head washed daily or every other day with an antiseptic, such as the sulphur, naphthol, and green-soap mixture commonly prescribed. If the treatment makes the scalp irritable or scaly a mild antiseptic oil may be used between the sittings, but it must be thoroughly removed before ionisation. Mr. Riddell has found the treatment certain, rapid, and safe. The average number of long sittings required for cure was nine.

THE ART OF MEDICAL PRESCRIBING.

A SHORT article written by "A Retired Hospital Physician" recently appeared in the *Westminster Gazette* under the title "On Decay in the Art of Medical Prescribing." The writer stated that his main design was to prove that if medical men are to write sound and logical prescriptions they must be properly trained to do so; and he further maintained that there was a gradual decay in the art of prescribing, which had been going on for years, and was the natural result of defective teaching. Doubtless in the days of the apprenticed pupil a sound knowledge of the compounding of drugs was obtained, for to quote the words of the article, "all around him were the weapons of his future warfare; he saw, he handled, he weighed." There is much truth in the points that this writer has made, for too much stress is laid to-day on the diagnosis of medical cases and too little on the details of the treatment, especially in regard to the employment of drugs. There is a matter which he did not happen to mention, and it is one which hospital physicians would do well to caution students concerning. The free use which is made of a hospital pharmacopœia in which the dosage and combination of drugs are obscured under the title of "mistura" or "haustus" is dangerous. The student becomes so accustomed to the sounds of the words "mistura gentianæ alkalina" or "haustus albus" that he forgets the actual constituents of those preparations, and when asked to dictate similar prescriptions is frequently at a loss. We believe also, although we are quite prepared to have the opinion challenged, that the constant compounding of medicines in general practice according to the total quantities of drugs in a 6- or 8-ounce bottle tends to less accuracy than when the details of a single dose are set down, so that the exact quantity of each constituent taken by the patient at each dose is borne in mind. The "Retired Hospital Physician" also referred to the manufacture and sale of compound medicines, which certainly save "the busy practitioner from the laborious pain of thinking for himself," but it must be allowed that many of them are good preparations made up in a convenient and palatable form. In a very interesting article, the writer has omitted to state that the medical student has to pass fairly stringent examinations in pharmacy and materia medica, and this was not the case in every medical curriculum in mid-Victorian days.

A SEVENTEENTH CENTURY PIONEER OF ANTISEPTIC SURGERY.

THE Honourable W. R. Riddell, Justice in the King's Bench Division, High Court of Justice for Ontario, Canada, in the *New York Medical Journal* of March 2nd, under the title of "A Seventeenth Century Surgeon and His Fee," gives us the charge to the jury delivered at the Guildhall, London, on May 4th, 1687 (3 Jac. II.), by Sir Thomas Street, Knt., Justice of the Common Bench, in the case of Randall *v.* Sir Thomas Powis, Knt., a document in many respects of surpassing interest to the medical profession. The charge shows without doubt that antiseptic surgery, like so many other of our modern discoveries, was anticipated in the seventeenth century, not only in matters of practice, but also as regards the underlying hypothesis—now a demonstrable fact, thanks to Lister, whose merit is in no way encroached on by this anticipation. For, as we have so often said, it is he who compels the world's attention to, and acceptance of, a truth and enforces or renders possible its application, who confers on mankind that benefit which is the measure of merit. Sir Thomas Street's charge sets forth that the defendant, having been wounded in the arm, and being "suddenly dejected into extreme debility and danger ..... employed a surgeon who treated him in a manner recommended by his art and mystery with topical applications." But "the wound did not improve, and the defendant, despairing to find ease or benefit by the fruitless continuance of this chirurgery, and fearing the speedy invasion of a gangraene, consulted the plaintiff." Then follows this statement, remarkable indeed in the year 1687: "This new surgeon enjoined the immediate removal of all emplasters and other topical applications, and he washed the wound carefully from time to time with fair clean water, covered it with a clean soft linen cloth, and cleansed it once a day from pus and other impurities." We are further told that "the wound hath gotten well and the surgeon sues the Knight for his reward." After a discussion of the professional ethics which, while forbidding a physician to sue for his honoraria, permit surgeons, who "are of an inferior degree amongst the professors of the healing art," to "demand their fees as of right," and a learned disquisition on the treatment of wounds according to the orthodox surgery of the day, the remarkable prescience of the surgeon, Randall, is set forth as follows: "Now the plaintiff did naught save wash and tend the wound; he used no sympathetic powder or sympathetic unguent and he giveth his reason. ..... He saith that the pus which all others admire and desire as showing that Nature hath armed herself for the fight is not to be desired, but that it is itself an impurity which should be avoided—that it hindreth the cure and contendeth against the *vis medicatrix naturæ*. He hath even in his mind some crotchet that pus is engendered by some small animal or plant, some bug or gnat or beettle or fungus belike, though he saith openly that he cannot prove the existence of such creatures. This however he contendeth is

because his glasses do not magnify sufficiently to enable him to see them. And he meaneth not the glasses or spectacles for weak or aged eyes; but the microscope which hath a rare and admirable faculty of making small things appear large. ..... He saith forsooth that the true treatment is to keep all extraneous matter away from the wound and even the air which he imagineth to be full of his bugs and gnats and beetles." Moreover, Randall's views, even then, were apparently not unique, for the charge adds: "Yet he sayeth that his method of cure is well known to the profession, though that is denied by other surgeons." We regret to say that this pioneer confessor of antiseptic surgery lost his case. The summing-up was dead against him: "That is the question ye are to try, and if ye find that his mode of cure is acknowledged in his profession, ye will give him your verdict; and if otherwise, not. And it is naught that the Knight hath been cured. It may be that the powerful medicaments applied by his first attendant but succeeded in making their power felt after the plaintiff was consulted. Ye may indeed think that if the plaintiff is right in his contention that it was but the unassisted *vis medicatrix naturæ* which effected the cure, all the credit for the cure should be given to Dame Nature herself and the plaintiff deserveth none—having no credit, neither should he be given cash." Niemeyer and nihilistic therapy would evidently have had short shrift in 1687!

THE REPORTING OF VENEREAL DISEASES IN NEW YORK.

Mr. Ernest J. Lederle, Ph.D., Commissioner of Health of the City of New York, informs us that the Board of Health of that city has recently taken a bold, and it must be admitted a logical, step forward in the matter of bringing venereal diseases under administrative control. On Feb. 20th the board adopted, and the advisory board of the department, comprising a number of the most eminent medical men of the city, approved, resolutions "requiring" superintendents or other officers in charge of public institutions, such as hospitals, dispensaries, clinics, charitable and correctional institutions, including all institutions supported wholly or partly by voluntary contributions, to report promptly to the Department of Health the name, sex, age, address, nationality, race, and marital state of every patient under observation suffering from any stage of syphilis, chancroid, or gonorrhœal infection; and "requesting" private practitioners to furnish similar information (but excluding the name and address) with regard to their private patients so suffering. All information so obtained is to be regarded as confidential, not to be accessible to the public, and not a matter of public record. In return for the service the board will undertake on request to make without charge for medical men so reporting the Wassermann and Noguchi tests for the diagnosis of syphilis and to examine for spirochætæ specimens submitted to them. The possession by the sanitary authorities of information concerning all communicable diseases is an indispensable requisite to their administrative control and ultimate extermination. Venereal diseases are more disastrous in their consequences to the race, and are more dangerous to the community at large in proportion to their prevalence among the ignorant and those whose financial position prevents their taking adequate means of cure. Where the economic status is such that the sufferers depend for the subsistence of themselves and their dependents entirely on continued personal toil, they must in numberless ways assist in the spread of infection. The obvious conclusion is that the venereal diseases, more than any other kind of disease, call for notification and control in the interests of the community and the race. When, however, it is proposed to extend the sanitary regulations so as to include compulsory notification of this class of disease, the gravest difficulties present themselves. These arise almost entirely from the stigma of moral turpitude with which these diseases have long been associated in the public mind, thus entailing serious social and economic consequences on any breach of the confidential relations that properly exist between medical attendant and patient. On the other hand, it must be remembered that the injury caused by one case due to a breach of morality spreads in ever-widening circles involving innocent victims in every direction, who in their turn, and entirely without any fault of their own, may become unwitting and unwilling foci. Between those, then, who regard medicine almost exclusively from the point of view of a social science, and those who regard it as almost entirely a personal and confidential relation between doctor and patient, these diseases form, as it were, the last ditch, where compromise becomes no longer possible, and the battle must be fought out to the end. The difficulties of the problem are indubitable, and the working of the New York experiment will be watched with keen and sympathetic interest by public health authorities all the world over. It is greatly to be desired that some term should be substituted for the present ones, to which the idea of moral obliquity attaches; for those who are innocently suffering the consequences entailed by no moral lapse of their own may outnumber those in whom the disease is the result of their own personal misconduct. The stigma is the first block in the way of willing acceptance of administrative control; but the stigma, though now attaching to all, belongs properly to only some; therefore its removal would seem to be the first essential step towards obtaining that ready acquiescence in administrative control which alone can render it adequately effective in a civilised and free community.

ARE SOME OF THE UNCLASSIFIED FEVERS OF TROPICAL REGIONS RELATED TO YELLOW FEVER?

IN the Mexican province of Yucatan cases of unclassified fevers are sometimes observed by the local medical practitioners, and yellow fever is also not unfrequently present in the same region. Dr. Seidelin, whose name is well known as an investigator of this subject, has sought in Yucatan to discover in the blood of patients suffering from fever of undetermined origin the presence of parasites which might prove to be the cause of such illness. In an article entitled "Notes on Some Blood-parasites in Man and Mammals," which he contributes to the last published number of the *Annals of Tropical Medicine and Parasitology* (Vol. V., No. 4), he mentions that he had found in the blood of a man suffering from unclassified fever at Merida in 1910 certain bodies which he regards as parasites. They were fairly numerous on the fourth day of the fever, but scarce on the eighth day, and entirely absent on the ninth and tenth. They were not unlike the yellow fever bodies, which Dr. Seidelin has named paraplasma flavigenum, though differing from them in certain respects. The symptoms observed in the patient were not precisely those described in typical cases of yellow fever, though they were sufficient to arouse suspicion that the illness might be of that nature. It is known that the clinical characters of yellow fever may vary considerably in certain circumstances, and the clinical picture of the disease in one place may not always be the same in another locality. Dr. Seidelin suggests that yellow fever belongs to a group of fevers produced by blood-inhabiting parasites which may differ, though more or less intimately related to each other. Such differences might perhaps account for the variations in the clinical pictures of yellow fever in one and another

region; and this might also serve as an explanation of some at least of the puzzling points which have arisen in the epidemiology of the disease. Should this suggestion by Dr. Seidelin prove correct the illness of the patient mentioned above might be regarded as belonging to the yellow fever group, and its parasite as another species of the same genus as the yellow fever parasite—the paraplasma flavigenum. To this new species Dr. Seidelin proposes to give the name of paraplasma subflavigenum, and he has deposited a type specimen of it in the collection of the Liverpool School of Tropical Medicine. He had hoped to have met with other cases of the same kind, but he now publishes a summary of this single case, as it presents some points of special interest when considered in connexion with his previous observations respecting the etiology of yellow fever, to which it may be remembered we drew attention in THE LANCET of Jan. 20th. The question whether yellow fever is transmitted to man by one intermediary host alone, the stegomyia fasciata, and whether other members of the yellow fever group may have the same or other convectors, is not dealt with by Dr. Seidelin in his present paper. He has, however, already raised the point that yellow fever may have other transmitting agents than that generally recognised. It has been quite recently suggested also in another quarter that the passage of a parasite through the body of a different insect host than that in which its cycle of development commonly takes place may have the effect of altering or modifying the biological and pathological characters of the parasite and thus give rise to variation in the usual clinical manifestations of the resulting infection in man. To this question, no doubt, Dr. Seidelin and other competent investigators may direct their attention, and in time succeed in furnishing us with a satisfactory conclusion.

THE FEEBLE-MINDED INEBRIATE.

IN a lecture which he delivered recently at University College, Mr. David Heron, of the Francis Galton Eugenics Laboratory, discussed the results obtained by the biometric analysis of the cases dealt with in certified inebriate reformatories since the passing of the Inebriates Act of 1898. It was pointed out that mental defect of a more or less pronounced degree was present in a large majority of these so-called inebriates, that this defect was apparent usually when the individuals were admitted to the reformatories, and that there was only a very slight increase in its amount with age or duration of alcoholism. On the other hand, a very close relationship could be traced between mental defect and the level of education, a character which is largely pre-alcoholic. The inference to be drawn from these facts is obviously that in the cases discussed the mental defect to a very large extent preceded the inebriety. As regards the results of the reformatory treatment, the lecturer referred to the after-history of over 1800 persons committed under the Act, and showed that even within the very brief period that had elapsed after discharge nearly 80 per cent. had returned to their inebriate habits. The Inebriates Act up to the present has been applied mainly to women, and it is the most interesting and significant fact brought out in Mr. Heron's investigation that these women, two-thirds of whom are mentally defective, had not smaller but larger families than sound stocks. Thus it was found that 865 female inebriates had in all 2589 children, while the average completed family was nearly 8. As there is no reason to suppose that these mentally defective women differ in their characteristics from the general run of the feeble-minded, their very high fertility indicates the grave and urgent danger to the community which is involved in the unrestricted procreation of the mentally unfit. This is the most important lesson to be learned from Mr. Heron's very interesting lecture, and the lesson might, perhaps, have been conveyed with more force and clearness if the lecturer had presented his facts as bearing on the problem of feeble-mindedness to which they are really relevant, and had not given to his address the somewhat misleading title, "A Study of Extreme Alcoholism." It introduces needless confusion when a term, which is ordinarily used to mean prolonged and intense poisoning with alcohol, is employed to signify the fact of frequent sojourn in an inebriate reformatory. It is tolerably obvious that the two conditions, so far from being equivalent, are more likely to be mutually exclusive.

THE EIGHTH INTERNATIONAL CONGRESS OF APPLIED CHEMISTRY.

THE International Congress of Applied Chemistry meets this year in Washington, on Sept. 4th, and in New York, from Sept. 6th to 13th. The work of organisation is proceeding very rapidly, and the preliminary announcements which have reached us indicate a wealth of papers to be read possessing theoretical and practical importance in accordance with the object of the congress, which is the advancement of all applications of chemical science to practical life. The topics to be discussed cover a very wide field. There are over 20 sections, including subsections dealing with analytical chemistry; inorganic chemistry; metallurgy and mining explosives; silicate industries; organic chemistry; coal-tar colours and dye-stuffs; industry and chemistry of sugar; indiarubber and other plastics; fuels and asphaltes; fats, fatty oils, and soaps; paints, drying oils, and varnishes; starch, cellulose, and paper; fermentation; agricultural chemistry; hygiene; pharmaceutical chemistry; bromatology; physiological chemistry and pharmacology; photochemistry; electro-chemistry; physical chemistry; law and legislation affecting chemical industry; and political economy and conservation of natural resources. The programme is eloquent as to the rôle which chemistry is assuming in human affairs, and a position has been reached which shows that efficient training in technological science is rapidly becoming of the utmost importance.

DERMATO-MYOSITIS.

AN interesting case of this rare condition was recently reported by Dr. F. E. Batten[1] at the Neurological Section of the Royal Society of Medicine, the clinical details being supplemented by a full record of the pathological findings at the necropsy and by microscopical examination. The patient was a girl, aged 9 years, who had previously been an inmate of the Metropolitan Hospital under the care of Dr. W. Langdon Brown. When first seen she exhibited erythema of the face, scalp, and extensor surfaces of the limbs, the skin of these regions being swollen, hard, and inelastic, and scaling subsequently ensued. She gradually became stiff and unable to walk, exacerbations occurring in which the muscles were acutely swollen and the skin over them red. As the disease progressed the child emaciated considerably and the muscles generally diminished in size. Movement of nearly all the joints was limited, but the articulations themselves were not involved. Fluid withdrawn from a swollen area of muscle was sterile and showed no special cellular characteristics. There was no eosinophilia, and von Pirquet's and Wassermann's reactions were negative. The patient's temperature never rose above 100° F. except when infection of the urinary tract was present. This finally proved fatal, the child dying after an illness of 15 months. At the necropsy the skin appeared normal to

[1] F. H. Batten: Case of Dermato-myositis in a Child, Proceedings of the Royal Society of Medicine, vol. v., No. 4, Neurological Section, 1912, p. 103.

the naked eye, but it was unusually firm. The liver exhibited a peculiar condition, being studded with small circular, yellowish areas, which could be shelled out from the surrounding tissue. The largest were about ⅛ in. in diameter. Microscopically these were composed of fat. The skin in sections showed atrophy, the epidermis being reduced to a few layers and the papillæ absent in places. The subcutaneous fat was largely replaced by fibrous tissue, and the vessels of the corium were partially occluded, owing to fibrosis of their walls and hyaline change. The muscles showed atrophy of their fibres, especially in the peripheral bundles, and here and there lymphocytic infiltration was visible round the vessels. The nervous system was normal. The course of the affection and the pathological changes alike point to a chronic infective condition, the toxins acting on the skin and muscles principally. In spite of careful examination, however, no parasite was discovered in this instance. Dr. Batten suggests that inoculation of animals may advantageously be carried out in future cases of this disease and may prove more successful than simple culture experiments.

THE SEVENTH INTERNATIONAL CONGRESS ON TUBERCULOSIS.

AT 10 o'clock on Sunday morning, April 14th, there will be a solemn and imposing ceremony at the Capitol in Rome. Their Majesties the King and Queen of Italy will declare open the Seventh International Congress on Tuberculosis. On the previous evening there will be a reception of the members of the congress. Previously, however, to the assembly of the great Congress the International Association will hold a conference from April 11th to the 13th, the sittings taking place on the same premises as the forthcoming congress—namely, at the historic Castle of St. Angelo. Probably the International Committee of the Association of the Medical Press will meet here also, for the members are convoked for April 13th. The sittings of the sections of the actual Congress will commence at nine in the morning of Monday, April 15th. The sections will then be organised and formally opened; but during the four subsequent days will meet in the afternoon, leaving the mornings free. This is a wise arrangement, for it is quite certain that as there is so much to see at Rome the attendance will be very poor at some of the sections if the working hours are made too long. On Saturday, the 20th, the closing ceremony will be held also in the afternoon. The sight-seeing, for which time has been thus provided, will be the more assiduously pursued as the Minister of Public Instruction has graciously conceded to the members of the Congress the right of free entry to all the national monuments of the entire kingdom. This free entry is also accorded to the present International Exhibition of Hygiene, to the Retrospective Exhibition, the Archæological Exhibition, and the Victor Emanuel II. Monument. A committee formed by prominent members of Roman society is organising the reception of the members of the Congress to ensure their comfort and help them to see all they desire. In the Castel Sant' Angelo, where the Congress meets, there will be a post- and telegraph-office, and members can have their correspondence addressed by post to "Congresso Tuberculosi, Rome," or by telegraph to "Tuberculosis, Rome." At the bureau of the Congress the four official languages will be spoken. Numerous excursions to neighbouring places of interest are being organised, such as Tivoli, Subiaco, Ostia, Palestrina, Assisi, and Loretto. On arriving in Rome the members will find a bureau at the railway station to deal with lodgings. The hotels have been divided into five categories, the prices ranging from 15*s.* to 3*s.* 6*d.* daily. The Congress promises well, and to judge by the papers presented for reading in the three sections there should be some interesting discussions.

THE Church Missionary Society has lost within a few days of each other, from septicæmia, two members of its medical mission staff upon the North-West Frontier of India—Dr. Theodore Leighton Pennell, who received for his distinguished services the Kaisar-i-Hind gold medal in 1910, and Dr. William Henry Barnett.

Sir John William Moore, M.D. Dub., F.R.C.P. Irel., has been appointed one of the Honorary Physicians in Ordinary to His Majesty in Ireland, in the room of the late Sir Francis Richard Cruise.

TELEGRAPHISTS' CRAMP.

AN EXTRACT FROM THE REPORT OF THE DEPARTMENTAL COMMITTEE, GENERAL POST OFFICE, ON THE SUBJECT WITH ADDITIONAL MATTER [1]

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ASSISTANT PHYSICIAN, LONDON HOSPITAL;
AND
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SECOND MEDICAL OFFICER, GENERAL POST OFFICE.
(*The Medical Subcommittee.*)

PART I.

THE terms of reference to the Departmental Committee were: "To inquire into the prevalence and causes of the disease known as telegraphists' cramp, and to report what means may be adopted for its prevention."

Historical.

The earliest description of telegraphists' cramp as a specific disease was by M. Onimus [2] in Belgium in 1875. He gave a clear account of the symptoms and associated the complaint with the use of the Morse key. He says:—

> Cette affection ne serait pas très rare parmi les employés au télégraphe, surtout pour ceux qui se servent constamment du télégraphe Morse; ils la designent entre eux par l'expression de mal télégraphique.

M. Onimus recommended alternate duties upon the Hughes and Morse instruments as a preventive measure.

In August, 1882, Mr. Edmund Robinson,[3] surgeon to the Post Office at Leeds, read a paper before the British Medical Association upon four cases of telegraphists' cramp. The cases are clearly described, and it is noted that all were workers on the Morse instrument. Mr. Robinson points out the similarity of this complaint to the previously well-recognised cases of writers' cramp. In the same year (1882) a report was made on the subject of telegraphists' cramp by the chief medical officer of the General Post Office. Two years later Dr. Fulton,[4] who had been a telegraphist in the Edinburgh Post Office, described [5] the disease. Dr. Fulton appears to have had much experience of telegraphists' cramp, which, he stated, was probably more common than was generally supposed.

Isolated cases have been reported by observers in several countries, but in 1903 an extensive monograph on the "occupation neurosis of telegraphists" was published by Dr. E Cronbach.[6] He describes 17 cases which he had observed in Dr. Mendel's hospital in Berlin, and points out that only three of these were Morse workers, while 14 worked on the Hughes instrument. He shows clearly that there is a form of telegraphists' cramp due to continuous working on the Hughes instrument, and argues strongly that

[1] Permission for the publication of this article has been given by the Secretary, General Post Office.
[2] Gazette Médicale de Paris, 1875, p. 175.
[3] Brit. Med. Jour., 1882, Nov. 4th.
[4] T. W. Fulton, M.D., F.R.S.E., Scientific Superintendent of H.M. Fishery Board, Scotland, who has kindly given us permission to quote from his article.
[5] Edinburgh Clinical and Pathological Journal, 1884.
[6] Archiv für Psychiatrie, 1903, s. 243.

substitution of the Hughes instrument for the Morse would have no effect in preventing the occurrence of cramp among telegraphists.

Definition of Telegraphists' Cramp.

Craft neurosis, occupation spasm, trade palsy, are the various names given to indicate a group of functional disorders which are characterised by a difficulty in the performance of the specific coördinated movements of certain occupations. The occupations in which the affection occurs are, for the most part, complicated acts brought to perfection by education and practice. The form of occupation spasm most commonly met with is writers' cramp, but many other forms exist.

Any instrument which calls for repeated fine muscular movements of the same kind may involve a relative "occupation spasm" or "craft neurosis." We have associated the term telegraphists' cramp with the disease which brings about a difficulty in making the specific coördinated movements needed for a proper manipulation of the particular instrument known as the Morse key, but the manipulation of the Baudot or Hughes keyboards[7] may similarly bring about their relative cramp (analogous to pianists' cramp); and all these three cramps are on parallel lines with writers' cramp. The various members of the group can be distinguished from one another by the fact that the pain and spasm occur only during use of the particular instrument on which the disabled worker has been employed; and disability in the use of one instrument does not necessarily imply disability in the use of any other instrument. A few exceptions to this general rule have been found in advanced or long-standing cases. (See Case 3, to be recorded later.)

In its medical aspect, before any cramp or spasm is apparent, there may be a stage characterised by subjective symptoms only, when the operator feels pain or discomfort in the operating hand or arm. The pain is referred to various parts of the limb, but it is constant in its time of appearance—that is, it occurs when the operator begins to key or soon afterwards, before any muscular fatigue is possible; and this is the only circumstance which enables this pain to be distinguished from pain caused by fatigue. The operator's electrical reactions are normal, and his muscular and nervous condition, so far as can be ascertained, is normal in all respects; and his work does not suffer. There is no visible cramp or spasm; visible cramp or spasm may or may not develop; and although this condition cannot therefore properly be called telegraphists' cramp, we are of opinion that it marks an early stage of the disease.

The characteristic feature of the disease—implied by the term "cramp" itself—is an "involuntary violent and painful contraction of the muscles"[8]; and throughout the telegraph service such visible spasm is regarded as the mark of the disease; and telegraphists' cramp may be defined as a disease of the central nervous system characterised by visible spasm of hand and (or) arm during the manipulation of a telegraph instrument, and by impairment of the power of making the specific coördinated movements needed for such manipulation.

Methods of Investigation.

1. An examination was made of certain well-marked cases of telegraphists' cramp who appeared before the committee for the purpose of demonstrating the disorder. In all, 17 cases were examined, all of whom had been reported as cases of telegraphists' cramp.

In the majority of cases the symptoms came on without any definite exciting cause; but in several cases the onset was attributed to excess of Morse sending work—e.g., on press wires or specially heavy circuits. The length of service in those cases considered by us to be true telegraphists' cramp was long—28, 25, 22, 19, 19, 15, 12, 10, 7, 6 years—an average of 16 years.

A very important point which was elicited by our inquiry was the ability of the subjects of Morse cramp to perform other actions besides Morse manipulation and to use other instruments than the Morse. This, we found, did not depend on the total length of service, for operators who had developed cramp after many years' service on the Morse were found to be able to use the Hughes instrument; but in those cases where pain and stiffness and spasm had occurred and the operators had continued work for long periods while suffering from cramp, movements of the hands other than those used in Morse sending became affected, and the Hughes instrument could not be used.

Difficulty only in Sending on Morse Instrument.

Period of operating ...	22 years	28 years	12 years	10 years
Period of cramp	2 ,,	1 year	1 year	1 year

Difficulty in Morse Sending, and Other Actions of the Hands Affected so that Other Instruments could not be Used.

Period of operating ...	19 years	25 years	19 years	15 years
Period of cramp	10 ,,	15 ,,	6 ,,	9 ,,

This shows that where the operator brought his case to notice early he could be usefully employed at the Hughes, but when, in spite of disability, he persisted in doing the work, the spasm extended to other actions beyond the special one of Morse sending.

A most careful examination was made of six of these cases. The nervous system was completely investigated and was found to be normal. No muscular wasting and no alteration in the electrical reactions were found. No alteration in sensibility of the skin of the hands or of the deeper structures was discovered. Such a result points to the disorder being of a central origin and not to any failure in the muscles or in the sensori-motor peripheral mechanism. A full account of six cases will be given in Part III.

2. By order of the committee, a circular with a set of questions to which answers were invited was sent to each of the 8153 telegraphists employed either in the Central Telegraph Office or on the telegraph side of all provincial offices which have a separate telegraph staff. Answers were received from 7317 telegraphists. 836 forms were not returned, or returned without reply.

148 telegraphists in one division of the Central Telegraph Office, a division which represented a mean between those divisions where Morse working is predominant and those where little Morse working is done—both those who complained of difficulty in manipulation as well as those who did not, in fact all who were available—were then personally examined by ourselves. Their physical well-being was inquired into, the state of their arm muscles was examined, and their method of manipulation at the key was watched. A sentence was keyed, printed in Morse signals on slip, and examined. We were assisted in this part of the examination by officers with expert knowledge.

93 telegraphists complained of some difficulty in keying. 13 of these were found to be affected with the malady. Of these 13 cases, 7 showed definite spasm in the right hand, but in the remaining 6 the disease was in the early or subjective stage. In these latter cases, however, the diagnosis was made after full consideration of the statements of the operators and their physical condition. The average length of service of these 13 operators at the Morse key when disability first appeared is 15·6 years. It is to be particularly noted that of these 13 officers no one of them was disabled from performing his allotted duty. Moreover, some of them, though conscious of difficulty, yet had not thought that they had cramp. In all these cases the cramp had affected the right hand only; 5 of them worked quite comfortably with the left and 5 used the left hand occasionally to relieve the right, but all were able to perform their work to the satisfaction of the supervising officers. In none of these cases were there any local abnormalities, the muscles were healthy and well developed, and there was no loss of power or sensation in the arm or hand.

The written replies showed that over one-third of the staff professed to feel more or less difficulty in manipulation, but it is necessary to emphasise the fact that in most cases the difficulty was slight, of a temporary character, and attributable to muscular fatigue alone.

The whole of the cases where the replies received and personal examination made indicated that the difficulty was apparently due to cramp (417 in all) were those of operators on the Morse key. In the cable room of the Central Telegraph Office replies were received from 105 telegraphists, and though some complaints of fatigue were made, we considered that in the cable room, where the Hughes and Baudot instruments are mainly used, true cramp was absent. Hughes and Baudot instruments are little used except in the cable room,

[7] Other telegraph instruments described on p. 69 of the report.
[8] Sir J. A. H. Murray's New English Dictionary.

whilst the Baudot instrument has only been introduced within the last few years.

The above result seems to show that in England the malady is chiefly associated with prolonged sending with the Morse key. This is no doubt due, in some measure, to the fact that the Morse key is the prevailing instrument. Partly, as will be shown, it is due to the fact that its use necessitates monotonous and unvarying movements. In Germany, where the use of the Hughes instrument is more prevalent, Cronbach has described several cases of cramp in workers on the Hughes instrument.

The following table shows the length of service in years when difficulty was first experienced at the Morse key. Of the 417 cases, only 243 answered the question dealing with this point; it is possible, had replies been received from all, that the incidence of the malady as regards service would have been different, but the available statistics show the following results:—

Years' service.	Male.	Female.	Years' service.	Male.	Female.
1- 5	22	20	16-20	51	5
6-10	39	23	21-25	23	1
11-15	42	8	26-30	5	—

It will be noticed that in the case of the female staff the malady is more apparent at an earlier period of service, and as the result of our investigations we find that the affection may seize upon the young telegraphist or on one who has had comparatively little manipulation to perform.

Ambidexterity.—Thirty-nine officers were ambidextrous before developing cramp, 259 acquired ambidexterity after developing cramp, 117 were not ambidextrous, and 2 did not reply.

Disability arising from the use of the pen.—In our examination of the 7317 replies we did not find any instance of writers' cramp, though we noticed several cases of fatigue and consequent interference with easy penmanship.

(To be continued.

Public Health.

REPORTS OF SCHOOL MEDICAL OFFICERS.

County Borough of West Bromwich.—Mr. R. Woolsey Stocks's report for 1911 calls attention to the problem of "dull children," who approach 10 per cent. of the children examined and who are at least two standards below the average. Mr. Stocks is convinced that the large proportion of these children could be taught industrial subjects with comparative ease, especially as the teaching necessitates a much more individual method of instruction than is obtainable in the ordinary class work. In contradistinction to the decrease noticed in many districts the number of children harbouring body lice was found to be distinctly above that of previous years. The report also calls attention to a very serious defect—the all too frequent absence of any form of underclothing in girls. The medical officer attends on Saturday mornings at the education office to receive reports from the attendance officers and to examine any children specially reported to him by the committee. During the year 148 cases were examined; of these, 15 children were found to be able to attend school, and an order was made to this effect. As no special facilities for the teaching of mentally deficient children exist, only four of the seven discovered were excluded. The report calls attention to the need for provision of a dental clinic in view of the large number of cases needing treatment and the lack of means for this treatment. Only two cases of ringworm were noted out of a total of over 1000 children examined.

Counties of Fife and Kinross.—The very full statistics given in Dr. J. R. Currie's report for 1910–11 make it specially interesting. Among the children examined there were 253 cases of otorrhœa and 382 of abnormalities of the heart and circulation, but only 27 examples of phthisis, this representing a percentage incidence of 0·1 on the total children examined. It is suggested that the disease may be somewhat more prevalent among children than the literal interpretation would indicate, not because cases are missed in the course of inspection, but because phthisical children rapidly become too ill to appear in school at all. Despite these facts, however, it is undoubtedly true that the percentage incidence of phthisis among school children is much lower than is often imagined. Of tuberculosis other than phthisis, 50 cases were noted, 31 being gland cases, 6 examples of hip disease, 2 of spinal caries, and 5 of other tuberculosis. In this connexion the value of medical inspection comes out strikingly in the following extract from Dr. A. F. McBean's report on the Fourth Inspectoral Area:—

> One case was examined last year on request of the parent. She had been noticed to limp slightly. I made full examination and measurements, the mother, who was present, wishing it. I made diagnosis of hip-joint disease and advised the mother to get their own doctor to attend to the case. This was done and the child put under treatment. I saw her at another school this year, after 14 months, and was glad to see her looking very much stronger and without trace of a limp. Her mother stated the girl was in excellent health now.

One case of tongue-tie is recorded, and in view of the opinion of some authorities who regard this condition as mythical it would be interesting to have details which are not given. Pigeon-chest was found in 18 children, curvature of the spine in 8, and web-fingers in 2; there were only 13 cases of ringworm, but 237 of anæmia. Of the children examined, 75·3 per cent. were well nourished, 23·3 per cent. ill-nourished, and 1·4 per cent. emaciated. The percentage relations for boys and girls were found to be almost identical. The total percentage for defective nutrition was given as 24·7 per cent. The causes of malnutrition are held to be injudicious rather than inadequate feeding, depending largely on the obsolescence of the art of cookery. Very encouraging results are recorded with regard to the improvement in the cleanliness of children's heads, one example in the heart of the mining district being recorded where there was not a single verminous head among 400 children. It would undoubtedly be easier for the spread of these vermin to be guarded against if the cloak-room accommodation in schools were more ample, so that the children's clothing, and particularly hats and caps, could be kept separately. The treatment provided after medical inspection does not appear to have been very satisfactory, and intimations calling on parents to deal with carious teeth were only sent out in special circumstances, because it was recognised that proper dental treatment was in most cases unattainable. Only a little more than half the children found defective appear to have obtained any kind of treatment. The impediments to treatment are considered at more length under the headings of indifference, ignorance, and cost. It is unfortunate, however, that statistics are not given with regard to the number of cases to which these different factors apply. Some interesting figures are given with regard to employment after school-age, and it is pointed out that it is particularly necessary for children who are destined for factory work that they should be medically inspected and their defects pointed out to their parents. Of 6500 certificates issued by certifying factory surgeons in 1910 to which qualifying conditions were attached, 1160 related to defective vision, 884 to nits and vermin, and 805 to carious teeth, some sufferers being forbidden to work in company with other persons, the majority being excluded entirely unless their defects were cured. The above categories are particularly those which figure conspicuously in school medical officers' returns and relate to ailments which can be remedied during school life. On the question of the cause of failure in the treatment of eye and teeth defects, it is said that the fee of the expert is too large to be paid by the parents of children attending elementary schools, and the report urges strongly the establishment of school clinics at which children might receive treatment for such conditions as do not come within the scope of ordinary medical practice. But in Scotland at the present time no power exists to establish school clinics, the field being therefore open for private enterprise or for legislation. The number of parents present at examinations seems to have been rather low: in one inspectoral area only 13 per cent. of the parents attended; in others 11 per cent. and 6·5 per cent. It is noted that many children were overburdened with clothing.

School Board of Glasgow.—Dr. Ernest T. Roberts's report is the first annual report and covers the year ending June 30th, 1910. The staff consists of 1 full-time officer, 1 half-time officer, and 20 quarter-time medical officers. There are in addition 7 school nurses. The school service is thus very similar to that in existence in London. During

the year 9511 notifications of defects were made to parents, and where a re-examination was made it was found that 23·7 per cent. were cured and 30·2 per cent. improved, the remainder being still under observation. An examination clinic has been established since October, 1909, where special cases are dealt with on Saturday mornings and other times when necessary. The work has greatly increased, and at the present time Tuesday afternoon and Thursday and Saturday mornings are set apart for this purpose. Children who are unable to attend at the office are also visited at their own homes and others seen at the schools. Mentally deficient children who are badly nourished or the subjects of rickets have been given emulsion of cod-liver oil with hypophosphites, and the medical officer suggests that this may tend to expedite the return to the schools of the children whose defect is not permanent. Three schools are now fitted with shower baths, and the medical officer urges that as soon as possible these should be installed in all schools situated in the poorer parts of the city. Baths were at the date of the report in process of installation in two other schools. A very interesting table is given showing the percentage of children from 1 to 5 years attacked by and surviving measles, whooping-cough, chicken-pox, and diphtheria. There is a useful section of the report on the medical inspection of deficient children by Dr. Robert Bruce. There are in Glasgow 11 centres with special facilities for receiving, feeding, and educating these children, which are placed throughout the city so as to meet the requirements of the populous districts. The dietary table of dinners is given, and might well form the basis for school menus for necessitous children who are not physically defective. Cod-liver oil and hypophosphites, already mentioned, are given after the dinner. Mr. John Carswell reports on the mentally deficient children of whom there were 825 in 1910. The method in vogue in Glasgow is to group these cases in special probationary classes for one year before they are definitely classed as mentally deficient. The marked preponderance of male children over female has been noted, but this does not appear in the case of Roman Catholics; no explanation of this fact is given. It is pointed out that the mental defects which render the children incapable of receiving proper benefit from instruction in the elementary schools may be limited to letter or word blindness, or to delayed development of the speech centre in the brain, or to a condition of mental bewilderment caused by bad physical conditions, none of which need entail permanent deficiency. Mr. Carswell states that his experience leads him to believe that there are two distinct periods when mental deficiency shows itself—first, between the ages of 5 and 7; and second, when the third or fourth standard is reached. It is from among boys and girls who have got on tolerably well up to the third or fourth standard, but who get no further, that criminal youths and other troublesome persons are largely recruited. The mentally deficient adult, whose mentally defective powers show in early school life, is usually a docile and easily managed person, but the boy whose mental incapacity does not emerge till the affective life becomes active enters upon adult life with a poor equipment of education and uncontrolled impulse and readily becomes the prey to the temptations of the street. It is suggested that children who cease to make progress after reaching the third or fourth standard, even though the failure may be attributed to some cause, such as absence by truancy or otherwise, should be admitted for special examination. Glasgow is fortunate in having special classes for the semi-deaf and the semi-mute, and it is suggested that good use might be made of the years between two and six in teaching children to speak either by admission to special schools for very young deaf children or by visits of an articulation teacher to the homes once a week or once a fortnight to explain to the mother the needs of the child and to give half an hour's lesson in the presence of the mother. The report for 1911 has now been issued.

County of Berkshire.—The report of the school medical officer for 1911 presents statistics of inspections extending over three years and dealing with between 17,000 and 18,000 children. It was found that in the country districts where the schools are very small the strict adherence to the requirements of the Board of Education necessitated considerable waste of the medical officer's time, for if the children who came within the age groups only were examined, there were not enough to occupy the time, while the schools were too far apart for more than one to be done in a day. The detail of inspections has therefore varied in accordance with whether the school population was over or under 75. The parents of 75·1 per cent. of children inspected in 1911 attended the examinations, as compared with 77·5 in the two previous years and 78·9 in 1908. The figures for cleanliness are practically the same as those of the previous years, but there has been a progressive improvement since medical inspection, as may be noted by the proportion in 1908. In this latter year 22 per cent. had pediculi or nits in the hair; in 1909, 16·5 per cent; in 1910, 14·26 per cent.; and in 1911, 13·16 per cent. In 1908 over 9 per cent. are noted as having defective nutrition; 7·2 per cent. in 1909; 7·4 per cent. in 1910; and 3·62 per cent. in 1911. It would be interesting to know to what this sudden drop is attributed, as no indication is given in the report, and it does not appear probable that the change can be the result of the medical inspection. It suggests the employment of a new standard or a new medical officer. In a special report by Dr. C. L. Lakin the children from the poorer homes are contrasted with children of the better homes, and it is shown that in the poorer children entrance to school is associated with quickening in growth, whereas in the case of better-off children entrance to school life is associated with a slight retardation of growth. A table of indices of nutrition is given which is computed by expressing the relation of stature to weight by the number of grammes corresponding to each centimetre of stature. Children in the poorer schools weigh 170 grammes per centimetre of stature, children in the better schools weigh 187 grammes. On reviewing the points mentioned Dr. Lakin concludes that if the home circumstances could be improved the physique of the elementary school children would be coincidently raised.

VITAL STATISTICS.

HEALTH OF ENGLISH TOWNS.

IN the 94 largest English towns having an estimated population of 17,559,219 persons in the middle of this year, 8593 births and 4756 deaths were registered during the week ending March 23rd. The annual rate of mortality in these towns, which had been 15·4, 14·4, and 14·6 per 1000 in the three preceding weeks, declined to 14·1 per 1000 in the week under notice. During the first 12 weeks of the current quarter the mean annual death-rate in these large towns averaged 16·3 per 1000, while in London during the same period the average annual death-rate did not exceed 15·4 per 1000. The annual death-rates last week in the several towns ranged from 4·9 in Walthamstow, 5·7 in Croydon, 5·8 in Gillingham, 6·9 in Ilford, and 7·2 in Ealing, to 20·3 in Great Yarmouth, 22·6 in Salford, 23·3 in Dewsbury, 24·2 in Warrington, and 24·6 in Wolverhampton.

The 4756 deaths from all causes were 174 fewer than the number in the previous week, and included 425 which were referred to the principal epidemic diseases, against 378 and 434 in the two preceding weeks. These 425 deaths from the principal epidemic diseases included 155 from whooping-cough, 138 from measles, 69 from infantile diarrhœal diseases, 35 from diphtheria, 17 from scarlet fever, and 11 from enteric fever, but not one from small-pox. The mean annual death-rate from these diseases last week was equal to 1·3 per 1000, against 1·1 and 1·3 in the two preceding weeks. The deaths attributed to whooping-cough, which had been 142, 136, and 159 in the three preceding weeks, slightly fell to 155 last week, and caused the highest annual death-rates of 1·6 in Barrow-in-Furness, 1·8 in Great Yarmouth and in Bury, 2·0 in Salford, 2·5 in Merthyr Tydfil, and 3·3 in Rhondda. The deaths referred to measles, which had been 109, 101, and 137 in the three preceding weeks, were 138 last week; the highest annual death-rates from this disease were 1·8 in Oldham, 2·0 in Cardiff, 2·4 in Portsmouth, 3·8 in Salford, and 5·7 in Warrington. The fatal cases of diarrhœa among infants under 2 years of age, which had steadily increased from 39 to 56 in the four preceding weeks, further rose to 69 last week, and included 21 in London and its suburban districts, 8 in Liverpool, 4 in Manchester, 4 in Sheffield, and 4 in Rhondda. The deaths attributed to diphtheria, which had been 53, 49, and 55 in the three preceding weeks, declined to 35 last week; 10 deaths were recorded in London, 3 in Portsmouth, 2 in Sheffield, and 2 in Rhondda. The deaths referred to

scarlet fever, which had been 21, 25, and 13 in the three previous weeks, were 17 last week, of which 4 were registered in Birmingham, 3 in Sheffield, and 2 in Nottingham. The fatal cases of enteric fever, which had been 14 in each of the two preceding weeks, declined to 11 last week, and included 2 in Warrington, 2 in Sheffield, and 2 in Cardiff.

The number of scarlet fever patients under treatment in the Metropolitan Asylums and in the London Fever Hospital, which had been 1392, 1357, and 1384 at the end of the three preceding weeks, had declined to 1368 on Saturday last; 137 new cases of this disease were admitted to these hospitals during the week, against 160, 161, and 152 in the three preceding weeks. These hospitals also contained on Saturday last 1073 cases of diphtheria, 542 of whooping-cough, 210 of measles, and 59 of enteric fever, but not one of small-pox. The 1168 deaths from all causes recorded in London were 63 in excess of the number in the previous week, and were equal to an annual death-rate of 13·5 per 1000. The deaths referred to diseases of the respiratory system, which had steadily declined from 545 to 224 during the six preceding weeks, rose to 246 last week, but were 49 below the number recorded in the corresponding week of last year.

Of the 4756 deaths from all causes in the 94 large towns, 164 resulted from different forms of violence, and 368 were the subject of coroners' inquests. The causes of 33, or 0 7 per cent., of the deaths registered last week were not certified either by a registered medical practitioner or by a coroner after inquest. All the causes of death were duly certified in Manchester, Sheffield, Leeds, Bristol, West Ham, Bradford, Hull, Newcastle-on-Tyne, Nottingham, and in no fewer than 71 other smaller towns. The 33 uncertified causes of death last week included 8 in Birmingham, 7 in Liverpool, 5 in Gateshead, and 3 in Sunderland.

HEALTH OF SCOTCH TOWNS.

In the 18 largest Scotch towns, having an estimated population of 2,182,400 persons in the middle of this year, 1232 births and 726 deaths were registered during the week ending March 23rd. The annual rate of mortality in these towns, which had declined from 18·7 to 15·4 per 1000 in the three preceding weeks, rose to 17·4 per 1000 in the week under notice. During the first 12 weeks of the current quarter the mean annual rate of mortality in these towns averaged 18 5 per 1000, and was 2·2 per 1000 above the mean rate recorded during the same period in the 94 large English towns. The annual death-rates in the several Scotch towns last week ranged from 5·3 in Partick, 10 3 in Kirkcaldy, and 11·3 in Motherwell, to 20·5 in Dundee, 24 0 in Greenock, and 25·5 in Kilmarnock.

The 726 deaths from all causes were 83 in excess of the number in the previous week, and included 95 which were referred to the principal epidemic diseases, against 76 and 80 in the two preceding weeks. Of these 95 deaths, 50 resulted from measles, 16 from infantile diarrhœal diseases, 13 from whooping-cough, 9 from diphtheria, 5 from scarlet fever, and 2 from enteric fever, but not one from small-pox. These 95 deaths from the principal epidemic diseases were equal to an annual death-rate of 2·3 per 1000, or 1·0 per 1000 above that recorded in the 94 large English towns. The deaths attributed to measles, which had been 56, 39, and 47 in the three preceding weeks, rose to 50 last week, and included 22 in Glasgow, 9 in Edinburgh, 4 in Greenock, 3 in Leith, and 3 in Kilmarnock. The deaths of infants under 2 years of age referred to diarrhœal diseases, which had been 8 in each of the two preceding weeks, rose to 16 last week; 4 deaths were registered in Glasgow and 4 in Dundee. The fatal cases of whooping-cough, which had steadily declined from 18 to 6 in the four preceding weeks, rose to 13 last week, of which 6 occurred in Glasgow and 3 in Dundee. The deaths attributed to diphtheria, which had declined from 22 to 8 in the four preceding weeks, were 9 last week, and included 4 in Glasgow. The deaths referred to scarlet fever, which had been 10 and 7 in the two previous weeks, further declined to 5 last week, of which number 3 were registered in Greenock. The 2 fatal cases of enteric fever occurred in Glasgow.

The deaths referred to diseases of the respiratory system, which had continuously declined from 220 to 98 in the six preceding weeks, rose to 107 last week, and 18 deaths were attributed to different forms of violence.

HEALTH OF IRISH TOWNS.

In the 22 town districts of Ireland, having an estimated population of 1,157,014 persons in the middle of this year, 633 births and 549 deaths were registered during the week ending March 16th. The annual rate of mortality in these towns, which had been 22·1 and 23 1 per 1000 in the two preceding weeks, further rose to 24·7 per 1000 in the week under notice. During the first eleven weeks of the current quarter the mean annual death-rate in these Irish towns averaged 23 6 per 1000; in the 94 large English towns the mean annual death-rate during the same period did not exceed 16 5 per 1000, while in the 18 Scotch towns it was equal to 18·6 per 1000. The annual death-rates in the several Irish towns during the week were equal to 31 8 in Dublin (against 12 7 in London), 19 6 in Belfast, 27·9 in Cork, 20·4 in Londonderry, 14·9 in Limerick, and 20·9 in Waterford; in the remaining 16 of these Irish towns the mean annual death-rate amounted to 22·2 per 1000.

The 549 deaths from all causes in the 22 Irish towns were 37 in excess of the number in the previous week, and included 40 which were referred to the principal epidemic diseases, against numbers increasing from 27 to 41 in the three preceding weeks; of these 40 deaths, 16 resulted from whooping-cough, 8 from infantile diarrhœal diseases, 7 from measles, 5 from diphtheria, 3 from enteric fever, and 1 from scarlet fever, but not one from small-pox. These 40 deaths from the principal epidemic diseases were equal to an annual death-rate of 1·8 per 1000; the death-rate from these diseases in the same week did not exceed 1·3 per 1000 in the 94 large English towns, while in the 18 Scotch towns it was equal to 1 9. The deaths attributed to whooping-cough, which had been 14, 16, and 13 in the three preceding weeks, numbered 16 in the week under notice, and included 10 in Dublin and 4 in Belfast. The deaths of infants under two years of age from diarrhœal diseases, which had increased from 5 to 13 in the three preceding weeks, declined to 8, and comprised 4 in Dublin, 3 in Belfast, and 1 in Londonderry. The 7 fatal cases of measles were 3 in excess of the average in the three preceding weeks, and were all registered in Dublin; the 5 deaths from diphtheria and the 3 fatal cases of enteric fever were also recorded in Dublin, and that of scarlet fever in Belfast.

The deaths referred to diseases of the respiratory system, which had declined from 239 to 135 in the five preceding weeks, rose to 148 in the week under notice. Of the 549 deaths from all causes in the 22 Irish towns, 151, or 28 per cent., occurred in public institutions, and 9 resulted from different forms of violence. The causes of 21, or 3 8 per cent., of the total deaths were not certified either by a registered medical practitioner or by a coroner after inquest; in the 94 large English towns the proportion of uncertified causes of death did not exceed 0·8 per cent.

VITAL STATISTICS OF LONDON DURING FEBRUARY, 1912.

IN the accompanying table will be found summarised complete statistics relating to sickness and mortality in the City of London and in each of the metropolitan boroughs. With regard to the notified cases of infectious diseases, it appears that the number of persons reported to be suffering from one or other of the ten diseases specified in the table was equal to an annual rate of 5·3 per 1000 of the population, estimated at 4,519,754 persons in the middle of the year. In the three preceding months the rates were 7·8, 6·3, and 5·3 per 1000 respectively. The lowest rates last month were recorded in the City of Westminster, Stoke Newington, Islington, Holborn, and the City of London; and the highest rates in Bermondsey, Deptford, Greenwich, Lewisham, and Woolwich. The prevalence of scarlet fever showed but little variation from that recorded in the preceding month; this disease was proportionally most prevalent in Fulham, St. Marylebone, Battersea, Deptford, Greenwich, Lewisham, and Woolwich. The number of scarlet fever patients under treatment in the Metropolitan Asylums Hospitals,

ANALYSIS OF SICKNESS AND MORTALITY STATISTICS IN LONDON DURING FEBRUARY, 1912.

(Specially compiled for THE LANCET.)

CITIES AND BOROUGHS.	Estimated population in the middle of 1912.	NOTIFIED CASES OF INFECTIOUS DISEASE.												DEATHS FROM PRINCIPAL INFECTIOUS DISEASES.‡										
		Small-pox.	Scarlet fever.	Diphtheria.*	Typhus fever.	Enteric fever.	Other continued fevers.	Puerperal fever.	Erysipelas.	Cerebro-spinal meningitis.	Poliomyelitis.	Total.	Annual rate per 1000 persons living.	Small-pox.	Measles.	Scarlet fever.	Diphtheria.*	Whooping-cough.	Enteric fever.	Diarrhœa and enteritis (under 2 years).	Total.	Annual rate per 1000 persons living.	Deaths from all causes.	Death-rate per 1000 living.†
LONDON	4,519,754	—	727	622	—	83	1	43	358	12	3	1849	5·3	—	60	6	37	98	9	58	268	0·8	5889	17·9
West Districts.																								
Paddington	142,362	—	16	32	—	2	—	3	13	1	—	67	6·1	—	2	—	1	1	—	2	6	0·5	165	16·1
Kensington	171,746	—	24	26	—	—	—	—	5	—	—	55	4·2	—	—	—	1	3	—	1	5	0·4	213	17·5
Hammersmith	122,750	—	15	20	—	1	—	—	9	—	—	45	4·8	—	—	—	2	—	—	1	3	0·3	170	18·8
Fulham	155,402	—	36	24	—	2	—	—	9	1	—	72	6·0	—	3	—	2	4	2	2	13	1·1	216	18·9
Chelsea	65,397	—	9	9	—	—	—	2	4	—	—	24	4·8	—	—	—	—	1	—	—	1	0·2	93	19·2
City of Westminster	157,248	—	14	13	—	—	—	6	7	1	—	41	3·4	—	—	—	—	2	—	2	4	0·3	187	17·4
North Districts.																								
St. Marylebone	116,155	—	27	10	—	2	—	1	19	—	—	59	6·6	—	—	1	—	2	—	2	5	0·6	161	19·3
Hampstead	85,966	—	12	17	—	2	—	—	6	—	—	37	5·6	—	2	—	2	1	—	—	5	0·8	100	17·1
St. Pancras	216,145	—	29	33	—	1	—	3	18	1	—	85	5·1	—	—	1	3	6	—	1	11	0·7	292	18·4
Islington	326,398	—	39	41	—	2	—	1	16	1	—	100	4·0	—	8	—	2	4	—	2	16	0·6	419	17·4
Stoke Newington	50,581	—	4	6	—	—	—	1	3	—	—	14	3·6	—	—	—	—	1	—	—	1	0·3	64	17·2
Hackney	222,986	—	38	24	—	2	—	7	27	1	1	100	5·8	—	—	1	—	2	—	4	7	0·4	248	15·1
Central Districts.																								
Holborn	48,026	—	3	2	—	—	—	—	2	—	—	7	1·9	—	—	—	—	1	—	—	1	0·3	86	25·1
Finsbury	86,130	—	13	17	—	—	—	1	10	—	—	41	6·2	—	1	1	—	2	—	3	7	1·1	155	24·3
City of London	18,695	—	1	1	—	1	—	—	—	—	—	3	2·1	—	—	—	—	—	—	—	—	—	20	15·3
East Districts.																								
Shoreditch	110,430	—	12	15	—	—	—	—	12	—	—	39	4·6	—	—	—	4	2	—	3	9	1·1	163	20·1
Bethnal Green	127,985	—	14	19	—	3	—	—	14	1	—	51	5·2	—	1	—	3	3	—	1	8	0·8	184	18·9
Stepney	277,315	—	26	26	—	7	—	2	26	3	—	90	4·2	—	—	—	3	13	1	8	25	1·2	379	18·6
Poplar	161,597	—	20	17	—	2	—	—	12	—	—	51	4·1	—	1	—	1	17	—	1	20	1·6	234	19·5
South Districts.																								
Southwark	190,017	—	20	14	—	8	—	3	16	—	—	61	4·2	—	8	—	3	8	1	2	22	1·5	307	22·0
Bermondsey	125,260	—	14	32	—	9	—	2	16	—	—	73	7·6	—	3	—	—	4	2	2	11	1·1	211	22·5
Lambeth	297,550	—	52	34	—	14	—	3	22	1	—	126	5·5	—	10	—	2	3	2	4	21	0·9	353	16·0
Battersea	167,589	—	38	13	—	3	—	—	7	—	—	61	4·7	—	2	1	—	—	—	4	7	0·5	182	15·2
Wandsworth	321,881	—	69	35	—	10	—	4	14	—	1	133	5·4	—	2	1	1	8	—	4	16	0·6	345	14·8
Camberwell	261,591	—	41	30	—	6	1	2	19	1	—	100	5·0	—	10	—	2	5	1	2	20	1·0	369	19·1
Deptford	109,377	—	36	18	—	1	—	—	21	—	—	76	9·1	—	1	—	2	—	—	2	5	0·6	152	19·0
Greenwich	95,994	—	29	30	—	1	—	—	14	—	1	75	10·2	—	5	—	1	—	—	1	7	1·0	113	15·6
Lewisham	165,249	—	41	40	—	3	—	2	8	—	—	94	7·4	—	—	—	1	1	—	2	4	0·3	168	13·9
Woolwich	121,932	—	35	24	—	1	—	—	9	—	—	69	7·4	—	1	—	1	4	—	2	8	0·9	140	16·0
Port of London	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

* Including membranous croup. † The death-rates are corrected for variations in sex- and age-constitution of the populations of the several boroughs, the population of England and Wales being taken as the standard. ‡ Deaths from "typhus fever" and "other continued fevers" are not now distinguished in the Registrar-General's weekly returns; these two columns are therefore omitted from the Table.

which had been 2103, 1878, and 1473 at the end of the three preceding months, had further declined to 1375 at the end of last month; the weekly admissions averaged 166, against 198 and 165 in the two preceding months. Diphtheria was slightly more prevalent than it had been in the preceding month; among the several metropolitan boroughs the greatest proportional prevalence of this disease was recorded in Paddington, Hampstead, Finsbury, Bermondsey, Greenwich, and Lewisham. The Metropolitan Asylums Hospitals contained 1129 diphtheria patients at the end of last month, against 1327, 1294, and 1191 at the end of the three preceding months; the weekly admissions averaged 137, against 168, 180, and 134 in the three preceding months. The prevalence of enteric fever also showed a slight increase last month; this disease was proportionally most prevalent in Hampstead, Bethnal Green, Stepney, Southwark, Bermondsey, Lambeth, and Wandsworth. There were 64 enteric fever patients under treatment in the Metropolitan Asylums Hospitals at the end of last month, against 85, 76, and 49 at the end of the three preceding months; the weekly admissions averaged 10, against 9 and 8 in the two preceding months. Erysipelas was proportionally most prevalent in St. Marylebone, Hackney, Finsbury, Shoreditch, Bethnal Green, Bermondsey, Deptford, and Greenwich. The 43 cases of puerperal fever notified during the month included 7 in Hackney, 6 in the City of Westminster, 4 in Wandsworth, and 3 each in Paddington, St. Pancras, Southwark, and Lambeth The 12 cases of cerebro-spinal meningitis included 3 in Stepney; and the 3 cases of poliomyelitis belonged respectively to Hackney, Wandsworth, and Greenwich.

The mortality statistics in the table relate to the deaths of persons actually belonging to the several boroughs, the deaths occurring in institutions having been distributed among the boroughs in which the deceased persons had previously resided; the death-rates from all causes are further corrected for variations in the sex- and age-constitution of the populations of the several boroughs. During the four weeks ending March 2nd the deaths of 5889 London residents were registered, equal to an annual rate of 17·9 per 1000 of the population; in the three preceding months the rates had been 14·1, 16·1, and 16·3 per 1000. The death-rates last month ranged from 13·9 in Lewisham, 14·8 in Wandsworth, 15·1 in Hackney, 15·2 in Battersea, 15·3 in the City of London, and 15·6 in Greenwich, to 20·1 in Shoreditch, 22·0 in Southwark, 22·5 in Bermondsey, 24·3 in Finsbury, and 25·1 in Holborn. The 5889 deaths from all causes included 268 which were referred to the principal infectious diseases; of these, 60 resulted from measles, 6 from scarlet fever, 37 from diphtheria, 98 from whooping-cough, 9 from enteric fever, and 58 from diarrhœa and enteritis among children under 2 years of age. No death from any of these diseases was recorded last month in the City of London; among the metropolitan boroughs they caused the lowest death-rates in Hammersmith, Chelsea, the City of Westminster, Stoke Newington, Holborn, and Lewisham, and the highest rates in Fulham, Finsbury, Shoreditch, Stepney, Poplar, Southwark, and Bermondsey. The 60 deaths from measles showed a decline of 160 from the corrected average number in the corresponding period of the five preceding years; this disease was proportionally most fatal last month in Southwark, Lambeth, Camberwell, and Greenwich. The 6 fatal cases of scarlet fever were 23 fewer than the corrected average number, and belonged respectively to St. Marylebone, St. Pancras, Hackney, Finsbury, Battersea, and Wandsworth. The 37 deaths from diphtheria were 22 below the corrected average number, and included 4 in Shoreditch and 3 each in St. Pancras, Bethnal Green, Stepney, and Southwark. The 98 fatal cases of whooping-cough showed a decline of 61 from the corrected average number; this disease was proportionally most fatal in Stepney, Poplar, Southwark, Bermondsey, and Woolwich. The 9 deaths from enteric fever were 1 less than the corrected average number; of these 9 deaths, 2 belonged to Fulham, 2 to Bermondsey, and 2 to Lambeth. The mortality from diarrhœa and enteritis among children under two years of age was proportionally greatest in Finsbury, Shoreditch, Stepney, and Battersea. In conclusion, it may be stated that the aggregate mortality in London last month from the principal infectious diseases (excluding diarrhœa) was 53 9 per cent. below the average.

THE SERVICES.

ROYAL NAVY MEDICAL SERVICE.

THE following appointments have been notified:—Fleet-Surgeons: E. C. Cridland, to the *Irresistible*, on recommissioning, and to the *Monarch*, on commissioning; and H. H. Gill, to the *Irresistible*, on the *Monarch* commissioning. Staff-Surgeons: J. C. Bringan, to the *Monarch*, on commissioning, and to the *Gossamer*, lent; A. J. Wernet, to Queensferry Sick Quarters; P. L. Crosbie, to the *Vivid*, additional, for disposal; C. R. Sheward, to the *Yarmouth*, on commissioning; S. Roach, to the *Devonshire*, temporary; G. Gibson, to the *Bellona*, on recommissioning; and G. E. McLeod, to the *Sentinel*, on recommissioning. Surgeon: T. Creaser, to the *Pembroke*, additional.

ROYAL ARMY MEDICAL CORPS.

The undermentioned Captains to be Majors (dated March 21st, 1912): John P. J. Murphy, Arthur R. Greenwood, and William L. Bennett.

Lieutenant-Colonel J. Donaldson has embarked for a tour of service in South Africa. Lieutenant-Colonel W. A. Morris has arrived home from India. Lieutenant-Colonel H. C. Thurston, C.M.G., has taken up duty at the Royal Military College, Sandhurst, as surgeon, in succession to Lieutenant-Colonel C. C. Reilly. Lieutenant-Colonel A. P. Blenkinsop has embarked for a tour of service in India. Lieutenant-Colonel E. H. L. Lynden Bell has been granted general leave of absence home from India for eight months. Lieutenant-Colonel G. G. Adams has been selected to command the Station Hospital at Secunderabad, in succession to Lieutenant-Colonel H. S. McGill, tour-expired.

Major H. E. Winter has been appointed Deputy Surgeon to the Royal Hospital at Chelsea, in succession to Major F. Kiddle. Major R. W. Clements has taken over medical charge of the Enteric Fever Convalescent Depôt at Wellington. Major W. B. Fry has rejoined from the Egyptian Army. Major L. P. More has taken up duty at the Station Hospital at Secunderabad. Major P. H. Collingwood has been transferred from Plymouth to the Military Hospital at Devonport. Major J. J. W. Prescott, D.S.O., has taken up duty in the Southern Command. Major P. C. Douglass has embarked for a tour of service in India. Major F. G. Richards has arrived home on duty from Jamaica, tour-expired. Major E. B. Steel has been transferred from Delhi to the Station Hospital at Muttra. Captain E. P. Connolly, on arrival in India, has been appointed to the Station Hospital at Lahore. Major F. W. Begbie has rejoined at Colchester from Ipswich on relief by Lieutenant-Colonel J. Battersby. Major N. Faichnie, specialist sanitary officer to the Fifth (Mhow) Division, has been granted eight months' general leave of absence.

Captain E. G. Anthonisz and Captain A. E. F. Hastings have been detailed for duty on board the transport s.s. *Plassy*, which left Bombay for Southampton on March 13th. Captain F. A. Stephens has been appointed for duty to the Station Hospital at Rawal Pindi. Captain D. M. Corbett has been granted eight months' general leave of absence home from India. Captain J. A. W. Webster has been transferred from Kilkenny to the Military Hospital at Cork for duty. Captain T. J. Potter has left the London District for duty in Egypt. Captain J. A. B. Sim has arrived home from Bermuda on the expiration of his tour of foreign service. Captain F. C. Sampson has been appointed to the Scottish Command. Captain C. E. W. S. Fawcett has taken up duty in the Dublin District. Captain C. E. Fleming has been selected for appointment as Specialist in Ophthalmology to the South African Command.

Lieutenant W. H. O'Riordan has embarked for a tour of service in India. Lieutenant C. D. K. Seaver, from Fermoy, has been posted for duty at Ballincollig. Lieutenant M. J. Williamson, from Tidworth, and Lieutenant C. L. Franklin, from Preston, have embarked for a tour of service in South Africa. Lieutenant R. C. G. M. Kinkead has been transferred from Queenstown to the Military Hospital at Cork. Lieutenant T. W. Stallybrass has left the Royal Victoria Hospital, Netley, for service in Egypt. The following Lieutenants on probation have joined the Royal Army Medical College for the junior course of instruction: B. Biggar, T. A. Weston, D. T. M. Large, W. F. Christie, R. K. Mallam,

W. B. Stevenson, C. J. Blaikie, J. H. M. Frobisher, C. M. Ingoldby, O. W. J. Wynne, D. T. Richardson, E. A. Strachan, W. McNaughtan, S. J. Higgins, A. Hood, J. L. Richie, H. R. L'Estrange, P. A. With, and S. J. Barry.

INDIAN MEDICAL SERVICE.

The King has approved of the promotion of the following officers:—

Majors to be Lieutenant-Colonels (dated Jan. 30th, 1912): Bruce Gordon Seton, V.H.S., Robert Henry Elliot, and Robert King Mitter.

Captains to be Majors: George Browse, Herbert Armstrong Williams, D.S.O., and William Christopher Long (dated Jan. 27th, 1912); James Drummond Graham, Cuthbert Allan Sprawson, Maxwell MacKelvie, William Henry Cazaly, Walter Valentine Coppinger, William Mitchell Houston, William David Acheson Keys, Alexander Chalmers, and Samuel Robert Godkin (dated Jan. 28th, 1912).

Lieutenants to be Captains (dated Jan. 30th, 1912): Andrew Monro Jukes, Gwilym Gregory James, William David Keyworth, John Howard Horne, and Alfred John Lee.

Lieutenant-Colonel C. J. Sarkies has arrived home on leave of absence from India. Lieutenant-Colonel F. C. Pereira has been selected for appointment as District Medical Officer at Salem. Lieutenant-Colonel K. Prasad has passed the prescribed test in the Shan language by the lower standard.

Major H. Ainsworth has been granted furlough for three months. Major H. A. Smith has been selected as Civil Surgeon of Simla East in succession to Lieutenant-Colonel H. B. Melville. Major E. A. C. Matthews has been appointed to officiate as Superintendent of the X Ray Institute at Dehra Dun during the absence on leave of Major E. A. Walter. Major C. M. Mathew has been appointed to officiate as Medical Storekeeper in Madras Presidency. Major H. J. K. Bamfield has been appointed Specialist in Midwifery and Diseases of Women and Children in the Second (Rawal Pindi) Division.

Captain J. H. Horne has been placed on special duty for the investigation of malarial fevers in Madras Presidency for a period of three years. The services of Captain F. P. Mackie, officiating chemical examiner, Government analyst and bacteriologist for the United Provinces and Central Provinces, have been replaced at the disposal of the Home Department. Captain R. Knowles has been appointed to hold civil medical change of the Shansi District, in addition to his military duties, in succession to Major C. Milne, transferred. Captain J. E. Clement has assumed charge of Montgomery as Civil Surgeon. The services of Captain A. W. Howlett have been placed temporarily at the disposal of the Government of India. Captain D. Munro has been granted an extension of leave for three months. Captain W. C. Gray has been appointed Professor of Biology and Secretary to the Principal in the Medical College, Madras. Captain H. B. Scott has been appointed to officiate as Civil Surgeon at Swebo.

TERRITORIAL FORCE.

Royal Army Medical Corps.

4th London General Hospital, Royal Army Medical Corps: James Purves Stewart, late Surgeon-Lieutenant, East London (Tower Hamlets) Royal Engineers (Volunteers), to be Captain (dated Feb. 29th, 1912).

Notts and Derby Mounted Brigade Field Ambulance, Royal Army Medical Corps: Lieutenant Arthur B. Dunne to be Captain (dated Feb. 17th, 1912).

2nd Highland Field Ambulance, Royal Army Medical Corps: Major Alexander Ogston to be Lieutenant-Colonel (dated Feb. 12th, 1912).

2nd Home Counties Field Ambulance, Royal Army Corps: Lieutenant William H. Flint to be Captain (dated Dec. 8th, 1911).

1st Lowland Field Ambulance, Royal Army Medical Corps: Lieutenant Geoffrey Balmanno Fleming, from the List of Officers attached to Units other than Medical Units, to be Lieutenant (dated Feb. 21st, 1912).

1st West Riding Field Ambulance, Royal Army Medical Corps: Lieutenant Walter Lister to be Captain (dated Feb. 21st, 1912).

1st London (City of London) General Hospital, Royal Army Medical Corps: The undermentioned officers resign their commissions (dated March 27th, 1912):— Lieutenant-Colonel Norman Moore, and Lieutenant-Colonel William H. Cripps.

Attached to Units other than Medical Units.—Lieutenant Henry A. C. Harris to be Captain (dated Dec. 8th, 1911).

ESPERANTO AND THE RED CROSS.

Dr. G. Jameson Johnston, consul in Ireland for the All-World Esperanto Doctors' Association (to literally translate Tutmonda Esperanta Kuracista Asocio), writes, with reference to the note on this subject in our issue of March 9th: "Permit me to state that I was present at the Red Cross manœuvres which took place at the Seventh International Esperanto Congress in Antwerp last August. The municipal authorities granted the use of one of the public squares, and the military the necessary equipment. The nurses, bearers, &c., were members of the local Red Cross societies, and the patients were selected at random from the representatives of the 36 different nations who attended the congress. There were a first-dressing station, receiving station, and base hospital. A diagnosis card was attached to each patient, and international committees of doctors (my colleagues were a Russian and a Chilian) reported on the treatment. The arrangements were perfectly carried out, no language being used save Esperanto. Although many 'isms' are represented in the movement, still the 'cranks' form a very small part of the whole body. The language is now long past the 'hobby' stage and is a world wide living language, remarkably easy to learn. Here in Dublin there are over 15 members of the Universal Medical Association, and more are joining. The Provost of Trinity College, who graduated in medicine, is a strong supporter of Esperanto." We accept our correspondent's statement that the cranks form a very small part of the whole body of Esperantists, but this does not vitiate our argument that the progress of Esperanto in this country has been retarded by its association in the public mind, rightly or wrongly, with other ideas outside that of an international means of communication between the peoples of the world.

ROYAL ARMY MEDICAL CORPS SHORTAGE.

Owing to deficiencies from failure to obtain recruits, approval has been given to call up with their own consent, for duty with regular companies, trained special reservists of category (*a*) of the Royal Army Medical Corps Special Reserve. Recruiting has recently been opened throughout Ireland for the Royal Army Medical Corps Reserve.

LITERARY INTELLIGENCE.—We are informed that the Liverpool School of Tropical Medicine will shortly issue in at least four parts every year, the "Annals of Tropical Sanitation," edited by Professor Sir Ronald Ross, K.C.B., with the assistance of Colonel W. G. King, C.I.E., and Professor W. J. Simpson, C M.G. The annual volume will contain at least 500 pages, and the size of the page will be the same as that of the "Annals of Tropical Medicine and Parasitology." Annual subscription one guinea, payable in advance. Separate numbers 7*s.* 6*d.* each.

THE RELATIONS OF THE CLERGY AND THE MEDICAL PROFESSION.—The special committee which was appointed at a conference of the clerical and medical professions in London in October, 1910, "to consider the asserted results and the rapid development of so-called 'Spiritual' or 'Faith Healing' movements," has issued a report. The committee held 22 meetings and took evidence from many medical practitioners, clergy, and persons associated with "Spiritual" or "Faith Healing." The committee finds "that after careful and extensive inquiry there is not sufficient proof of any general or frequent failure (as has been alleged) of cordial relations between the medical practitioner and the minister of religion in their respective ministrations to the same sick person. Such cases are exceptional and rare." Any separate or independent treatment of the sick on the part of the clergy is strongly deprecated. There is further room for coöperation, within well-defined limits, between the two professions, particularly in certain nervous and mental cases—functional disorders, minor obsessions, or vicious habits, in which patients can often be approached from the spiritual side when medical suggestion is difficult to apply. An enlarged permanent committee of clergy and medical practitioners has been constituted to continue investigations, with the Right Rev. Herbert E. Ryle, D.D., Dean of Westminster, as chairman.

Correspondence.

"Audi alteram partem."

THE VALUE OF PNEUMOCOCCUS VACCINE IN THE TREATMENT OF PNEUMONIA.

To the Editor of THE LANCET.

SIR,—I do not propose to take up your space with any discussion of the intimate pathology of pneumonia, which would yet be in point in relation to the influence of vaccines upon the disease. I trust that before Dr. Nathan Raw finally advises the use of such frequent doses of the vaccine in pneumonia he will support his recommendation by a considerable series of cases besides the two very interesting ones to which he alludes. One's small experience of the effect of vaccines, when they have any useful effect, is that they are followed by some reaction symptoms, and one would doubt the advantage, or even the safety, of giving a second dose at or before the reaction period of the first. Perhaps I have too vividly in my recollection a drama, *The Doctor's Dilemma*, to which I listened with amusement but some heart searchings a year or two ago!

The control of diphtheria by antitoxin is, of course, a totally different treatment from that now in question, being the use of a serum, not a vaccine.

I am, Sir, yours faithfully,

Portland-place, W., March 23rd, 1912. R. DOUGLAS POWELL.

A NATIONAL HEALTH WEEK.

To the Editor of THE LANCET.

SIR,—Will you grant me a few lines of your space to call the attention of those specially interested in public health to the work which is now being done in connexion with a National Health Week.

The main point underlying the idea is that the time has nearly approached when if there is to be any further marked advance in the hygienic condition of the people the public conscience must be stirred as to the importance of personal hygiene—e.g., cleanliness, rational feeding, and matters of this kind. There is not the slightest suggestion that in instituting Health Week any criticism is to be made of the work done by the recognised sanitary authorities, the whole idea being that what is done will be supplementary to their work.

For Health Week to be a success it is necessary for all who are interested in matters hygienic to give any aid they can to the project, and it is obvious that in those towns and districts where a Health Week is being observed great help will be rendered to the movement if the medical profession generally give a strong support to it. The main idea, therefore, of the celebration is to try to arouse an interest in the private individual in matters concerning his own and his family's health; to lead him to understand what infant mortality means and how it can be dealt with; to let him see how necessary it is for private effort to be added to public in order that the great scourge of consumption may be properly dealt with. This and many other problems now awaiting solution can only be effectively dealt with by the whole-hearted coöperation of the private citizen.

I desire particularly to emphasise the view that we are not forming any new society. We are not clashing with any existing institute or authority. The committee is, in fact, mainly composed of officers of the leading health societies, nominated by those societies as their representatives. Any local Health Week celebrations will be under the control of a local committee, in which it is hoped that all sorts and conditions of people will join. The first Health Week will begin on Sunday, April 28th. The extent to which it is observed will depend entirely on local conditions. It is hoped that the clergy will lend their aid by dealing with the subject in some way in a sermon on that day, and that other forms of celebration, such as towns meetings, lectures or exhibitions, will subsequently take place.

As has been pointed out, we have no desire to do anything that may be termed sensational, but desire by steady and continued work to lead the public, not only in 1912, but in future years, to bear in mind what can be done by a united effort, in removing those hindrances to the enjoyment of good health which are still only too evident.

I am, Sir, yours faithfully,

A. BOSTOCK HILL,
Chairman of the National Health Week Committee.

Temple-street, Birmingham, March 22nd, 1912.

CÆSAREAN SECTION FOR DOUBLE MONSTROSITY.

To the Editor of THE LANCET.

SIR,—I think the following case worthy of publication for two reasons: (1) So far as I can discover, Cæsarean section has not been performed previously for the same condition; (2) the condition of the child, or monster, seems to be a new, though necessarily very rare, indication for the operation.

The patient, 39 years of age, had already had four normal pregnancies, and the youngest child was 11 years old. When I first saw her she had been in labour for 30 hours. A foot had been presenting at the vulva for two hours but the labour pains had been poor. She was under an anæsthetic when I arrived; her pulse was 140 and very feeble. A rapid examination convinced me that no intra-uterine interference could be finished quickly enough to ensure the patient's safety, and I decided to approach the uterus through the abdominal wall. On opening the peritoneal cavity the uterus was pulled well forward, and was thoroughly packed off from it with sterile towels. A fairly free incision was made into the uterus, and a dead double male monster was delivered with some difficulty as the hips were jammed in the pelvis. The placenta was detached, the interior of the uterus swabbed with double cyanide gauze, and the wound sewn up first with interrupted mattress sutures, then with a continuous peritoneal suture. The abdominal wall was closed in the usual way. The patient made an uninterrupted recovery.

The monster proved to be of the thoracopagus variety, the junction extending in length from the manubrium sterni to below the umbilicus, and in width from one side of the body to the other, quite unlike the flimsy junction which seems to be the rule in these monstrosities. A glance at the specimen assured me that under the circumstances embryotomy would have been much the more dangerous expedient to adopt. The specimen weighed 14 lb., and is now in the Museum of the Royal College of Surgeons.

I searched the following literature but failed to find a case which required similar treatment: (1) "Monster (Double)," U.S. Surgeon-General's Index Catalogue; (2) "Monsters," in the General Index, Transactions of the Obstetrical Society of London; (3) "Cases of Abdominal Cæsarean Section," collected by Dr. Amand Routh; (4) "On the Mechanism and Management of Delivery in cases of Double Monstrosity," W. S. Playfair, Transactions of the Obstetrical Society, 1866; (5) "Index Medicus," 1909–1910: Smith, "The Relative Indications for Cæsarean Section," *Ohio Medical Journal*, 1908; R. E. Webster, "Cæsarean Section," *Montreal Medical Journal*; A. C. Buist, "Cæsarean Section with Unusual Indications," *British Medical Journal*, 1909.

I am, Sir, yours faithfully,

St. Leonards-on-Sea, March 21st, 1912. DAVID LIGAT.

THE PRESCRIPTION OF TUBERCULIN.

To the Editor of THE LANCET.

SIR,—It is to be regretted that Mr. Squire's advocacy for expressing the dose of tuberculin in fractions of a c.c. has not been more vigorously controverted in England.[1] All tuberculins are either solutions or suspensions in water of one or more solid chemical principles. If we consider how such a substance as T.R. is produced the conclusion is forced upon us that it is highly improbable that an identical amount of solid extract is obtained from every 10 mg. or multiple of 10 mg. of tubercle bacilli; it is not probable that every c.c. of T.R. purchased will contain an identical amount of the active principle. The amount may be approximately similar, but it will not be identical. For instance, it will vary with the length of time the bacilli have been triturated and with the force of trituration.

[1] THE LANCET, Jan. 6th, 1912, p. 57.

As physicians we are concerned, not with the amount of the solvent used, but with the amount of the active principle in each c.c. of the solvent. The same criticism applies to emulsions. We wish to know exactly how much solid substance is held in suspension and solution in each c.c. of the particular preparation.

The original preparations of tuberculin are not accurate standard solutions comparable with normal soda solutions, nor are they volatile fluids like alcohol or ether, the dose of which may be correctly estimated by fluid measure.

It would be of considerable advantage to the practising physician if all manufacturers of tuberculin would adopt a uniform principle for the standardisation of tuberculin, and the standard should be this—namely, that 1 c.c. of every variety of concentrated tuberculin should contain 1 mg. of solid residue. I had hoped that this suggestion would have been discussed and recommended by the medical congress which was held in Sydney last year, but there was so much business for congress to transact that no time could be given to the matter. During last year I injected not less than 2000 doses of tuberculin, and I have found that the preparations of concentrated tuberculin T.R. obtained from different manufacturers do not always contain the same amount of solid residue. Therefore the results from the use of tuberculin by different clinicians cannot safely be compared so long as we estimate the dose of tuberculin by fluid measure. If tuberculin solution could be physiologically standardised like infusion of digitalis the difficulty could be removed. At present the only safe method is to express the dose in decimal fractions of milligrammes solid substance. I should further advocate that doses of tuberculin less than 1 mg. be registered in negative powers of 10 rather than in ordinary decimals. Thus 0·1 mg. is 10 to the power of minus 1 (10^{-1}), 0·01 mg. is 10 to the power of minus 2 (10^{-2}). 0·05 is 5×10^{-2}. The advantage of this method is that one is less liable to confuse the doses; thus the doses marked respectively 10^{-4} and 10^{-5} mg. are less readily confused than they would be if marked 0·0001 mg. and 0·00001 mg.

I am, Sir, yours faithfully.

C. REISSMANN, M.D., M.R.C.P.,
Physician, Kalyra Sanatorium; Honorary Physician, Consumption Department, Adelaide Hospital; and Lecturer, Forensic Medicine, University of Adelaide.

Adelaide, S.A., Feb. 22nd, 1912.

THE CAUSATION OF TOXIC SYMPTOMS FOLLOWING THE ADMINISTRATION OF SALVARSAN.

To the Editor of THE LANCET.

SIR,—We fully admit the justice of Dr. McIntosh's statement that it is difficult whilst a paper is being read to follow all the points raised. He cannot, however, have forgotten that in the paper referred to we again described the simple control experiments we had already published[1] in detail in December, 1911. These experiments showed that injection of water or saline found to be practically bacteria-free often produces high fever. If these experiments were good experiments the value of the contention that salvarsan fever (not including fever in acute secondary cases) is necessarily due to the presence in the solutions of large numbers of organisms at once vanishes. Until, therefore, these experiments are repeated, and their accuracy tested, Dr. McIntosh is scarcely in a position to dispute our statement as to the frequent possession of pyrogenetic properties by sterile saline. The objection that our later experiments cannot be studied in detail till their appearance in print surely does not justify him in ignoring experiments published in full three months ago—experiments that, if good, are clearly fatal to his views.

We are, Sir, yours faithfully,

E. C. HORT,
W. J. PENFOLD.

Harley-street, W., March 22nd, 1912.

[1] Brit. Med. Jour., Dec. 16th, 1911, pp. 1589 et seq.

PNEUMOSAN AS A REMEDY FOR TUBERCULOSIS.

To the Editor of THE LANCET.

SIR,—It is with great diffidence that I make some remarks on this preparation, and I say at once that my sole reason for so doing is the desire to bring before the medical profession my own genuine experiences in the use of the preparation. I am confronted by the fact that for centuries physicians have endeavoured to find a cure for tuberculosis. The remedies are legion, and many have proved utterly futile upon trial, consequently I feel that any comments on a new remedy should be made very guardedly, and that in reporting any result from its use the bare facts alone should be stated.

The alternative to sanatorium treatment, with its different indications for different cases, is at present tuberculin injections, but that they are liable to be dangerous and have many limitations has been asserted by undeniable authority, a view which I have held all along. The early cases with no breaking down and no mixed infection, the very cases, in fact, best treated by tuberculin, are fairly easily cured by sanatorium treatment without risk, by a treatment, in other words, of lung asepsis or lung hygiene, which prevents, or should prevent, the formation of secondary infections, and in some cases will clear up early cases of mixed infection. Undoubtedly the chief danger we have to meet are the secondary infections. Vaccines and serums in these cases hold a very valuable place in the treatment of pulmonary tuberculosis. Their use, however, is limited to a few, mainly on account of expense, time, the difficulty of handling, the expert bacteriological care required in their manufacture, the susceptibility of the patient to their action, and the fact that the practitioner must always be on the alert, and in constant attendance on the patient. To the busy general practitioner this is not possible.

A preparation which might have a direct action on the pathogenic organisms in the lungs would therefore be of such great value that if any evidence in favour of such a preparation is forthcoming I think it should be given a trial. A medical friend of mine brought pneumosan to my notice and I commenced to use it with an open mind and expecting no great results. I determined to accept nothing but hard facts patent to everyone, and more especially patent to the patients themselves. I hold no brief for pneumosan. I did not know of its existence until it was recommended to me. I am purely interested in it from a medical point of view in connexion with the treatment of pulmonary tuberculosis. Pneumosan, according to the description of its inventor, Dr. Caesare Ballabene, is an amyl-thio-trimethylene compound which destroys the bacillus of Koch in the foci, this being testified to by the abatement of fever and the opsonic index rising; through the amylic compounds the nervous system is helped and the appetite improved; and good dietetic and hygienic regimen completes the cure. The preparation is given by intra-muscular injections. The dosage is from four to ten minims, then a rest of two days is given; then the same dose is followed by three weeks' rest, and then another series of ten injections is given. This may be followed by a fourth or fifth series of injections if necessary—in fact, the number is not limited. The gluteal or scapular region is recommended, but I have used the deltoid region as more convenient for injection.

My experience tends to confirm what is claimed for pneumosan. I am unable to state that it cures tuberculosis, if only because sufficient time has not yet elapsed in my cases to justify such a statement. I have given the preparation in some 50 cases. In no instance has any harm resulted, and no irritation has occurred at the site of injection. In the advanced cases I had some striking results. A bad laryngeal case with pulmonary cavitation was enabled to get up after a few injections, having been in bed for five weeks with fever, the temperature gradually coming to normal. The expectoration diminished, and bad night sweats ceased. The weight gained was satisfactory. The pulmonary physical signs improved, but no change in the larynx was seen, although as the general condition was so improving probably the larynx was too, only imperceptibly. In another case who was fast losing ground, with cavitation and rapid breaking down, also ulceration of the left vocal cord, fever, and night sweats, the patient commenced to hold her own after the first series of pneumosan, her general condition improved, weight

was gained, night sweats ceased, and the morbid processes in the lung and larynx seemed to become controlled. Her general condition so improved that finally this patient could walk three miles comfortably. All the advanced cases except two made much the same progress as the above; one of the unsuccessful cases was complicated by diarrhœa, and the treatment was discontinued before the third series of injections. In cases of the first and second stages, with mixed infection in some, I have noticed the best results—namely, improved appetite, weight gain, night-sweats cease in nearly every instance, cough is lessened, and expectoration diminished, and to quote the words of the patients themselves: "They feel better, eat better, sleep better, and have an increased sense of well being." It has never been claimed for pneumosan that it is an absolute and positive cure for every case of tuberculosis, but my experience it that it does good, and that with its help improvemens may ensue even in advanced cases. Therefore I think it deserves serious consideration and careful trial from members of the medical profession. In judging results, however, it must be borne in mind that all my patients injected with pneumosan were carrying out strict sanatorium treatment.

I am, Sir, yours faithfully,

J. PENN MILTON, M.R.C.S. Eng., L.R.C.P. Lond.,
Honorary Physician, Plymouth Public Dispensary; late Medical Partner to Dr. Otto Walther, Nordrach-Colonie, Black Forest, Germany; and Medical Superintendent to the Devon and Cornwall Sanatorium.
Udal Torre Sanatorium, Yelverton, R.S.O., S. Devon, March 18th, 1912.

THE "CHOLERA BELT."

To the Editor of THE LANCET.

SIR,—As an old Indian practitioner I have been interested in reading the notices of two recent works on disease prevention in India that have recently appeared in your columns. In one of these I see it stated that the authors do not recommend the use of the so-called cholera belt as a preventive measure against either cholera or dysentery. With your permission I should like to draw attention to the question of this "cholera belt." In their work on Tropical Hygiene, Sir C. Lukis and Major R. J. Blackham advise certain preventive measures to be taken in regard to cholera and dysentery; in neither case do they advise the protection of the abdomen by wearing a flannel belt, as used to be the custom in former days. In discussing the subject of clothing (p. 85) their opinion is that it is of little value for this purpose. Yet they advise its use at night, and point out that chill often leads to diarrhœa or dysentery. If it protects from chill at night, why not also by day? The liability to contract chill after exercise, whether on the parade ground or at polo, is undoubted. Lieutenant-Colonel P. Hehir, on the other hand, strongly recommends the belt, "at the risk of being considered old-fashioned"[1]; he states that it maintains an equilibrium in the circulation around the organs most likely to be affected by changes of temperature. He says that many British officers consider it a fad. What is the opinion of Indian officers? With the light clothing that is invariably worn during the hot season in a tropical climate, and the considerable perspiration that results on slight exertion, there is surely need for specially protecting the liver and abdominal organs generally, both by day and by night. The name is perhaps an unfortunate one, but from a physiological point of view to guard against sudden internal congestion of the liver and bowels from chill to the abdominal surface appears to be a sound principle. It would be interesting to learn if there is any scientific reason for the disuse of what, until a few years ago, was recognised as a useful measure of protection.

I am, Sir, yours faithfully,

March 18th, 1912. ANGLO-INDIAN.

THE MEDICAL PROFESSION AND THE NATIONAL INSURANCE ACT.

To the Editor of THE LANCET.

SIR,—Why do not the advocates of payment for work done tell us how they would deal with the two great obstacles to the system they propose? I allude to overcharge by doctors and bookkeeping. As regards the first, I suppose they would insist on an adequate fee; shall we say 2*s.* 6*d.* a visit? And I suppose, too, the doctor must have the right to say how often he must visit his patient? He cannot possibly submit to any committee or other body saying he shall only go, or at any rate only be paid for, so many visits in a certain time. If this is granted the rest follows. I have at present six club patients permanently on the sick list, every one of whom would be glad to see me daily; they would be worth £273 per annum under that scale of pay. Even the humble shilling would yield £109 per annum.

What I venture to submit as the second objection—bookkeeping—has not, so far as I know, been suggested hitherto. I presume that a detailed account would have to be sent in to the Insurance Committee for every patient attended. The account would certainly have to be in a particular form to allow of checking. It would probably be a rule that all accounts would have to be sent in within a limited time—say a month—of becoming due. (This would be necessary; otherwise it would be impossible for the office to keep the books accurately, and confusion would arise from removals and lapses.) Any departure from the prescribed rates, such as extra visits, mileage, night calls, would have to be duly explained in such a way as to satisfy a Government auditor.

Let the advocates of payment for work done think what it means to keep medical books from day to day in such a manner that accounts such as these can be sent out. No A B C method or abridged system of any kind will do; nothing short of full day-book and ledger would meet it. Think, too, of copying out 400 or 500 such accounts positively during the first month of every quarter, and then, too, think of the correspondence that would follow—e.g., "John Smith, Timbuctoo-terrace, we cannot trace, he is not on your list"; "Your charge of 1*s.* mileage is disallowed, the distance by Ordnance map is 1 mile 1759 yards," &c. No, Sir, payment for work done is unattainable, and I venture to submit undesirable.

I am, Sir, yours faithfully,

Leeds, March 23rd, 1912. CHARLES F. SEVILLE, M.B. Lond.

To the Editor of THE LANCET.

SIR,—I should like very briefly to allude to the three letters which appear in THE LANCET of last week under this heading. Mr. George Brown, I believe, voices the opinion of the general practitioner much more accurately than the Council of the British Medical Association has done. Payment for work done *versus* per capita payment has never been put before the medical profession as a clear issue. The Association has, quite wrongly I think, taken it for granted that the latter mode of payment is necessary under certain conditions, and has most unfairly kept the former in the background—*vide* the decision at the last Representative Meeting.

Dr. Hall's contention, "that in view of the falling sickness rate the premium method is the only means by which our incomes can be maintained," is, I think, quite indefensible. I have always thought that our peculiar and pre-eminent claim to the title of an honourable profession consisted in the fact that we are daily, nay hourly, doing all we can to enable our patients to dispense with our services; and surely no greater triumph can be imagined than the advent of that happy day when one doctor will be able to take the place of six or more. In the meantime let us be paid a fair fee for what we do.

Dr. Cook seems to forget that 8*s.* 6*d.* is already paid by the Government for Post Office employees. This is a very "solid reason," such as Dr. Cook seeks, for our demanding "more," seeing that the lives will not be selected ones.

I am, Sir, yours faithfully,

T. CUMING ASKIN, M.D. Dub.

Alderton, Suffolk, March 25th, 1912.

To the Editor of THE LANCET.

SIR,—In the current number of THE LANCET two of your correspondents seek information as to the average number of attendances required during the year by a member of a club. I doubt if any records of numbers sufficiently large to be reliable in striking an average are to be found, but data sufficient to form the basis of a rough estimate exist scattered through the pages of your "Battle of the Clubs."

First as to generalities, frequent mention is made of the amounts paid by different clubs to their medical officers. These sums vary from 2*s.* to 4*s.* 4*d.* per annum, the most usual sum paid being 3*s.* 6*d.* The average amount paid per

[1] Prevention of Disease and Inefficiency, p. 375.

visit is referred to as being from 1¼*d.* to 8*d.*, the figures most frequently quoted being 2*d.* to 3*d.* If we take 3*s.* 6*d.* as the mean subscription per head per annum and 4*d.* as the mean value per visit, this gives 10·5 visits per member per annum.

In certain cases the actual numbers of members of clubs and the consultations given and visits paid are stated. These numbers when totalled amount to 52,551 members who required 226,446 attendances, or an average of 4·30 attendances per member. These numbers are not absolutely correct, for in the case of Hull the numbers are only given in round thousands, and in the case of Northampton the number of members is an estimate only. The difference in result between these two methods of calculating is somewhat large, but it is probable that the true average lies somewhere between the two, and probably nearer to the lower figure than the higher, and it would probably be safe to put the number at six visits per member per annum.

In order to pay 2*s.* 6*d.* per visit on this basis the capitation fee would have to be 15*s.*

I am, Sir, yours faithfully,

Ramsgate, March 25th, 1912. FRANK MILTON.

MANCHESTER.

(FROM OUR OWN CORRESPONDENT.)

The Need and Advantages of "School Clinics."

AT the annual meeting of the Manchester, Salford, and District Branch of the National Union of Woman Workers, which was held in Manchester on March 19th, interesting papers on school clinics were read. Miss McMillan, speaking on "Education and Nurture," said that the need for school clinics rested on the fact that the majority of the children of working people were not sufficiently nurtured. This was not entirely due to poverty, but partly to the condition of industrial life in this country, which had devastated home life and destroyed the arts and crafts of motherhood. School clinics, said Miss McMillan, provide a new agency in substitution to some extent for the private nursery. Mr. R. H. Tawney, in the course of an address on "School Clinics," pointed out that we are putting an impossible task on the teachers when we send the children to school in an unhealthy condition. The Manchester school returns showed that one-third of the children had defective eyesight at the school-leaving age. These diseases increased between 5 and 13, and it was obvious that this evil was not to be remedied by leaving it alone. In the majority of cases the parents were not in a position to secure proper medical advice and treatment, and the only effective way of dealing with the children was to establish school clinics in the city. The cost of two clinics larger than the one at Bradford would not amount to more than $\frac{1}{15}$th to $\frac{1}{18}$th of a penny rate per year. In connexion with the cost there must be taken into account the present heavy loss of grants caused by the absence of children from school through illness—a loss which would be considerably reduced by the work of the clinics.

A conference on "School Clinics," which was largely attended, was held here on March 21st, when Dr. Lewis Williams described the work that is being done in Bradford, and Mr. W. Jones gave an account of what is done in regard to the preservation of the teeth of school children in Cambridge. Manchester so far has not adopted any system of school clinics, chiefly because of the lack of any compensatory grant from the Government. Dr. Williams pointed out that even to the untrained eye it was obvious that a large number of scholars were being allowed to grow up more or less physically deformed, and with the prospect of their future careers seriously threatened by the unenviable possession of one or more of the defects so common during school life—such as defective vision, defective hearing, stammering, spinal curvature, decayed teeth, or adenoids, any of which must interfere with the child's capacity as a wage earner in adult life. Indeed, some defects debarred them entirely from certain occupations. Speaking of the establishment of a school clinic, he asserted that it should be administered by the education authority, if the three following necessary conditions are to be obtained: (1) The submitting of the children to treatment; (2) their regular attendance during treatment; and (3) their speedy return to school after treatment. Mr. Jones stated that bad teeth undermined the health and happiness of 85 per cent. of school children.

Children's Hospital and the Act.

The yearly meeting of subscribers to the Manchester Children's Hospital was held on March 20th, when the annual report was presented. The report states:—

> The passing of the Insurance Act has given rise to much anxiety on the part of voluntary hospitals, because it is feared that charitably disposed persons may think that there is no longer any necessity for their support. When, however, it is realised that on the one hand the medical benefit given by the Act does not in any way meet the cases of the vast majority of the inmates of hospitals, and will not lessen the demands upon or the need for the work of such institutions, while on the other hand the Act does not give the hospitals any right to a share in public funds, it is to be hoped that the stream of private benevolence will not be permanently affected. ..... But whatsoever view may be taken as to general hospitals, it should be remembered that the case as regards children's hospitals is different. They do not cater for insured persons. The Act makes no provision for sick children beyond the possibility that in some consumptive cases the children of insured persons may be admitted to sanatoria. If the support given to such hospitals falls off, children will suffer just as they would have done if the Act had not been passed.

March 25th.

SCOTLAND.

(FROM OUR OWN CORRESPONDENTS.)

Bequest by Lord Lister to Edinburgh University.

AT the monthly meeting of the Edinburgh University Court, held on March 18th, it was intimated that the late Lord Lister had made certain bequests to the University of Edinburgh. These included the insignia of the Prussian Order of Knighthood and of the English Order of Merit; the medals received since his studentship from the Royal Society and other learned bodies; diplomas, &c., conferred by scientific bodies, and various honorary gifts and distinctions. Among the latter are the caskets containing the freedom of the cities of London, Edinburgh, and Glasgow, and of the Merchant Taylors' Company, and the trowel presented to him when opening a new nurses' home at Montreal, together with his portrait in oils. The Court resolved to record their high appreciation of the bequest as a testimony of Lord Lister's affection for the University and city in which he began his professional career, and of his having chosen the University of Edinburgh as the depository of these memorials of his fame and of his place in history as one of the great benefactors of mankind.

Diploma in Psychiatry.

At the meeting of the Edinburgh University Court, held on March 18th, it was resolved to admit women medical practitioners to the University course on physiology of the brain and nervous system for the diploma in psychiatry.

Royal Edinburgh Hospital for Sick Children.

The fifty-third annual general meeting of the contributors to the Royal Edinburgh Hospital for Sick Children was held on March 20th. The directors' report stated that the indoor cases during the year numbered 2031, as compared with 2034 in 1910. Of these cases 1391 were medical and 640 surgical. In the out-patient department 24,513 cases had been treated, as compared with 28,315 in 1910. The ordinary income was £5987 8*s.* 8*d.*, while the ordinary expenditure had been £8465 17*s.* 7*d.* As regarded the convalescent home the directors were satisfied that the cost of its maintenance, amounting to £777, was more than repaid by the benefit the patients derived from residence there. During the year 179 patients had been sent to the convalescent home from the hospital. The medical report drew attention to the fact that nearly half the out-patients were children under two years of age, which accounted for the fact that fully one-third of the beds in the hospital had to be relegated to the treatment of infants. The staff suggested that it was desirable to consider the advisability of adding a milk depôt to the therapeutic resources of the hospital, and the chairman of the directors, in moving the adoption of the report, pointed out the need for further contributions if the scheme were to be carried out, and a proposed balcony accommodation provided.

Annual Report of the Crichton Royal Institution, Dumfries, for the Year 1911.

At this institution the average daily number on the registers was 865·8. During the year there were 202 admissions, of which 159 were certificated and 38 voluntary patients. Of the cases admitted 25 had had one or more previous attacks of insanity, while 100 were suffering from their first attack of mental disorder. The mean age on admission was 45·2, the youngest being a girl of 15 and the oldest a man of 82. The exciting causes of the attacks, apart from distinctly nervous constitutions, inherited or acquired, were most commonly of the nature of worry, affliction, shock, and similar psychical factors and various antecedent bodily illnesses. It is reported that 35 persons admitted were in fair bodily health, 70 were in poor bodily health, and 20 in a weak physical condition. There were 129 discharges representing 124 persons, 87 of whom had been certificated and 37 voluntary patients. The recovery rate of the certificated patients, based on the receptions, was 47·2 per cent. The forms of mental affection recovered from were chiefly in order of frequency, melancholia, delusional insanity, mania, and confusional insanity. In 74 per cent. of the recoveries the mental illness had lasted in all less than a year. The deaths numbered 43 certificated patients and 2 voluntary boarders; the death-rate of the former, based on the average resident population, was 5·2 per cent. The principal causes of death were affections of the heart in 12 cases, exhaustion from melancholia and mania in 7 cases, senile decay in 5 cases, and general paralysis in 4 cases. Only 2 patients died from tuberculosis. Necropsies were held in 79 per cent. of the deaths. Dr. C. C. Easterbrook, the physician superintendent, writes that it is difficult to say to what extent the far-reaching and unwieldy National Insurance Act, 1911, will apply to the institution. Should the Act apply it will be an egregious burden and hardship, for it will ensure only a modicum of the benefits at present enjoyed by those employed on the permanent staff, the institution officials being pensionable and receiving during illness full wages in addition to medical treatment and attendance, and the wives and children of married men living on the estate being also, during their much more frequent illnesses, attended by the resident medical staff.

March 25th.

IRELAND.

(FROM OUR OWN CORRESPONDENTS.)

High Death-rates in Ireland.

THE death-rates in several Irish towns have reached abnormally high figures in the past few weeks. In the Dublin registration area, for the week ending March 16th, the death-rate was 31·8 per 1000 per annum. Curiously it was less in the city, 31·1, than in some of the suburban townships—Rathmines and Rathgar 36·2, and Kingstown 42·4. In some provincial towns the rates were also very high. Thus, in Ballymena the death-rate reached 36·7, and in Kilkenny 44·6.

Dublin Hospital Sunday Fund.

After some years' falling off the Dublin Hospital Sunday Fund last year realised £3454 6*s.* 9*d.*, an increase of £113 9*s.* over 1910. The hospital football match contributed £100.

Disgraceful Behaviour at Ballinrobe.

At a recent meeting of the Ballinrobe, co. Mayo, Poor-law guardians one of the guardians proposed a motion to rescind an increase of medical salaries passed at a previous meeting. The meeting was packed with visitors armed with sticks, who violently shouted down the medical officer, the Local Government Board inspector, and others who essayed to speak against the motion, which was carried by 14 to 10. If, however, the Local Government Board had sanctioned the increase, it could not legally be altered or reversed.

The Dental Hospital of Ireland.

The annual report of the Dental Hospital of Ireland, issued a few days ago, states that the number of cases treated during the year amounted to 48,370. There were 2183 operations under anæsthetics. The number of students on the roll of the school during the year was 48.

The Insurance Act Lectures.

Some of the lecturers appointed under the Insurance Act to enlighten the public are giving very pleasing, though it may be feared not altogether accurate, information. For instance, at a meeting held in Belfast on Feb. 19th, a paid lecturer stated, according to the local papers, that the Act would provide from the very first sanatorium benefit which would remove at one stroke the whole consumptive population and send them back free from contagious disease in a year, thus relieving the rest of the population from danger of contamination. During 1910 the public health department of the city of Belfast dealt with 1173 cases that were either voluntarily or compulsorily notified as tuberculosis of the lungs It would be a tall order to provide sanatorium treatment for them all; and to say that after a year's residence in a sanatorium they would return "free from contagious disease" is absurd. It shows the nonsense of appointing lecturers to deal with a subject about which their knowledge is nil.

A Libel Case.

In a libel action brought at Belfast Spring Assizes on March 19th and 20th, by a dairyman against the Belfast *Northern Whig*, on account of an article stating that the Belfast Health Committee claimed to have found the cause of the outbreak of diphtheria in the milk coming from a certain farm, and recounting the evidence on which the committee's assertion was made, the jury, after only five minutes' absence, rendered a verdict for the *Northern Whig* with costs.

Down County Infirmary.

From the annual report it appears that the total income for the year ended Dec. 31st, 1911, was £2403 15*s.* 8*d.*, and the expenditure £2444 18*s.* 1*d.*, leaving a balance due of £41 2*s.* 5*d.* During the year 2027 were treated, 716 in hospital, and 1311 in the extern department.

Kitchen used as a Cow-house.

On March 21st, at Newtownstewart petty sessions, a farmer summoned a servant for leaving his work before his period of hired service was completed. The evidence showed that about Feb. 18th one of complainant's cows became sick and was brought into the kitchen, where it calved. It remained there for nine days, when it died. The milk which was sent to the creamery passed through this kitchen, and the servant actually had to sleep in this kitchen. The servant said he had not been in good health, but put up with it as long as he could. The case was dismissed, the defendant being allowed 10*s.* costs. What is the use of veterinary inspectors when such a state of affairs is tolerated?

March 26th.

PARIS.

(FROM OUR OWN CORRESPONDENT.)

The Struggle against Alcoholism.

ONE of the greatest scourges that afflict the human race in all countries is undoubtedly alcoholism. Every day the struggle against this plague is making greater efforts. France, unfortunately, is especially afflicted, at least in certain regions. For many years this matter has engaged the attention of all those who are interested in public health and in the preservation of the vigour of the race. All means of combating it have been sought for, and undoubtedly the best that has yet presented itself is the limitation of the number of liquor shops. Unfortunately, whenever this question comes up in the Chamber of Deputies, while everyone heartily approves of this limitation, no one dare take the responsibility of putting it to the vote, for the liquor-sellers are particularly influential in politics, so that up to now it has been practically impossible to attack or limit these places. The Chamber of Deputies, having this matter once more before them, has again adjourned the vote upon it. The National League against Alcoholism held a great protest meeting on March 17th, which drew together a large attendance, at which all shades of political opinion

were represented. Professor Debove, a former *doyen* of the Faculty of Medicine, was elected chairman. After many speakers had addressed the meeting, M. Joseph Reinach pointed out that the aim to be sought was not only the limitation of the wine-shops, but also to overcome the misery that engenders alcoholism and the insanitary dwelling and environment that favour its development. A vote of censure was passed on the Chamber of Deputies for failing to come to a decision on the matter.

The Relief of Impoverished or Sick Scientific Workers.

The Duc de Loubat, a member of the Institute, well known for his enlightened and effective pecuniary patronage of scientific work, and to whose generosity, to cite merely one example, the Faculty of Medicine of Paris owed the foundation six years ago of a chair of clinical therapeutics, has given to the Academy of Belles Lettres, of which he is a member, two blocks of securities of an annual value of 3000 francs each, to be devoted to assisting scientists, whose work is temporarily arrested through lack of means or illness.

The Grafting of Transplanted Articulations.

On March 19th M. Tuffier reported to the Academy of Medicine, with radiographic demonstrations, the cases of several patients in whom he had resected the elbow, transplanting therein a partial or total articulation. Among other cases he cited two particularly convincing ones. One patient, aged 23 years, had had an elbow-joint entirely useless from ankylosis for two years. M. Tuffier resected the ankylosis and made a new elbow with a tibio-tarsal articulation removed from the amputated limb of a woman. Now, 13 months later, the patient was making use of his transplanted articulation. In the second case, a young man, aged 21 years, had the same operation performed for serious tuberculosis of the elbow. For 14 months the result had proved perfect, the new articulation preserving both its form and its function.

Hospital Abuse.

For many years past the medical profession in France has been protesting against the ease with which patients in comfortable circumstances obtain gratuitous treatment in the hospitals, doing thus a double injury, not only to the Assistance Publique which they could pay for services, and to the really poor whom they deprive of their places in the hospital service, but also to the medical practitioners whom they thus deprive of a *clientèle* perfectly able to pay fees. Everyone is aware of it, yet in spite of that it seems very difficult to prevent this abuse. The Syndicate of French Oculists has dealt with the matter in a very effective manner. A man comfortably well off was operated on gratuitously for cataract in the ophthalmological department of a hospital. This fact becoming known to the Syndicate of Oculists, the latter made an energetic protest to the director of the hospital establishment, who, after an inquiry that fully established the patient's circumstances, with the authority of the Minister of the Interior, demanded the payment of 1000 francs damages. To avoid the prosecution with which he was threatened the patient had to pay the 1000 francs. The Minister of the Interior, recognising the wrong inflicted on the medical body, authorised the director of the hospital to pay over 500 francs to the treasury of the Syndicate of Oculists.

A Medical Committee of Aviation.

A medical committee of aviation has been formed, the honorary president of which is Dr. Reymond, a senator, who has himself made several flights in an aeroplane. Many well-known medical men are members of the committee. The secretary is M. Lepaitre. An appeal is to be issued to all French medical men.

March 25th.

A BRONZE memorial tablet to the late Dr. Leonard Strong McManus has been affixed to the wall of the Battersea Dispensary for Consumption. The inscription reads: "Leonard Strong McManus, 1857–1911. This tablet was erected by public subscription in memory of his kindness to the sick and poor and his untiring efforts to establish in Battersea a dispensary for the prevention of consumption and other forms of tuberculosis."

Obituary.

JAMES BLAKE MAURICE, M.D. ST. AND., F.R.C.S. ENG.

A VERY notable figure in the medical and social world of North Wilts passed away on Feb. 14th last, when Dr. James Blake Maurice died at Lloran House, Marlborough, the house in which he was born 72 years ago. Educated at Cheltenham College, he entered St. Mary's Hospital, London, and became M.D. St. Andrews, F.R.C.S. Eng., and L.S.A. Lond. Having declined the post of surgical registrar at St. Mary's which was offered to him, he joined his father at Marlborough in the practice which his grandfather had first established, and entered on the career which for the next 50 years was to make his name widely familiar in the locality. Over a wide area in North Wilts his opinion was soon eagerly sought, both as practitioner and as consultant. He was an excellent operator, possessing sound judgment and manual skill of a high order. A long series of successful cases of fracture of the elbow-joint treated in the flexed position without splints—a method he had learnt from his father—displayed him again as a skilled surgeon. He had great medical acumen, and was the happy possessor of a highly developed clinical instinct, which often enabled him to come to a sound conclusion as to the patient's condition, by what appeared to be hardly more than a cursory glance. He had the power of inspiring confidence in his patients, and possessed a great store of common-sense. Over and above his purely professional duties, he had many interests, being a man of affairs, with an extraordinarily wide and varied knowledge of men and things.

The medical officer of Marlborough College, Dr. Edward Penny, informs us that during the last quarter of a century, whenever difficulty or danger has arisen to the health of the school he has been accustomed to turn to Dr. Maurice for help and advice, always freely and generously placed at his disposal, "to the great advantage of himself and to the still greater advantage of the school."

For 30 years Dr. Maurice served in the Royal Wiltshire Yeomanry; for 45 years he belonged to the Marlborough corporation, being mayor four times; for 35 years he was a borough magistrate; and for 30 years a county magistrate, besides holding other important public offices. He was surgeon to the Savernake Cottage Hospital, one of the first cottage hospitals to be established in England, in the founding of which he had taken a large share. Happy in so much, Dr. Maurice was above all happy in his family life. He married the daughter of Mr. Nathaniel Kindersley, of the Indian Civil Service, who, together with 12 of his 13 children, survive him. Four of his sons are members of his own profession.

The funeral in Preshute churchyard was attended by the largest and most representative body of people who had gathered on a similar occasion in the neighbourhood within living memory.

EDWARD MASON WRENCH, M.V.O., F.R.C.S. ENG., J.P.,

CONSULTING SURGEON, WHITWORTH HOSPITAL, DARLEY; LATE SURGEON-LIEUTENANT-COLONEL (V.D.) 2ND V.B. DERBYSHIRE REGIMENT.

WE regret to record the sudden death from heart failure of Surgeon-Lieutenant-Colonel E. M. Wrench, a Crimea and Mutiny veteran, who was very well known and greatly respected in the district around Chatsworth. Mr. Wrench was born in 1834 and was the son of the Rev. T. W. Wrench, vicar of St. Michael's, Cornhill, London. He studied medicine at St. Thomas's Hospital and qualified M.R.C.S. and L.S.A. in 1854, and in the same year joined the army in the Crimea as assistant surgeon to the 34th Regiment of Foot. After hospital service at Balaclava he was on trench duty at the front, and in connexion with the attack on the Redan was mentioned in despatches for courage, coolness, and professional skill. In 1856 he was gazetted to the 12th Lancers and served with them in the Indian Mutiny, for which also he received the medal and clasp. Mr. Wrench retired from the army in 1862 and settled in practice at Baslow. He soon joined the 2nd Battalion Derbyshire Volunteers and was eventually promoted Surgeon-Lieutenant-Colonel in 1892, and received the Volunteer Decoration in 1893. He was very popular as

a medical man, and remained in active practice up to the last. He obtained the Fellowship of the Royal College of Surgeons in 1870. Mr. Wrench was friend and medical adviser to the last three Dukes of Devonshire, and attended King Edward when a visitor at Chatsworth, and was decorated by the late King with the Victorian Order. He was consulting surgeon to the Whitworth Hospital, Darley Dale, and a justice of the peace for Derbyshire. His tastes were varied and his interests wide. Latterly he was subject to heart attacks, and his death occurred whilst he was cycling home from Buxton. He leaves a wife and three sons, one of whom is in medical practice in Durham. He will be greatly missed throughout the countryside.

JAMES FRANCIS RYMER, M.R.C.S. ENG.

NEWS has lately reached England of the death on Jan. 11th at Fort Resolution, Great Slave Lake, in North-West Canada, of Mr. James Francis Rymer, who was the first fully qualified English medical man to take up residence and carry on professional work within the Arctic Circle. Studying at Guy's Hospital he qualified M.R.C.S. and L.D.S. in 1887 and obtained an American dental degree in 1892. He resided at Brighton for some years and was honorary surgeon to the Brighton, Hove, and Preston Dental Hospital and medical officer to the Carthusian monastery at Cowfold. In 1907 Mr. Rymer carried out an examination of the teeth of the children attending the elementary schools of the town, and his report called forth from Dr. Arthur Newsholme, then medical officer of health of Brighton, the following statement to the education authority: "The town of Brighton owes a debt of gratitude to Mr. Rymer for this excellent piece of work." In December, 1907, Mr. Rymer sailed for Canada and settled at Edmonton, and in the following June he set out for Fort Resolution on his journey to Fort Good Hope, a distance of 2000 miles. Mr. Rymer wrote *en route*: "I was still busy tending the poor Indians at every station; phthisis, scrofula, and other diseases being common and carrying off yearly large numbers. From Providence to the Arctic Circle these people had never seen a doctor, and I was hailed with marks of affection. My pay was in skins, there being no money in circulation in the North." It was at Fort Resolution, while attending a suffering Indian, that he passed away suddenly.

RICHARD ARTHUR PRICHARD, M.R.C.S. ENG., L.R.C.P. EDIN., J.P.

BY the death of Mr. R. Arthur Prichard, which occurred on Monday, March 11th, there was lost to Conway and the North Wales district a prominent and popular citizen. Born at Pwllheli, Mr. Prichard was educated by an uncle, and after serving articles in Portmadoc qualified in 1867 as M.R.C.S. Eng. and L.R.C.P. Edin. He settled in Conway in 1868, and soon acquired an extensive practice, while he also took a great interest in the affairs of the corporation, serving as mayor of the ancient borough of Conway on no less than six occasions. He was an ardent Freemason. In 1909 he was presented by the community with a handsome motor-car as a testimonial from Carnarvonshire, and especially from Conway, in recognition of his long and arduous public work, the extensive nature of his sympathies, and his sound judgment. He was 69 years of age at his death, and at the funeral, which took place on March 15th, all the places of business were closed during the afternoon.

DEATHS OF EMINENT FOREIGN MEDICAL MEN.—The deaths of the following eminent foreign medical men are announced:—Dr. Max Mandelstamm, of Kieff, who, but for his being a Jew, would have been an "ordinary" or full professor in a Russian university. Being thus disqualified, he had to content himself with a mere title as professor. He had, however, an immense practice, and was a leading spirit amongst his co-religionists of the Zionist party. He was born in the government of Kovno in 1838, and received his medical education in the Universities of Iurieff (Dorpat) and Kharkof, where he qualified in 1860. He practised for some years in Russia, but afterwards went to Germany, where he studied under von Graefe in Berlin and under Helmholtz in Heidelberg. He held an appointment as ophthalmic surgeon to a hospital in Wiesbaden, and returned to Russia in 1868, settling in the university town of Kieff, where he became head of the Ophthalmic Clinic, and was repeatedly elected to the chair, but his election was barred by his religious persuasion.—Dr. Ernst Löhlein, senior surgeon of the Lazarus Hospital, Berlin, from influenza, aged 55.—Dr. Wilhelm Doenitz, of the Berlin Institute of Infectious Diseases, aged 73. After graduating and holding various appointments in Berlin, he was appointed by the Japanese Government in 1872 to organise their newly established medical school and the sanitary department. After his return to Germany he applied himself specially to the investigation and treatment of infectious diseases under Robert Koch in Berlin. From thence he went to the institute for serum preparation at Steglitz. In 1899 he followed Brieger as chief of the infectious disease department of the institute in Berlin. Tropical hygiene has much to thank him for, as he was an accomplished entomologist. He also enriched the science of anthropology by many observations on Eastern Asiatic peoples while he was resident in Japan.—Dr. Paul Bourgeois, formerly deputy for La Vendée.—Dr. Fletcher Powell, formerly professor of pathological anatomy in the Washington University Medical School, Baltimore.

THE NATIONAL INSURANCE ACT.

THE ACTION OF THE UNIVERSITIES AND CORPORATIONS.

AT a fully attended meeting of representatives of the Medical Faculties of the English Universities, of the Royal College of Physicians of London, of the Royal College of Surgeons of England, and of the Society of Apothecaries of London, held at the Royal College of Physicians on March 21st, the following resolution was passed unanimously:—

That this conference, in which are represented the Medical Faculties of the Universities of England and Wales, the Royal College of Physicians of London, the Royal College of Surgeons of England, and the Society of Apothecaries, recognises that there is a remarkable unanimity of opinion within the medical profession as to the attitude which its members should adopt towards the working of the National Insurance Act of 1911.

This conference desires to place on record its general approval of the principles which inspire that attitude, and while conscious that there is some difference of opinion with regard to details, expresses its willingness to support the demand that these principles should be recognised by those who are responsible for the administration of the Act before medical practitioners consent to work under it.

NATIONAL MEDICAL UNION.

The National Medical Union held a general meeting in Manchester on March 26th. The officers of the Union and a general committee were elected. The general committee subsequently elected an executive which has to report to the general committee once a month, and the general committee will report to the Union at least once in three months. The Union is the outcome of the mass meetings held in Manchester last November and December, and the policy then enunciated was unanimously reaffirmed at the meeting.

A resolution was passed to further support the members of the British Medical Association in their determination to secure the minimum demands of the profession, and approving of the action of the Representative meeting in so far as it carried out the policy of the Union; but the meeting expressed its regret that an advisory committee had been prematurely appointed and allowed to confer with the Commissioners. An instruction was given to the organising committee to influence as far as possible the elections throughout the country for the Representatives and Council of the British Medical Association by securing men who are in sympathy with the objects of the Union.

A committee of the Union is at present dealing with the subject of club and contract practice and preparing a scheme to meet this danger which will arise in the near future.

Dr. T. Arthur Helme has retired from active participation in the work of the Union on account of his health. The error that has appeared in certain quarters that he is the originator of the Union should now be corrected to prevent any misunderstanding.

Dr. Lionel J. Picton, of Holmes Chapel, read a paper on a suggested scheme of medical benefit under an Insurance

Act. The lecturer was cordially thanked for the trouble he had taken in propounding the scheme. At the close of the meeting Mr. William Coates, vice-chairman, asked all country members to become apostles of the Union.

Medical News.

SOCIETY OF APOTHECARIES OF LONDON.—At examinations held in March the following candidates passed in the subjects indicated:—

Surgery.—W. G. Fraser (Sections I. and II.), McGill; J. Leach (Sections I. and II.), Manchester; and P. McGinnis (Sections I. and II.), Dublin.
Medicine.—H. Cox (Section I.), Birmingham; J. Leach (Sections I. and II.), Manchester, M. J. E. R. Le Dentu (Section II.), Bordeaux; G. Meyer (Section II.), Graz; and R. A. Robinson, Liverpool.
Forensic Medicine.—W. G. Fraser, McGill; and J. Leach, Manchester.
Midwifery.—W. G. Fraser, McGill; W. C. Himely, Paris; and J. Leach, Manchester.
The diploma of the Society was granted to the following candidates, entitling them to practise medicine, surgery, and midwifery: W. G. Fraser, J. Leach, M. J. E. R. Le Dentu, and G. Meyer.

UNIVERSITY OF LIVERPOOL.—At examinations held in March the following candidates were successful:—

DEGREES OF M.B. AND CH.B.

Second Examination.—Part A.: H. G. Bywater, B. J. Doyle, J. J. K. Pentony and R. Rimmer. Part B.: G. D. Harding and B. Williams.
Final Examination.—Part I.: Maud E. Bateman, F. A. Belam, R. W. Gemmell, A. V. Glendenning, E. B. Marsh, A. C. Mooney, and H. S. Pemberton. Part II.: D. H. Clarke and Kate M. Cowe. Part III.: Ethel M. Baker, R. C. Crooke, A. A. Dear, I C. Edwards, T. B. Evans, N. P. Laing, J. Loudon (Second-class Honours), G. W. Mooney, H. Pierce, H. G. Roberts, and J. A. Tobin.

DEGREE OF B.D.S.

Second Examination.—Part I.: D. C. Grundy, A. E. Meeson, and W. A. Williams.—Part II.: D. C. Grundy and W. A. Williams.
Final Examination.—F. C. Wilkinson (Second-class Honours).

DIPLOMA IN DENTAL SURGERY.

Second Examination.—H. O. Sumerling, W. H. Taylor, and B. Wren.
Third Examination.—E. T. Haworth.
Final Examination.—P. G. Capon, R. N. Lee, and W. Williams.

DIPLOMA IN VETERINARY HYGIENE.

T. Craig and G. G. Howard.

FOREIGN UNIVERSITY INTELLIGENCE.—*Bonn:* Dr. Walter Cappelle has been recognised as *privat-docent* of Surgery; Dr. Walter Friedboes as *privat-docent* of Dermatology; and Dr. Arthur Seitz as *privat-docent* of Hygiene.—*Breslau:* Dr. Paul Heinrichsdorff has been recognised as *privat-docent* of General Pathology and Pathological Anatomy.—*Clausenburg:* Dr. Desider Veszpremi, *privat-docent* of Pathological Anatomy, has been granted the title of Extraordinary Professor.—*Heidelberg:* Dr. Ludwig Arnsperger, of Carlsruhe, has been granted the title of Extraordinary Professor.—*Königsberg:* Dr. Alfred Nissle has been recognised as *privat-docent* of Bacteriology.—*Munich:* Dr. Hermann Dürck, chief of the Pathological Institute of the Isar Hospital, has been appointed by the Government of Brazil to go out and organise a Pathological Institute, and the Munich municipal authority has granted him leave of absence for that purpose. Dr. Hans Fischer has been recognised as *privat-docent* of Medicine.—*Pisa:* Dr. Giuseppe Mazza, of Modena, has been appointed to the chair of Dermatology.—*Prague (Bohemian University):* Dr. Ottokar Lescher has been recognised as *privat-docent* of Ophthalmology.—*Strasburg:* Dr. Paul Mulzer has been recognised as *privat-docent* of Dermatology; and Dr. Dold as *privat-docent* of Hygiene and Bacteriology.—*Turin:* Dr. Pietro Biardi, of Genoa, has been appointed to the chair of Ophthalmology.

MEDICAL SICKNESS AND ACCIDENT SOCIETY.—The usual monthly meeting of the executive committee of the Medical Sickness, Annuity, and Life Assurance Society was held at 429, Strand, London, W.C., on March 15th, Dr. F. de Havilland Hall being in the chair. The accounts presented showed that the business of the society was progressing favourably. The number of sickness claims received was, as usual at this time of the year, rather large, but as they are nearly all of very short duration the amount disbursed for them was not larger than is expected at this season. The committee examined the report for the year 1911. It is an excellent record and shows that the business of last year was exceptionally good, producing a considerable addition to the invested reserves. These now amount to over £250,000. Prospectuses and all further particulars may be obtained on application to Mr. F. Addiscott, secretary, Medical Sickness and Accident Society, 33, Chancery-lane, London, W.C.

THE University of Glasgow proposes to confer the honorary degree of Doctor of Laws upon, among others, Sir Hector C. Cameron, emeritus professor of clinical surgery in Glasgow University, and Dr. Donald J. Mackintosh, medical superintendent of Glasgow Western Infirmary.

LIVERPOOL EDUCATION COMMITTEE.—The Liverpool education committee recently adopted a recommendation to the city council in support of a school clinic scheme for specific diseases for a year, and referred to a subcommittee a motion to report on the suggested establishment, either at Fazakerley or Allerton, of an open-air school for consumptives.

WESTERN OPHTHALMIC HOSPITAL, MARYLEBONE, W.—Mr. Reginald Carter, in presiding over the annual meeting of the supporters of this hospital, announced that the financial position was most serious. During the past three years there had been deficits amounting to £1000, and the amount owing to the bankers was close upon £3000. The committee was, however, determined to leave no stone unturned to improve matters, and begged for the coöperation of the charitable public in carrying on a work of such supreme importance. Mr. H. A. Dunn, the secretary, had resigned after 14 years' service, and the committee had invited Mr. H. W. Burleigh, secretary of the Hospital for Epilepsy and Paralysis, &c., Maida Vale, to assist them in reorganising the administration of the Western Ophthalmic Hospital, and had appointed him honorary secretary of the hospital for this purpose.

LEEDS GENERAL INFIRMARY: ANNUAL MEETING.—The 144th annual meeting of the General Infirmary at Leeds was held on March 14th, under the chairmanship of Mr. Charles Lupton, who for many years has held the position of honorary treasurer and chairman of the weekly board. There was a good attendance of the subscribers and of the general public, and Mr. Lupton's account of the work of the institution during the 12 months dealt with in the annual report was full of interest, while his expressions of hope as to future developments were encouraging to all the members of the staff, who, while proud of the position of the infirmary among the charitable and teaching institutions of the country, are none the less fully aware of the urgent need for an increase in the accommodation and for greater facilities for conducting the work of some of the departments. It was pointed out that owing to the destructive fire which occurred towards the end of 1910, a fire which put no less than 94 beds out of action, there had been great difficulty in coping with the work. Many beds had been found room for in small rooms which the force of circumstances had converted into wards, but an inevitable diminution in the number of patients treated within the walls of the infirmary had to be noted. This decrease amounted to 370, the total number of admissions being 7124 as compared with 7494 for the previous year. The total number of in-patients amounted to 7524. Though the total number of out-patients showed a slight decrease the actual number of attendances was increased by about 13,000 and amounted to 217,034. Mr. Lupton commented on the increase of the work in the X ray department and on the development of the department of bacteriology and of clinical pathology. Turning to the financial side of the report, things were not so satisfactory. The total expenditure was £3000 in excess of the total income, and had it not been for some £12,000 received in legacies the deficiency would have been by so much greater. Legacies must of necessity be an irregular source of income and could not be relied on. The subscriptions to the King Edward memorial fund amounted to £110,000, and as the original sum mentioned had been £150,000 there was still a sum of £40,000 to be collected. Mr. Lupton again took occasion to impress on those at the meeting that the original sum mentioned was a minimum without which a comprehensive scheme of reconstruction and of extension could not be carried out. He pointed out that an essential part of the scheme was the purchase of land adjoining the infirmary to admit of the necessary buildings, and he was able to say that practically all the necessary land had been acquired. As regards the reconstruction of the infirmary, that was going on steadily; ward after ward was being completely overhauled,

the sanitary arrangements and the heating and lighting being made more efficient.

UNIVERSITY OF BRISTOL: COLSTON SOCIETY.—The subscriptions in connexion with the thirteenth annual dinner of this society held last January, when Sir Arthur Quiller-Couch was principal guest and Sir Isambard Owen president, amounted to £464 10*s*. In February, 1911, the committee of the society handed £900 to the University of Bristol for the furtherance of research, and it has been decided to contribute another £450 to the same object. The society has collected almost £7000 for the encouragement of university education since its foundation in 1900.

LEWES SCHOOL CHILDREN.—The importance and value of the medical inspection of children are gradually being realised by parents in those few places where objections have been raised to attend the inspections and to take any steps to remedy the defects. Lewes, the county town of Sussex, was one of those places where the percentage of objections was high, but the figure has now dropped to 10·9 per cent. No fewer than 800 children in the schools of the town are suffering from some degree of caries of the teeth, and as the magnitude of the work has surpassed the efforts of the existing voluntary agencies a school dentist is to be appointed.

UNIVERSITY OF LIVERPOOL: RETIREMENT OF PROFESSOR DONNAN.—Much regret has been expressed at the retirement from the staff of professors at the University of Professor Donnan, who is to be congratulated upon his appointment as professor of chemistry at University College, London. Professor Donnan has held the chair of physical chemistry in Liverpool since its foundation in the year 1903. In the intervening period he has published the results of researches which have made his name so well known in the field of science; he has received the Fellowship of the Royal Society, and is very popular with his colleagues and his students. The appointment of a successor will be a matter of great responsibility to the Council of the University. As the successor to Sir William Ramsay at University College, Professor Donnan succeeds to a great tradition which, it is felt in Liverpool, he will worthily uphold.

LONDON (ROYAL FREE HOSPITAL) SCHOOL OF MEDICINE FOR WOMEN (UNIVERSITY OF LONDON).—The council has received the sum of £1500 from an anonymous donor to clear off the debt upon the building. It has also received from Mr. H. M. Phipson the sum of £100 to endow a prize in pharmacology in memory, and to bear the name, of the late Dr. Edith Pechey Phipson. The Gilchrist studentship for women of £100 has been awarded by the University of London to Miss Cicely M. Peake, M.B., B.S. Lond., a former student of the school. The St. Dunstan's Medical Exhibition, value £60 per annum for three or five years, and the School Scholarship, value £30, will be awarded on the result of an examination to be held on May 28th and following days. Forms of entry must be sent to the secretary of the school, from whom all particulars can be obtained, before May 20th.

WEST LONDON MEDICO-CHIRURGICAL SOCIETY.—A special meeting of this society will be held, to consider the subject of Rheumatoid Arthritis, on Friday, April 12th, at 8 P.M., at the West London Hospital, W. The following is to be the programme of arrangements: From 8 to 9 P.M. there will be an exhibition of—1. Cases, illustrating (i.) causation, (ii.) joint lesions, (iii.) trophic lesions, (iv.) skin affections, (v.) eye affections, (vi.) diagnosis from—(*a*) tuberculous joints, (*b*) neuropathic joints, (*c*) osteo-arthritic conditions, (*d*) gonococcal arthritis, (*e*) syphilitic arthritis. 2. Skiagrams, illustrating (i.) changes in cartilage, (ii.) changes in bone, and (iii.) deformity. 3. Museum specimens, illustrating (i.) lesions of cartilage, (ii.) lesions of bone, and (iii.) lesions of soft tissue. 4. Bacteria, illustrating (i.) oral sepsis, (ii.) alimentary infection, and (iii.) genital infection. From 9 to 9.45 P.M. there will be short papers and demonstrations, and from 9.45 to 10.30 P.M. a general discussion. The following, among others, have promised to take part in the proceedings: The President (Mr. W. McAdam Eccles), Dr. F. J. Poynton, Dr. T. J. Horder, Dr. Reginald Morton, Mr. Lloyd Williams, Mr. W. J. Midelton, Dr. Bernstein, and Dr. F. S. Palmer. Members and visitors are invited to attend at 8 P.M., as the time for exhibition of cases, &c., is limited.

Parliamentary Intelligence.

Inebriates Bill.

THE terms of the Inebriates Bill recently introduced in the House of Commons by Mr. ELLIS GRIFFITH, supported by the Home Secretary, have been published. The object of the Bill is to consolidate and amend the law relating to inebriates. Part I. deals with provisions as to inebriates not guilty of offences, and includes clauses relating to voluntary submission to restrictions, compulsory orders of committal to retreats, and provisions as to retreats. Part II. is concerned with provisions as to inebriates guilty of offences. This covers the punishment of offences by inebriates and inebriate reformatories. Part III. is general.

HOUSE OF COMMONS.

WEDNESDAY, MARCH 20TH.

Deaths from Uncertified Causes.

Mr. GEORGE GREENWOOD asked the President of the Local Government Board to state the number of deaths of which the causes were not certified in England and Wales in each of the five years 1907 to 1911, inclusive.—Mr. BURNS wrote in reply: The numbers of deaths from uncertified causes are as follows: 1907, 7596; 1908, 7477; 1909, 7021; 1910, 6658; 1911 (provisional), 6666. The term "uncertified cause" here signifies a cause of death not certified either by a registered medical practitioner or by a coroner after inquest.

Vaccination and Small-pox.

Mr. COURTHOPE asked the President of the Local Government Board whether he had received communications from boards of guardians with reference to the danger to the community of an outbreak of small-pox, owing to the increasing tendency of parents to procure exemption from vaccination for their children; and what steps he proposed to take in the matter.—Mr. BURNS furnished the following written reply: The guardians of the Wirral union passed a resolution expressing the view indicated in the question, and sent a copy of the resolution to the other boards of guardians in England and Wales. About 80 of the other boards, some 650 in number, have informed me that they have passed a similar resolution. I do not at present think it necessary to take any steps in the matter.

The Headquarters of London University.

Sir PHILIP MAGNUS asked the Prime Minister whether the Government had appointed a trustee or trustees in connexion with the proposal for providing a site in Bloomsbury for the headquarters of the University of London, and whether the Senate of the University had been informed of the proposal and had expressed any opinion thereon.—Mr. ASQUITH replied: The Government have not appointed a trustee or trustees for the purposes described. A body of trustees is, however, being constituted, one of whom is a member of the Government, to receive gifts offered in connexion with the recommendations of the fourth report of the Royal Commission on University Education in London. A generous gift has been made on condition that a particular site is acquired. The question of its suitability is one affecting the future organisation of the University, a matter on which the Senate has found itself unable to offer any evidence to the Royal Commission.

Sir PHILIP MAGNUS: May I ask the right honourable gentleman to answer the last part of my question?—Mr. ASQUITH: I said that the Senate has found itself unable to offer any evidence to the Royal Commission.

Sir PHILIP MAGNUS: May I take it that the Senate has not been consulted?—Mr. ASQUITH: The honourable gentleman must draw his own conclusions.

THURSDAY, MARCH 21ST.

Inspectors of Boarded-out Children in Ireland.

Mr. BIRRELL (Chief Secretary to the Lord Lieutenant for Ireland), in replying to a question put by Captain CRAIG respecting the religion of the inspectors of boarded-out children in Ireland, said that a lady inspector had been recently appointed an Insurance Commissioner. The Local Government Board for Ireland were anxious for many reasons that this vacancy should be filled by a fully qualified lady doctor, but neither of the Protestant lady doctors who were candidates considered that the salary offered was sufficient to induce them to accept the position.

Registration of Apothecaries' Assistants.

Captain CRAIG asked the Secretary of State for the Home Department whether, in view of the date of the National Insurance Act coming into force, he would state what steps had been taken in conjunction with the Pharmaceutical Society to frame by-laws under Clause 4 (b) of the Pharmacy Act, 1908, for the registration of Army compounders and apothecaries' assistants as chemists.—Mr. MACKENNA answered: I am informed that the Pharmaceutical Society is in communication with the War Office as regards qualified military dispensers and that the question of certified assistants to apothecaries is also receiving the Society's active consideration.

The Report of the Vivisection Commission.

Dr. CHAPPLE asked the Secretary of State for the Home Department whether he would give the cost of the Commission on Vivisection; and whether he would consider the advisability, in future reports, of abstracts of evidence giving the substance only instead of verbatim reports of question and answer being printed, and of the whole being done up in octavo size and book form.—Mr. MCKENNA replied: The expenditure has amounted to about £5674. I fear that mere abstracts of the evidence would not have satisfied the persons and societies who are keenly interested in the subject of vivisection. The question of printing reports is mainly one for the Stationery Office, but I may point out that the number of volumes would be greatly increased if the use of the existing double-columned foolscap page were discontinued.

The Adulteration of Flour.

Sir JOHN LONSDALE asked the President of the Local Government Board whether, having regard to the practice which prevailed of adulterating flour by the addition of various deleterious substances in the process of manufacture, he would direct the special attention of the responsible authorities to the provisions of Section 3 of the Sale of Food and Drugs Act, 1875, with a view to the prosecution of offenders.—Mr. BURNS said, in reply: The question of the adulteration of flour is now under consideration, and I am not at present in a position to state what steps will be taken. The publication of the answer which was recently given to the honourable Member will have drawn attention to the section referred to.

Sir JOHN LONSDALE: The right honourable gentleman has had the matter under consideration fully 12 months.—Mr. BURNS: No longer than is necessary.

Sir JOHN LONSDALE: How much longer will the right honourable gentleman require? I do not wish an evasive answer.

The SPEAKER: No doubt the right honourable gentleman has given the best answer he can.

MONDAY, MARCH 25TH.

Medical Treatment of School Children.

Mr. HAYES FISHER asked the President of the Board of Education whether the sum of £60,000, included in the estimates of the Board of Education under the head of grants towards the expenses of local authorities in respect of medical treatment of school children and services ancillary thereto, represented the full extent of the grant to be given in the year 1912-13 towards the expenses incurred by local authorities in England and Wales for medical inspection and treatment of school children; whether it was proposed to limit the assistance given by the imperial Exchequer to the optional service of medical treatment, leaving local authorities to bear the whole of the compulsory burden of medical inspection; whether he was now prepared to indicate the basis on which the new grant would be distributed; and whether, in allocating the grant, he would take into account the money already expended by a local authority.—Mr. PEASE replied: The answer to the first part of the question is in the affirmative, but the amount to be made ultimately available for the purposes referred to will be considerably in excess of the sum provided in the estimates for the year 1912-13. The answer to the second part of the question is also in the affirmative. In answer to the third part of the question, I hope to be able to issue in a few days' time the regulations under which the grant will be paid, and an explanatory circular. With regard to the last part of the question, in allocating the grant the expenditure of the local education authorities during the previous year will be taken into account.

Medical Benefits.

Mr. CASSEL asked the Secretary to the Treasury when a member of an approved society attained the age of 70 and ceased to pay contributions, would the society still be liable to make the same payments or any payments in respect of such member to the Insurance Committee to provide medical benefits; if not, from what source would the doctor and chemist be paid for medical benefit for such member.—Mr. MASTERMAN answered: The payments made by an approved society to an Insurance Committee for medical benefit will be made on account of all the members of a society and not of any particular member. They will be paid out of the funds of the society as built up by the contributions made in respect of all the members and the reserves accumulated in respect of them.

Preservatives in Cream.

Mr. STANIER asked the President of the Local Government Board whether he would consent to such modifications in the draft regulations for the restriction of the use of preservatives in cream as to provide that the labelling proposals in the regulations could be so modified as to be made commercially workable.—Mr. BURNS answered: The Local Government Board are prepared to receive and consider any representations concerning the proposals in the draft regulations.

Mr. STANIER further asked the right honourable gentleman whether he could see his way to delay the operation of the proposed draft regulations as to preservatives in cream for a month, in order that opportunity might be given to the interested persons to discuss such modifications of the regulations as would enable them to be carried into effect without detriment to the supply to the public of the articles referred to in the regulations.—Mr. BURNS said, in reply: Under the Rules Publication Act, 1893, the Board is required to consider any representations or suggestions which are made in writing by any public body interested before the order is finally settled. Notice of the intention to make regulations was published in the *London Gazette* of Feb. 20th, and the statutory period for the making of such representations or suggestions is 40 days from that date.

TUESDAY, MARCH 26TH.

The Sanitary Commissioner to the Government of India.

Mr. HOGGE asked the Under Secretary of State for India whether there was any intention to appoint a separate Sanitary Commissioner to the Government of India, or whether it was intended to continue the temporary arrangement whereby the Director-General of the Medical Service was at present doing the work in addition to his own.—Mr. MONTAGU answered: The reply to the first question is in the affirmative. Certain questions regarding the functions and position of the Sanitary Commissioner are under consideration. As soon as they are decided the appointment will be made.

The Definition of Vinegar.

Mr. CHARLES BATHURST asked the President of the Local Government Board whether there was in his department any definition or standard of vinegar, based either upon the substances from which it was manufactured or upon the percentage of acetic acid which it contained; and whether, in the absence of a due percentage of the above acid, prosecutions of its vendors under the Food and Drugs Act were authorised by the Board.—Mr. BURNS replied: There is no statutory definition of vinegar for the purposes of the Sale of Food and Drugs Acts, but, in view of the numerous representations made to it on the subject, the Board stated its views as to the proper significance of the terms "vinegar," "malt vinegar," and "artificial vinegar" in a letter addressed to the secretary of the London and County Vinegar Brewers' Association on Dec. 15th last. The Board has no power to authorise prosecutions under the Sale of Food and Drugs Acts.

Workmen's Medical Funds.

Mr. RICHARDS asked the Secretary to the Treasury whether he had received an application from the workmen's medical funds of Monmouthshire that a representative acquainted with workmen's medical funds should be appointed upon the advisory board of the National Insurance Act Commissioners; and whether he proposed to grant such representation.—Mr. MASTERMAN wrote in reply: The answer to both parts of the question is in the affirmative.

WEDNESDAY, MARCH 27TH.

The Adulteration of Flour.

Sir JOHN LONSDALE asked the President of the Local Government Board whether, having regard to the fact that it had been established by departmental investigation that the adulteration of flour by the addition of various deleterious substances was largely practised by millers, and the matter had been under his consideration for more than a year, he could now state when he expected to be in a position to announce the steps to be taken to put a stop to this practice in the public interests.—Mr. BURNS said in reply: I have received a number of deputations on this subject since the reports were issued from my Foods Department last year, and the matter has been carefully considered by my expert advisers from all points of view. As a result, I have come to the conclusion that in some respects the matter can be adequately dealt with by the ordinary law against adulteration. I am, however, still considering whether it may not be possible to deal with some of the practices to which the honourable baronet refers by regulations under the Public Health (Regulations as to Food) Act, 1907.

BOOKS, ETC., RECEIVED.

ALLEN, GEORGE, AND COMPANY, LIMITED, Ruskin House, 44 and 45, Rathbone-place, London, W.

Is the Mind a Coherer. By L. G. Sarjant. Price 6*s.* net.

The Drama of Love and Death. A Study of Human Evolution and Transfiguration. By Edward Carpenter, Author of "The Art of Creation," "Towards Democracy," &c. Price 5*s.* net.

ARNOLD, EDWARD, London. (LONGMANS, GREEN, AND CO., New York.)

International Medical Monographs. General Editors: Leonard Hill, M.B., F.R.S., and William Bulloch, M.D. Caisson Sickness and the Physiology of Work in Compressed Air. By Leonard Hill, M.B., F.R.S. Price 10*s.* 6*d.* net.

BAILLIÈRE, TINDALL, AND COX, London.

A Surgical Treatment of Locomotor Ataxia. By L. N. Denslow, M.D., Fellow, New York Academy of Medicine; late Physician, Diseases of the Skin (Out-patients), Bellevue Hospital, New York; late Professor, Genito-urinary Surgery and Venereal Diseases, St. Paul Medical College, Minnesota. Price 3*s.* 6*d.* net.

BALE (JOHN), SONS, AND DANIELSSON, LIMITED, London.

On Gastroscopy: With a Description of a New, Easy, and Efficient Method of Œsophago-Gastroscopy, combining Direct and Indirect Vision; and a Plea for its Employment by Gastric Experts. By William Hill, B.Sc., M.D. Lond., Surgeon for Diseases of the Throat, Nose, and Ear, St. Mary's Hospital, London. Vice-President of the Laryngological Section of the Royal Society of Medicine. Price 3*s.* 6*d.* net.

BELL, G., AND SONS, LIMITED, London.

Psyche and Other Poems. By Augustus H. Cook, M.B. Lond., late Senior Surgeon, Hampstead General Hospital, Fellow of the Royal Society of Medicine. Price 2*s.* 6*d.* net.

BLAKISTON'S SON (P.) AND CO., Philadelphia. (H. K. LEWIS, London.)

Honan's Handbook to Medical Europe. A Ready Reference Book to the Universities, Hospitals, Clinics, Laboratories, and General Medical Work of the Principal Cities of Europe. By James Henry Honan, M.D., Rush Medical College (University of Chicago), M.D., Imperial Frederich Wilhelm University of Berlin; Honorary President and formerly Active President of the Anglo-American Medical Association in Berlin. With Maps of Berlin, Edinburgh, London, and Paris. Price 6*s.* net.

DOUGHERTY, J. T., New York. (H. K. LEWIS, London.)

On the Physiology of the Semi-Circular Canals and their Relation to Seasickness. By Joseph Byrne, A.M., M.D., LL.B. Price 12*s.* 6*d.* net.

EWART, SEYMOUR, AND CO., LIMITED, 12, Burleigh-street, London, W.C.

My System. 15 Minutes' Work a Day for Health's Sake. By J. Muller, Ex-Lieutenant of Engineers in the Danish Army. With Cinematograph Illustrations and a Time Table. Specially revised by the Author and translated by G. M. Fox-Davies and H. R. Murray. Price 2*s.* 6*d.* net.

JACK, T. C. AND E. C., 67, Long Acre, London, W.C.; and Edinburgh.

Cooking for Invalids in Home and Hospital. By Florence B. Jack. A new edition, revised and enlarged. Price 2*s.* net.

KNIGHT, CHARLES, AND CO., LIMITED, 227-239, Tooley-street, London, S.E.

The Housing, Town Planning, &c., Act, 1909 (9 Edw. VII. Ch. 44), with Incorporated Provisions of the Housing Acts, and all Orders issued by the Local Government Board, together with full Explanatory Notes and Index. Third Edition. By William A. Casson, Barrister-at-Law of the South-Eastern Circuit, Author of "Annotated Model Bye-laws" (7th Edition), the "Education Act, 1902," and other works. Price not stated.

LANCET-CLINIC (THE) PUBLISHING COMPANY, Cincinnati, Ohio, U.S.A.

The Friends of the Insane, the Soul of Medical Education, and other Essays. By Bayard Holmes, M.D., Chicago. Price, cloth, $1.00.

LEWIS, H. K., London.

The Care of Infants and Young Children in Health. By Mildred M. Burgess, M.D. Lond. Second edition. Price 1*s.* net.

MACMILLAN COMPANY, THE, New York. (MACMILLAN AND CO., LIMITED, London.)

Principles of Human Nutrition. A Study in Practical Dietetics. By Whitman H. Jordan, Director of the New York Agricultural

Experiment Station; author of "The Feeding of Animals." Price 7s. 6d. net.

Deformities, including Diseases of the Bones and Joints. A Text-book of Orthopædic Surgery. By A. H. Tubby, M.S. Lond., F.R.C.S. Eng., Surgeon to, and in Charge of, the Orthopædic Department, Westminster Hospital, and Lecturer on Clinical and Orthopædic Surgery in the Medical School. Second edition. In two volumes. Price 45s. net.

MACMILLAN AND CO., LIMITED, London.

Spices. By Henry N. Ridley, M.A., C.M.G., F.R.S., F.L.S., Director of Botanic Gardens, Straits Settlements. Price 8s. 6d. net.

Milk and the Public Health. By William G. Savage, B.Sc., M.D. Lond., D.P.H., County Medical Officer of Health, Somerset; late Medical Officer of Health and Public Analyst, Colchester. Price 10s. net.

MCDOUGALL'S EDUCATIONAL COMPANY, LIMITED, 8, Farringdon-avenue, London, E.C., and Edinburgh.

Talks on Health and Temperance. Price 7d. net.

METHUEN AND CO., LIMITED, 36, Essex-street, London, W.C.

Bacteria as Friends and Foes of the Dairy Farmer. By Wilfrid Sadler, Lecturer on Theory of Dairying, Assistant Instructor in Dairying, Demonstrator in Dairy Bacteriology, the Midland Agricultural and Dairy College, Kingston, Derby. Price 1s. 6d.

MOSBY (C. V.) COMPANY, St. Louis, U.S.A. (KEENER, GEORGE, AND COMPANY, 16A, Red Lion-square, London, W.C.)

Practical Electro-therapeutics and X-Ray Therapy. With Chapters on Phototherapy, X-Ray in Eye Surgery, X-Ray in Dentistry, and Medico-legal Aspect of the X-Ray. By J. M. Martin, M.D., Professor of Electro-therapeutics and X-Ray Methods in the Medical Department of Baylor University, in the Medical Department of Southwestern University, and in the State Dental College, Dallas, Tex. Price 18s. net.

ROUTLEDGE, GEORGE, AND SONS, LIMITED, London. (DUTTON, E. P., AND CO., New York.)

Nursery Rhymes. Illustrated by F. M. Wildish. Price 3s. 6d.

SAUNDERS (W. B.) COMPANY, Philadelphia and London.

A Handbook of Practical Treatment. By Many Writers. Edited by John H. Musser, M.D., LL.D., Professor of Clinical Medicine in the University of Pennsylvania, Philadelphia; and A. O. J. Kelly, A.M., M.D., late Assistant Professor of Medicine in the University of Pennsylvania, Philadelphia. Volume III. Price 75s. net per set of three volumes.

SMITH, ELDER, AND CO., 15, Waterloo-place, London, S.W.

Men and Measures. A History of Weights and Measures, Ancient and Modern. By Edward Nicholson, F.I.C., F.C.S., Surgeon-Lieutenant-Colonel, Army Medical Department, Author of "A Manual of Indian Ophiology," "The Story of Our Weights and Measures," "Floureto de Prouvençe," &c. Price 7s. 6d. net.

THIEME, GEORG, Leipzig.

Zwei Jahre Salvarsantherapie. Herausgegeben von P. Ehrlich, F. Kraus, A. v. Wassermann. Redaktion: Fr. Keysser. Sonderabdruck aus der Zeitschrift für Chemotherapie und Verwandte Gebiete. Price not stated.

TORCH PRESS, THE, Cedar Rapids, Iowa, U.S.A.

A Manual of Poisonous Plants. Chiefly of Eastern North America, with Brief Notes on Economic and Medicinal Plants and Numerous Illustrations. By L. H. Pammel, Ph.D., Professor of Botany, Iowa State College Agriculture and Mechanic Arts. Price $7.50 net.

WILEY, JOHN, AND SONS, New York. (CHAPMAN AND HALL, LIMITED, London.)

The Orientation of Buildings or Planning for Sunlight. By William Atkinson, Fellow of the Boston Society of Architects. First Edition. First Thousand. Price, cloth, $2.00 net (8s. 6d. net).

WITHERBY AND CO., 326, High Holborn, London, W.C.

Filariasis and Elephantiasis in Fiji. Being a Report to the London School of Tropical Medicine. By P. H. Bahr, M.A., M.B., B.C., D.T.M. & H. Cantab., M.R.C.S. Eng., L.R.C.P. Lond. With many Coloured and Monochrome Plates, Numerous Charts and a Map. (Supplement No. 1 of the Journal of the London School of Tropical Medicine.) Price 6s. net.

YEAR-BOOK PRESS, THE, 31, Museum-street, London, W.C.

The Public Schools Year-Book. The Official Book of Reference of the Headmasters' Conference. Twenty-third Year of Publication. 1912. Edited by H. F. W. Deane, M.A., F.S.A., Trin. Coll. Camb., Librarian to the Dean and Canons of St. George's, Windsor Castle, and W. A. Evans, M.A., of the Inner Temple, Barrister-at-Law, Secretary to the Headmasters' Conference. Price 3s. 6d. net.

The Schoolmasters' Year-book and Directory, 1912. Price 12s. 6d. net.

Appointments.

Successful applicants for Vacancies, Secretaries of Public Institutions, and others possessing information suitable for this column, are invited to forward to THE LANCET *Office, directed to the Sub-Editor, not later than 9 o'clock on the Thursday morning of each week, such information for gratuitous publication.*

ADAM, THOMAS, M.D. Glasg., has been appointed Medical Officer of Health of Stirlingshire.

BERRIDGE, W. R. M., M.R.C.S., L.R.C.P. Lond., has been appointed Certifying Surgeon under the Factory and Workshop Acts for the Narborough District of the county of Leicester.

CAMPBELL, ROBERT, F.R.C.S. Eng., has been appointed Surgeon to the Royal Victoria Hospital, Belfast.

CARR, T. E. ASHDOWN, M.B., B.S. Lond., has been appointed Ophthalmic Surgeon to the Derbyshire County Council (Education Committee).

DOWZER, T., L.R.C.P. & S. Irel., has been appointed Casualty House Surgeon at the Radcliffe Infirmary and County Hospital, Oxford.

JOLL, C. A., F.R.C.S. Eng., M.B., M.S. Lond., has been appointed Senior Resident Medical Officer at the Royal Free Hospital.

MOSS, B. W., M.B. Lond., has been appointed Certifying Surgeon under the Factory and Workshop Acts for the Lutterworth District of the county of Leicester.

PIERREPONT, E. SPENCER, L.D.S. R.C.S. Eng., has been appointed Dental Surgeon to the Prince of Wales's General Hospital, Tottenham, N.

STEVENSON, HOWARD, F.R.C.S. Irel., has been appointed Assistant Surgeon to the Royal Victoria Hospital, Belfast.

WALSHAM, HUGH, M.D. Cantab., F.R.C.P. Lond., has been appointed Consulting Physician to the X Ray Department of the Eltham and Mottingham Cottage Hospital.

Vacancies.

For further information regarding each vacancy reference should be made to the advertisement (see Index).

ABERDEEN, KINGSEAT ASYLUM.—Assistant Medical Officer. Salary £150 per annum, with board, &c.

AGRA, UNITED PROVINCES, INDIA, DUFFERIN HOSPITALS AND FEMALE MEDICAL SCHOOL.—Female Senior Doctor. Salary £26 13s. 4d. per mensem, with free quarters.

ALBERT DOCK HOSPITAL, Connaught-road, E.—Senior House Surgeon. Salary £100 per annum, with board, residence, and washing. Also House Surgeon. Salary £50 per annum, with board, residence, and washing. Each for six months.

AYR DISTRICT ASYLUM.—Junior Assistant Physician. Salary £140 per annum, with board, lodging, and laundry.

BETHLEM HOSPITAL.—Two Resident House Physicians, unmarried, for six months. Salary at rate of £25 each per quarter, with apartments, board, and washing.

BIRMINGHAM AND MIDLAND EYE HOSPITAL.—Second and Third House Surgeons. Salaries £80 and £75 per annum respectively, with board, rooms, and laundry.

BIRMINGHAM AND MIDLAND HOSPITAL FOR SKIN AND URINARY DISEASES.—Clinical Assistant. Salary at rate of 52 guineas per annum.

BOLINGBROKE HOSPITAL, Wandsworth Common, S.W.—House Surgeon. Salary £75 per annum, with board and residence.

BRADFORD CHILDREN'S HOSPITAL.—House Surgeon. Salary £100 per annum.

BRENTWOOD, ESSEX COUNTY ASYLUM.—Assistant Medical Officer. Salary £150 per annum, with board, &c.

BRIGHTON, HOVE, AND PRESTON DISPENSARY.—Resident Medical Officer, unmarried. Salary £160 per annum, with rooms, coals, gas, and attendance.

BRISTOL EYE HOSPITAL.—House Surgeon. Salary £80 per annum, with board and residence.

BRISTOL GENERAL HOSPITAL.—House Physician for six months. Salary £80 per annum, with board, residence, &c.

BUXTON, DERBYSHIRE, DEVONSHIRE HOSPITAL.—Pathologist. Salary at rate of £250 per annum.

CARLISLE NON-PROVIDENT DISPENSARY.—Resident Medical Officer. Salary £150 per annum, with apartments.

CENTRAL LONDON THROAT AND EAR HOSPITAL, Gray's Inn-road.—Honorary Assistant Surgeon.

CHELTENHAM GENERAL HOSPITAL.—House Physician, unmarried. Salary £80 per annum, with board, lodging, and washing.

CHESTER GENERAL INFIRMARY.—House Physician. Salary £90 per annum, with residence and maintenance.

COVENTRY AND WARWICKSHIRE HOSPITAL, Coventry.—House Physician. Salary £90 per annum, with rooms, board, washing, and attendance.

DARLINGTON HOSPITAL AND DISPENSARY.—House Surgeon, unmarried. Salary £120 per annum, with board, lodging, and laundry.

DERBYSHIRE EDUCATION COMMITTEE.—Third Assistant School Medical Officer. Salary £250 per annum.

DREADNOUGHT HOSPITAL, Greenwich.—Two House Physicians and Two House Surgeons, each for six months. Salary £50 per annum, with board, residence, and washing. Also Medical Registrar. Also Assistant Physician for Diseases of the Skin.

DUDLEY, GUEST HOSPITAL.—Senior Resident Medical Officer. Salary £100 per annum, with board, residence, attendance, and washing.

EAST LONDON HOSPITAL FOR CHILDREN AND DISPENSARY FOR WOMEN, Shadwell, E.—Medical Officer to the Casualty Department for six months. Salary at rate of £100 per annum, with luncheon and tea.

HEMEL HEMPSTEAD, WEST HERTS HOSPITAL.—Resident Medical Officer. Salary £100 per annum, with rooms, board, and washing.

HUNTINGDON COUNTY HOSPITAL.—Resident Medical Officer. Salary £100 per annum, with board, &c.

INVERNESS, NORTHERN INFIRMARY.—House Surgeon. Salary £100 per annum, with board, &c.

IPSWICH BOROUGH.—Assistant Medical Officer of Health. Salary £250 per annum.

KENSINGTON AND FULHAM GENERAL HOSPITAL, Earl's Court, S.W.—Physician.

LEEDS CITY INFECTIOUS DISEASES HOSPITALS AND SANATORIUM.—Two Medical Assistants, unmarried, for six and three months respectively. Salary at rate of £110 per annum, with board, lodging, and washing.

LEEDS PUBLIC DISPENSARY.—Junior Resident Medical Officer. Salary £100 per annum, with board and lodging.

LEICESTER INFIRMARY.—Assistant House Physician for six months. Salary at rate of £80 per annum, with board, apartments, and washing. Also Honorary Assistant Physician.

LIVERPOOL DISPENSARIES.—Assistant Surgeon, unmarried. Salary £100 per annum, with board and apartments.

LIVERPOOL, STANLEY HOSPITAL.—Honorary Physician and Honorary Laryngologist.

LIVERPOOL UNIVERSITY.—Chair of Pathology. Salary £500 per annum.

LONDON HOSPITAL, Whitechapel, E.—Clinical Assistant in the Aural Out-patient Department. Salary £100 per annum.

LOUGHBOROUGH AND DISTRICT GENERAL HOSPITAL AND DISPENSARY.—Resident House Surgeon. Salary £120 per annum, with rooms, attendance, board, and washing.
MACCLESFIELD GENERAL INFIRMARY.—Junior House Surgeon. Salary £80 per annum, with board and residence.
MANCHESTER CHILDREN'S HOSPITAL, Pendlebury. OUT-PATIENTS' DEPARTMENT, Gartside-street.—Honorary Dental Surgeon.
METROPOLITAN BOROUGH OF STEPNEY.—Assistant Medical Officer of Health. Salary £300 per annum.
METROPOLITAN HOSPITAL, Kingsland-road, N.E.—Pathologist and Registrar. Salary at rate of £120 per annum. Also Assistant Physician.
MIDDLESEX HOSPITAL.—Medical Registrar.
MULLINGAR DISTRICT LUNATIC ASYLUM.—Resident Medical Superintendent. Salary £400 per annum.
NEWPORT AND MONMOUTHSHIRE HOSPITAL.—House Surgeon. Salary £60 per annum, with board, residence, and laundry.
PRINCE OF WALES'S GENERAL HOSPITAL, Tottenham, N.—Senior House Physician, Junior House Surgeon, and Junior House Physician for six months. Salary of former £75 and of two latter £50 per annum, with residence, board, and laundry.
QUEEN CHARLOTTE'S LYING-IN HOSPITAL, Marylebone-road, N.W.—Physician to Out-patients.
QUEEN'S HOSPITAL FOR CHILDREN, Hackney-road, Bethnal Green, N.E.—House Surgeon. Also House Physician. Each for six months. Salary in each case at rate of £80 per annum, with board, residence, and washing.
ROYAL DENTAL HOSPITAL OF LONDON, Leicester-square.—Assistant Dental Surgeon.
ROYAL FREE HOSPITAL, Gray's Inn-road, W.C.—Male House Physician and House Surgeon for six months. Also Female House Physician and Female House Surgeon. Also Female Senior Obstetric Assistant. Salary £50 per annum. Also Female Junior Obstetric Assistant. Board, lodging, and washing provided in each case.
ST. JOHN'S WOOD AND PORTLAND TOWN DISPENSARY, 96, St. John's Wood-terrace, N.W.—Third Medical Officer.
SALFORD ROYAL HOSPITAL.—Junior House Surgeon for six months. Salary at rate of £65 per annum, with board and residence.
SHEFFIELD ROYAL INFIRMARY.—Junior Resident Medical Officer. Salary £60 per annum.
SHREWSBURY, SALOP INFIRMARY.—House Surgeon, unmarried. Salary £100 per annum, with board, washing, and residence.
SINGAPORE MUNICIPALITY INFECTIOUS DISEASES HOSPITAL, STRAITS SETTLEMENTS.—Resident Medical Officer. Salary £400 per annum, with free quarters.
SLEAFORD, LINCOLNSHIRE, KESTEVEN COUNTY ASYLUM.—Assistant Medical Officer. Salary £150 per annum, with board, &c.
STAFFORD, STAFFORDSHIRE GENERAL INFIRMARY.—House Physician. Salary £82 per annum, with board, residence, and laundry.
STOCKPORT INFIRMARY.—Junior House Surgeon. Salary £80 per annum, with board, washing, and residence.
SUNDERLAND CHILDREN'S HOSPITAL.—Resident Medical Officer for six months. Salary £80 per annum, with board, residence, and laundry.
SUNDERLAND ROYAL INFIRMARY.—Two Junior House Surgeons and House Physician for six months. Salary £80 per annum in each case, with board, residence, and laundry.
TEIGNMOUTH HOSPITAL, S. DEVON.—House Surgeon. Salary £100 per annum, with board, lodging, and laundry.
WAKEFIELD, WEST RIDING ASYLUM.—Locum Tenens Assistant Medical Officer. Salary £4 4*s.* per week, with apartments and board.
WALSALL AND DISTRICT HOSPITAL.—Senior House Surgeon. Salary £120 per annum, with board, residence, and laundry.
WEST LONDON HOSPITAL, Hammersmith-road, W.—Pathologist. Salary £150 per annum.
WOLVERHAMPTON AND STAFFORDSHIRE GENERAL HOSPITAL.—Resident Medical Officer. Salary at rate of £100 per annum, with board, rooms, and laundry.
YORK COUNTY HOSPITAL.—House Physician for six months. Salary at rate of £100 per annum, with board, residence, &c.

THE Chief Inspector of Factories, Home Office, London, S.W., gives notice of vacancies for Certifying Surgeons under the Factory and Workshop Acts at Braemar, in the county of Aberdeenshire; at Donoghmore, in the county of Down; and at Kilbeggan, in the county of Westmeath.

Births, Marriages, and Deaths.

BIRTHS.

GREENE.—On March 23rd, at Crossbrook-street, Cheshunt, the wife of W. A. Greene, M.R.C.S., of a son.
LIONEL SMITH.—On March 20th, at Neville Court, N.W., the wife of A. Lionel Smith, M.B., of a son.
NESHAM.—On March 17th, at Ellison-place, Newcastle-on-Tyne, the wife of R. A. Nesham, M.R.C.S., of a son.
SHAW.—At Healesville, Victoria, Australia, the wife of A. Eland Shaw, M.R.C.S., L.R.C.P., of a daughter.

MARRIAGES.

SMITH—BLACKSTONE.—On March 27th, George William Smith, M.B., Ch.B. Edin., to Sylvia Rose Margaret Blackstone, M.B., B.S.

DEATHS.

BAILLIE.—On March 20th, at Acacia-road, St. John's Wood, Robert Alexander Baillie, M.R.C.S., L.R.C.P.
RUSHER.—On March 22nd, James Benjamin Rusher, of Pershore, aged 61.
SATCHELL.—On March 20th, at Ascott-avenue, Ealing, W., Walter A. Satchell, J.P., F.R.C.P. Edin., M.R.C.S. Eng., in his 73rd year, after three days' illness.

N.B.—A fee of 5s. is charged for the insertion of Notices of Births, Marriages, and Deaths.

Notes, Short Comments, and Answers to Correspondents.

PUBLIC HEALTH IN BASUTOLAND.

A REPORT from the Acting Resident Commissioner of Basutoland, South Africa, on the annual Blue Book for the territory for the year ending June 30th, 1911, has been received at the Colonial Office and presented to Parliament. It states, *inter alia*, that the population, as ascertained by a Census taken in April and May last, amounted to 402,434—183,241 males and 219,193 females. The general health of the territory has been good and no epidemics of any importance have occurred. Small-pox broke out in the Quthing district, but was confined to one village. The infection was traced to the Cape Province, and steps were immediately taken to secure vaccination of those leaving the country, certificates of vaccination being demanded of those requiring passes. The important subject of leprosy has been under consideration during the past year. Suggestions for the establishment of a leper settlement were laid before a meeting of the Basutoland council; they were most favourably received, and have been generally approved by the High Commissioner for South Africa (Viscount Gladstone). The selection of a suitable site will perhaps prove difficult, but it is hoped that the question will be satisfactorily settled before long. The number of patients treated during the year in the Government hospitals and dispensaries showed a considerable increase over the previous year. The in-patients numbered 1732 and the out-patients 43,961. Of the latter 9500 attended at the dispensaries more than once. During the year the principal medical officer made a tour of inspection of the hospitals and dispensaries throughout the territory, and reported very favourably on the work done, both as regards quantity and efficiency. A small hospital has been opened at Quthing and has been much appreciated in the district.

GIVING WAY.

MR. Hamilton Spratt, who describes himself on his card as a "surgical chiropodist," has been good enough to ask our advice in a delicate professional matter occurring in his practice. He says: "I have a patient who has a split thumb-nail which won't give way to every treatment I have tried. Could someone in your medical staff advise me what to do? I enclose my card." Perhaps the nail would give way if the surgical chiropodist gave way to a medical manicurist.

DEATH FROM SEA-SICKNESS.

AN inquest was held at Newhaven on March 25th on the body of M. Constant Lecamp, a director of the Crédit Industriel de Paris, who died on a cross-Channel boat between Dieppe and Newhaven. He was accompanying his daughter to Brighton, but experiencing a very rough passage suffered severely from sea-sickness. This brought on cardiac failure, death occurring before harbour was reached. There was no medical man aboard the vessel at the time. M. Lecamp, it was stated in evidence, had been attended at home for heart affection.

THE WOMEN'S IMPERIAL HEALTH ASSOCIATION.

THE second annual report of this association for 1911 lies before us. Information concerning the association was given in our columns of March 9th, p. 701. The present report clearly indicates the excellent progress made during the past year. The Florence Nightingale and Aurora Caravans "trekked through the villages, the lecturer giving talks, cinematograph shows, and distributing leaflets, while at intervals of about a fortnight a lecturer came from London to speak in the larger towns included in the tour." A caravan was present at the Festival of Empire, and one also made a tour of the London parks, visiting each of them several times. The association has taken a house in the Kennington-road on lease for its school for mothers. A fête was held in the Royal Botanic Gardens, Regent's Park, on July 5th, under the immediate patronage of the Duke and Duchess of Argyll, Prince Alexander of Teck, and other distinguished persons. The association is agitating for free lavatory accommodation for women. The report contains also much useful hygienic information and household hints. The address of the association is 7, Hanover-square, London, W.

THE LITTLE MOTHER'S SCHOOL.

THE Little Mother's School is an institution established by the Chicago Department of Health. In 31 schools, situated in different parts of the city, a class is held once a week for young girls, where all subjects pertaining to the care and rearing of children are taught. These pupils learn of ventilation and nursery hygiene—how babies should be bathed, dressed, and fed, and how they should be cared for in their sleep. The teaching is given in the simplest terms possible, and the pupils, who already number more than 1000, have certain

opportunities of putting what they have learnt into actual practice. Two nurses are present at each class—one to speak, the other to demonstrate—and pupils are encouraged to bring materials so as to make babies' clothes at the class. The work is all under the direction of the supervising nurses of the Board of Health, School Hygiene Division. The teachers have to attend twice a week at the department headquarters so that they may themselves be taught. Already an examination has been held and the pupils have been called upon to write papers describing the instruction they have received. The following is claimed to be not an exceptional but a fair sample of the papers written by the "Little Mothers." The author is a girl, 14 years old, and she writes:—

> "Health is the condition free from pain, and normal condition of the body. No one can be healthy who does not keep himself clean. Hygiene is the science of health, and to have healthy people we must begin with the baby. Before we bath the baby we should have all the things ready. Then see if the water is not too warm. We try it by putting our elbow in; if we can stand it, it's all right for baby. Then we put towels so the baby's body does not touch the bottom of the bath tub. First of all, we wash its head and hands, then its eyes with a different piece of cotton for each eye, then its feet and body. After we have washed it well, then we take the baby out, and put him on the blankets. We dry it by patting gently, not rubbing roughly."

Apparently the lessons given consist of a counsel of perfection. Very few babies are bathed in this country with such minute care and luxurious provision of blankets and linen. Many British mothers would be more than surprised if called upon to use a fresh and separate piece of wool to wipe each of the baby's eyes. Nevertheless, having undertaken the task of teaching young girls what will be their duties as mothers, it is wise to advise the best methods. This, in any case, leaves a wider margin for those compromises that inevitably take place in the hurry of daily life between the ideal and what is conveniently practical. A somewhat meticulous course of instruction includes the teaching of how to sing a lullaby.

A NOISE-SILENCER.

Sir Ronald Ross has directed our attention to an invention called an earclip, which he made more than 20 years ago for a patient who was very susceptible to slight noises. He has now put the invention on the market with the object of helping medical men in the treatment of patients susceptible to noise. It consists of a horseshoe spring, at the ends of which are wooden studs, which press against the tragus or other part of the ears so as to close them and prevent or partly prevent noises reaching the tympanum. The springiness of the metal horseshoe allows the pressure being made greater or less as desired. The device can be worn when lying down, and it is pointed out that by its use the noises going on in hospitals, factories, offices, railway trains, and steamers, the streets of a city, or from insects in tropical climates, can be wholly or largely excluded from the auditory nerves, and the wearer can obtain comparative or complete silence, and thus be enabled to get sleep or quiet or to concentrate his thoughts on work in hand without distraction. Messrs. C. Baker, 244, High Holborn, are the manufacturers. The price of the silencer is 2*s.* 6*d.*

"*Dumpling*," a medical man, would be glad if any of our readers could, through the columns of THE LANCET, give him information concerning the pay and prospects of a lady dispenser. He wishes to know if this work provides a good opening for a girl, or whether the supply already exceeds the demand.

COMMUNICATIONS not noticed in our present issue will receive attention in our next.

A DIARY OF CONGRESSES.

WE shall publish this diary from time to time that our readers may have under their hands the dates of the approaching scientific Congresses. It is unnecessary to issue the lists of all these functions week by week, and we propose to make only such gatherings as will occur in the immediate future the subject of regular announcement. The following Congresses, Conferences, and Exhibitions are announced for March and April:—

March 23rd–April 4th (London, Royal Agricultural Hall).—International Smoke Abatement Exhibition.
April 1st and 2nd (Milan).—Italian National Convention upon the Sexual Question.
" (London).—First Congress of Pure Food and Health Society of Great Britain.
" 1st–7th (Tunis).—Twenty-second Congress of French-speaking Alienists and Neurologists.
" 8th–13th (Rome).—Seventh International Congress of Dermatology and Syphilology.
" 8th–15th (Johannesburg).—Thirteenth South African Medical Congress.
" 9th–11th (Paris).—Congress of Physiotherapy for French-speaking Physicians.
April 9th (Berlin).—Eleventh Congress of the German Society for Orthopædic Surgery.
" 9th–13th (Giessen).—Congress on Study of Families, Inheritance, and Race Hygiene.
" 10th–13th (Berlin).—Forty-first Congress of the German Surgical Society.
" 12th–30th (London, Olympia).—Ideal Homes Exhibition.
" 14th (Berlin).—Eighth Congress of the German Röntgen Society.
" 14th–20th (Rome).—Seventh International Congress on Tuberculosis.
" 15th–18th (Wiesbaden).—Twenty-ninth German Congress for Internal Medicine.
" 21st–24th (Munich).—Twenty-sixth Meeting of the Anatomical Society.

Medical Diary for the ensuing Week.

SOCIETIES.

ROYAL SOCIETY OF MEDICINE, 15, Cavendish-square, W. (temporary address during building of new house).

TUESDAY.
PATHOLOGICAL SECTION (Hon. Secretaries—J. C. G. Ledingham, A. E. Boycott): at 8.30 P.M.
Laboratory Meeting at the Cancer Laboratory, Middlesex Hospital, W.

RÖNTGEN SOCIETY, Institution of Electrical Engineers, Victoria Embankment, W.C.

TUESDAY.—8.15 P.M., Dr. Saubermann: The Physiological Principles of Internal Radium Therapy.—Mr. C. A. Clarke will demonstrate a Device for Viewing Wet Negatives.

NORTH-EAST LONDON CLINICAL SOCIETY, Prince of Wales's Hospital, Tottenham, N.

THURSDAY.—4.15 P.M., Dr. G. N. Meachen: The Relationship between Some of the Commoner Skin Diseases and Systemic Disorders.

LECTURES, ADDRESSES, DEMONSTRATIONS, &c.

MEDICAL GRADUATES' COLLEGE AND POLYCLINIC, 22, Chenies-street, W.C.

MONDAY.—4 P.M., Dr. T. C. Fox: Clinique (Skin). 5.15 P.M., Lecture:—Mr. M. Collier: Other Disorders of Impeded Respiration.
TUESDAY.—4 P.M., Dr. J. J. Perkins: Clinique (Medical). 5.15 P.M., Lecture:—Dr. N. Pitt: Adherent Pericardium.
WEDNESDAY.—4 P.M., Mr. G. E. Waugh: Clinique (Surgical). 5.15 P.M., Lecture:—Dr. J. Taylor: Some Common Nervous Diseases (lantern demonstration).
THURSDAY.—4 P.M., Mr. H. A. T. Fairbank: Clinique (Surgical). 5.15 P.M., Lecture:—Mr. V. Bonney: The Treatment of Displacement of the Uterus and Vagina.

POST-GRADUATE COLLEGE, West London Hospital, Hammersmith-road, W.

MONDAY.—10 A.M., Dr. Simson: Diseases of Women. 2 P.M., Medical and Surgical Clinics. X Rays. Operations. 2.30 P.M., Mr. Dunn: Diseases of the Eye.
TUESDAY.—10 A.M., Dr. Robinson: Gynæcological Operations. 2 P.M., Medical and Surgical Clinics. X Rays. Operations. Dr. Davis: Diseases of the Throat, Nose, and Ear. 2.30 P.M., Dr. Abraham: Diseases of the Skin.
WEDNESDAY.—10 A.M., Dr. Saunders: Diseases of Children. Dr. Davis: Operations of the Throat, Nose, and Ear. 2 P.M., Medical and Surgical Clinics. X Rays. Operations. Mr. B. Harman: Diseases of the Eye. Dr. Simson: Diseases of Women.
THURSDAY.—2 P.M., Medical and Surgical Clinics. X Rays. Operations. 2.30 P.M., Mr. Dunn: Diseases of the Eye.
FRIDAY.—10 A.M., Dr. Robinson: Gynæcological Operations. 2 P.M., Medical and Surgical Clinics. X Rays. Operations. Dr. Davis: Diseases of the Throat, Nose, and Ear. 2.30 P.M., Dr. Abraham: Diseases of the Skin.
SATURDAY.—10 A.M., Dr. Saunders: Diseases of Children. Dr. Davis: Operations of the Throat, Nose, and Ear. Mr. B. Harman: Diseases of the Eye. 2 P.M., Medical and Surgical Clinics. X Rays. Operations.

NORTH-EAST LONDON POST-GRADUATE COLLEGE, Prince of Wales's General Hospital, Tottenham, N.

MONDAY.—Clinics:—10.30 A.M., Surgical Out-patient (Mr. E. Gillespie). 2.30 P.M., Medical Out-patient (Dr. T. R. Whipham): Nose, Throat, and Ear (Mr. H. D. Gillies). 3 P.M., Clinical Pathology and Pathological Demonstration (Dr. W. H. Duncan).
TUESDAY.—Clinic: 2.30 P.M., Operations. Clinics:—Medical Out-patient (Dr. A. G. Auld.); Surgical (Mr. Howell Evans); Gynæcological (Dr. A. E. Giles). 3.30 P.M., Medical In-patient (Dr. A. J. Whiting).
WEDNESDAY.—Clinics:—2.30 P.M., Demonstration on Fevers (Dr. F. Thomson, at the North-Eastern Fever Hospital, St. Ann's-road, N.); Children's Out-patient (Dr. T. R. Whipham); Skin (Dr. G. N. Meachen): Eye (Mr. R. P. Brooks). 3 P.M., X Rays (Mr. W. Steuart); Clinical Pathology and Pathological Demonstration (Dr. W. H. Duncan). 5.30 P.M., Eye Operations (Mr. Brooks).

THURSDAY.—2.30 P.M., Demonstration on Fevers (Dr. F. Thomson; at the North-Eastern Fever Hospital, St. Ann's-road, N.); Gynæcological Operations (Dr. A. H. Giles): Clinics:—Medical Out-patient (Dr. A. J. Whiting); Surgical (Mr. Carson). 3 P.M., Medical In-patient (Dr. G. P. Chappel).

FRIDAY.—2.30 P.M., Operations. Clinics:—Medical Out-patient (Dr. A. G. Auld); Surgical (Mr. H. Gillespie); Eye (Mr. R. P. Brooks). 3 P.M., Medical In-patient (Dr. R. M. Leslie); Clinical Pathology and Pathological Demonstration (Dr. W. H. Duncan).

LISTER INSTITUTE OF PREVENTIVE MEDICINE, Lecture Theatre of the Lister Institute, Chelsea Bridge-road, S.W.

TUESDAY.—5 P.M., Dr. W. Nicoll: Modern Aspects of Helminthology—General Morphology and Biology of the Nematodes. (Lecture V.)

SALFORD ROYAL HOSPITAL.

THURSDAY.—4.30 P.M., Mr. J. B. Macalpine: Modern Methods of Diagnosis in Urinary Surgery. (Post-Graduate Course.)

OPERATIONS.

METROPOLITAN HOSPITALS.

MONDAY (1st).—London (2 P.M.), St. Bartholomew's (1.30 P.M.), St. Thomas's (3.30 P.M.), St. George's (2 P.M.), St. Mary's (2.30 P.M.), Middlesex (1.30 P.M.), Westminster (2 P.M.), Chelsea (2 P.M.), Samaritan (Gynæcological, by Physicians, 2 P.M.), Soho-square (2 P.M.), Gt. Northern Central (2.30 P.M.), West London (2.30 P.M.), London Throat (9.30 A.M.), Royal Free (2 P.M.), Guy's (1.30 P.M.), Children, Gt. Ormond-street (9 A.M.), St. Mark's (2.30 P.M.), Central London Throat and Ear (Minor 9 A.M., Major 2 P.M.).

TUESDAY (2nd).—London (2 P.M.), St. Bartholomew's (1.30 P.M.), St. Thomas's (3.30 P.M.), Guy's (1.30 P.M.), Middlesex (1.30 P.M.), Westminster (2 P.M.), West London, (2.30 P.M.), University College (2 P.M.), St. George's (1 P.M.), St. Mary's (1 P.M.), St. Mark's (2.30 P.M.), Cancer (2 P.M.), Metropolitan (2.30 P.M.), London Throat (9.30 A.M.), Samaritan (9.30 A.M. and 2.30 P.M.), Throat, Golden-square (9.30 A.M.), Soho-square (2 P.M.), Chelsea (2 P.M.), Children, Gt. Ormond-street (9 A.M. and 2 P.M., Ophthalmic, 2 P.M.), Tottenham (2.30 P.M.). Central London Throat and Ear (Minor, 9 A.M., Major, 2 P.M.), Royal National Orthopædic (9.30 A.M. and 4 P.M.).

WEDNESDAY (3rd).—St. Bartholomew's (1.30 P.M.), University College (2 P.M.), Royal Free (2 P.M.), Middlesex (1.30 P.M.), Charing Cross (3 P.M.), St. Thomas's 2 P.M.), London (2 P.M.), King's College (2 P.M.), St. George's (Ophthalmic, 1 P.M.), St. Mary's (2 P.M.), St. Peter's (2 P.M.), Samaritan (9.30 A.M. and 2.30 P.M.), Gt. Northern Central (2.30 P.M.), Westminster (2 P.M.), Metropolitan (2.30 P.M.), London Throat (9.30 A.M.), Cancer (2 P.M.), Throat, Golden-square (9.30 A.M.), Guy's (1.30 P.M.), Royal Ear (2 P.M.), Children, Gt. Ormond-street (9 A.M. and 9.30 A.M., Dental, 2 P.M.), Tottenham (Ophthalmic, 2.30 P.M.), West London (2.30 P.M.), Central London Throat and Ear (Minor, 9 A.M., Major, 2 P.M.).

THURSDAY (4th).—St. Bartholomew's (1.30 P.M.), St. Thomas's (3.30 P.M.), University College (2 P.M.), Charing Cross (3 P.M.), St. George's (1 P.M.), London (2 P.M.), King's College (2 P.M.), Middlesex (1.30 P.M.), St. Mary's (2.30 P.M.), Soho-square (2 P.M.), North-West London (2 P.M.), Gt. Northern Central (Gynæcological, 2.30 P.M.), Metropolitan (2.30 P.M.), London Throat (9.30 A.M.), Samaritan (9.30 A.M and 2.30 P.M.), Throat, Golden-square (9.30 A.M.), Guy's (1.30 P.M.), Royal National Orthopædic (9 A.M. and 3.30 P.M.), Royal Ear (2 P.M.), Children Gt. Ormond-street (9 A.M. and 2 P.M.), Tottenham (Gynæcological, 2.30 P.M.), West London (2.30 P.M), Central London Throat and Ear (Minor, 9 A.M., Major, 2 P.M.).

FRIDAY (5th).—London (2 P.M.), St. Bartholomew's (1.30 P.M.), St. Thomas's (3.30 P.M.), Guy's (1.30 P.M.), Middlesex (1.30 P.M.), Charing Cross (3 P.M.), St. George's (1 P.M.), King's College (2 P.M.), St. Mary's (2 P.M.), Ophthalmic (10 A.M.), Cancer (2 P.M.), Chelsea (2 P.M.), Gt. Northern Central (2.30 P.M.), West London (2.30 P.M.), London Throat (9.30 A.M.), Samaritan (9.30 A.M. and 2.30 P.M.), Throat, Golden-square (9.30 A.M.), Royal National Orthopædic (3.30 P.M.), Soho-square (2 P.M.), Children, Gt. Ormond-street (9 A.M., Aural, 2 P.M.), Tottenham (2.30 P.M.), St. Peter's (2 P.M.)., Central London Throat and Ear (Minor, 9 A.M., Major, 2 P.M.).

SATURDAY (6th).—Royal Free (9A.M.), London (2 P.M.), Middlesex (1.30 P.M.), St. Thomas's (2 P.M.), University College (9.15 A.M.), Charing Cross (2 P.M.), St. George's (1 P.M.), St. Mary's (10 A.M.), Throat, Golden-square (9.30 A.M.), Guy's (1.30 P.M.), Children, Gt. Ormond-street (9 A.M. and 9.30 A.M.), West London (2.30 P.M.).

At the Royal Eye Hospital (2 P.M.), the Royal London Ophthalmic (10 A.M.), the Royal Westminster Ophthalmic (1.30 P.M.), and the Central London Ophthalmic (2 P.M.), Hospital operations are performed daily.

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METEOROLOGICAL READINGS.

(Taken daily at 8.30 a.m. by Steward's Instruments.)

THE LANCET Office, March 27th, 1912.

Date.	Barometer reduced to Sea Level and 32° F.	Direction of Wind.	Rain fall.	Solar Radio in Vacuo.	Maximum Temp. Shade.	Min. Temp.	Wet Bulb.	Dry Bulb.	Remarks.
Mar. 21	29·11	S.E.	0·10	97	56	36	42	43	Raining
,, 22	29·13	S.W.	0·20	82	53	43	44	45	Raining
,, 23	29·73	W.	0·05	61	46	41	41	43	Overcast
,, 24	29 64	W.	0·34	95	57	43	45	47	Cloudy
,, 25	30·03	S.W.	...	96	62	47	54	55	Overcast
,, 26	30 25	S.W.	...	103	62	51	49	53	Cloudy
,, 27	30·13	W.	...	107	60	50	49	51	Cloudy

The following journals, magazines, &c., have been received:—British Journal of Dermatology, Transactions of the Ophthalmological Society of the United Kingdom, Revue de Psychiatrie, Journal d'Urologie, Revue d'Hygiène et de Police Sanitaire, Journal of Nervous and Mental Disease, Kala-azar Bulletin, Annales de l'Institut Pasteur, Philippine Journal of Science, Transactions of the Society of Tropical Medicine and Hygiene, Archives Internationales de Neurologie, Canadian Practitioner, Interstate Medical Journal, Annales de Gynécologie et d'Obstétrique, American Journal of Orthopedic Surgery, Detroit Medical Journal, Archives of Internal Medicine.

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